Personal Financial Literacy For Grades 7 & 8

Lessons for Classrooms and After School Programs

Texas Council on Economic Education

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These lessons are a part of the Texas Council on Economic Education's Smarter Texas program and based on the 2012 Math Personal Financial Literacy Texas Essential Knowledge and Skills

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The Texas Council on Economic Education (TCEE)

1801 Allen Parkway • Houston, TX 77019 • 713.655.1650

economicstexas.org • smartertexas.org

Editors

Chief Editor and Author
Cindy Manzano
Director of Smarter Texas
Texas Council on Economic Education

Editor
Laura Ewing
President and CEO
Texas Council on Economic Education

Web Editor
Allen Reding
Texas Council on Economic Education

Authors

Jean Frankie
Secondary Mathematics Consultant

Laura Harlow
Mathematics Instructor
The High School for the Performing and Visual Arts

Arthur C. Howard
Upper School Mathematics Teacher
Providence Classical School

Valerie Johse
Elementary Math Consultant
Texas Council on Economic Education

Mary Kemper
Secondary Mathematics Instructional Coach & Teacher
Coppell High School, Coppell ISD

Reviewers

Steven Cobb, Ph.D.
Associate Professor
Associate Dean for Administrative Affairs
Director, Center for Economic Education
University of North Texas

UNT
UNIVERSITY OF NORTH TEXAS®

Anne Papakonstantinou, Ed.D.
Project Director
Rice University School Mathematics Project
apapa@rice.edu

Richard Parr
Executive Director
Rice University School Mathematics Project
rparr@rice.edu

Susan Troutman
Associate Director for Secondary Programs
Rice University School Mathematics Project
troutman@rice.edu

Carolyn White
Associate Director for Elementary and Intermediate Programs
Rice University School Mathematics Project
clwhite@rice.edu

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Lesson Description

Students will investigate a grocery receipt and learn that some items are non-taxable and some are taxable. The students will calculate the sales tax and total amount owed on two receipts, one of which has non-taxable items.

Students will then analyze a paycheck stub at which time they will learn about deductions, gross pay and net income. They will calculate a basic income tax deduction using a table from the Internal Revenue Service; calculate Social Security tax and Medicare tax using the standard percent; and calculate other deductions to find the net income. Finally the students will play a game to practice calculating sales tax and payroll tax.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 7.13A:** Calculate the sales tax for a given purchase and calculate income tax for earned wages

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 7.1:** Mathematical Process Standards
- **Math 7.3A:** add, subtract, multiply, and divide rational numbers fluently
- **Math 7.3B:** apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers
- **Math 7.4D:** solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems

National Standards (Supporting standards)

CEE - Council for Economic Education

CCSS - Common Core State Standards

- **CEE Earning Income 8.11:** Social Security is a government program that taxes the income of current workers to provide retirement, disability, and survivor benefits for workers or their dependents.
- **CCSS Math:** Standards for Mathematical Practices
- **CCSS Math 7.RP:** Use proportional relationships to solve percent problems
- **CCSS Math 7.NS:** Apply properties of operations as strategies to multiply and divide rational numbers
- **CCSS Math 7.NS:** Solve real-world and mathematical problems involving the four operations with rational numbers

PFL Terms

- Sales tax
- Income tax
- Gross income
- Net income

Time Required

Three 45-minute class periods

Materials Required

- One copy of **Visual 7.1-1, 7.1-2**, **7.1-3**, **7.1-4, 7.1-5**
- One copy of **Activity 7.1-1** for each student
- One copy of **Activity 7.1-2** for each student and one for a visual

- One copy of **Activity 7.1-3** for each student
- One copy of **Activity 7.1-4a** for each student
- One copy of **Activity 7.1-4b** for teacher
- One calculator per student (optional)

Procedure

Engage

1. Ask: *Have you ever paid taxes? Why do people pay taxes?* ***(Sample answer: Taxes are used to pay for government agencies and services such as police and highways. In Texas most items that consumers purchase have a sales tax.)*** Then tell students that with this lesson, they will learn about two types of taxes: sales tax and payroll tax.

Explore

2. Display **Visual 7.1-1**. Tell students that Mrs. Hawkins went to the grocery store to buy a few items for the weekend. Shown is the grocery receipt Mrs. Hawkins received after making her purchases. Guide the students in understanding the sales receipt using the steps below.

   a. Ask: *What information is provided on the receipt?* ***(Name of grocery store is My Grocery, address of store, date of purchase, time of visit, items purchased, cost of each item, sales tax charged, total cost, cash tender, balance due, number of items sold.)*** Explain that receipts document the transaction type such as credit, debit or cash. "CASH TENDER" is the amount of money paid to the cashier. It also indicates that the transaction type was cash. "Change Due" is the change or the amount of money due back to the customer.

   b. Say: *Look at the items labeled "F" on the receipt. What general term would describe these products?* ***(All items labeled "F" are food items.)*** Explain that most food items in a grocery store require preparation and are therefore non-taxable. Taxable food items include things like snacks and sodas.

   c. Ask students to look at items labeled "T". *What do you notice about these items?* (***All of these items are non-food items except for the chips.)*** *What do you think the "T" represents?* (***"T" identifies items that are taxable.)*** *Why do you think the chips were taxed?* ***(Sample responses: It is a snack. It is a food that is already prepared.)***

Explain

3. Display **Visual 7.1-2**. Discuss with students the definition of sales tax, the rate of tax in Texas and local communities, and how the money is used. Ask students if they can think of other ways the money from sales taxes might be used. *Answers will vary.*

   - A sales tax for the sale of certain goods and services is collected by the seller and given to the government.
   - In Texas, the state sales tax is 6.25%; however, government agencies, such as cities and counties, can add additional taxes to the state amount up to a total of 8.25%.
   - Sales tax is used by the government for public services and programs such as:

     Police
     Libraries
     Prisons
     Public transportation
     Fire fighters
     Hospitals
     Highways

Explore

4. Display **Visual 7.1-1** again. Continue guiding the students in understanding the sales receipt using the steps below.

   a. Instruct students to total the prices for all of the non-taxable items. These are the items labeled "F". ***($22.85)*** Instruct students to total the prices for all of the taxable items. These are the items labeled "T". ***($21.83)***

   b. Explain that the sales tax for this receipt was 8.25%. Have students multiply 8.25% times the taxable total and round to the nearest cent. ***(0.0825 x $21.83 = $1.80)***

   c. Ask: *How is the total calculated for this bill?* ***(Add the total for the prices for all of the food items plus the total for the prices of all the taxable items and the tax.)*** Have the students make these calculations and compare their sums to the total on the receipt. ***(The amounts should be the same.)***

Elaborate

5. Distribute a copy of **Activity 7.1-1** to each student and display **Visual 7.1-3**. Ask a student to read about Ms. Avery. Point out that **Activity 7.1-1** show Ms. Avery's receipts. Read and explain the directions. Then have students work independently or in pairs to determine the missing values on the receipts.

6. Once students have completed the worksheet, allow students to share their results and explain their rationale for their calculations. ***(Sample response: For Dandy Discount, I totaled the taxable items. Then I multiplied this total times 0.0825 to determine the tax. Then I added the prices of the taxable items and the food items plus the tax to calculate the total.)*** Use **Key 7.1-2** as a guide.

Evaluate

7. In pairs, have the students describe the difference between the receipts. ***(The grocery receipt distinguishes between taxable and non-taxable while the department store does not. The department store receipt has a subtotal since all items are taxed and the grocery store does not. Dandy Discount was paid with cash and Modern Fashions was paid with a debit card.)***

8. Ask students why Modern Fashions does not label each item with a "T" or an "F"? ***(Modern Fashions does not sell food items. Therefore all of their items are taxable.)***

Engage

9. Display **Visual 7.1-4**. Tell students that to be able to buy items, they must have a source of income. Julia is in a high school program that allows her to work half a day and go to school half a day. Her first week, she worked 22 hours at $9.75 an hour at a local daycare. How much did she earn? ***($9.75 x 22 = $214.50)*** Julia will deposit $100 from each pay check in her college savings account. She plans to spend the remainder of her first pay check to purchase a $99 camera. However, when Julia received her paycheck, she was surprised at the amount of her check.

10. Display **Visual 7.1-5.** Use this visual to explain the difference between gross pay and net income and to discuss the taxes that are deducted from earnings.

11. Display **Visual 7.1-4** again. Tell students that both Julia's paycheck and pay stub are displayed. Guide the students in understanding the paycheck stub using the steps below.

a. *What is Julia's gross pay?* ***($214.50)*** Explain that this is the amount Julia earned.

b. *What is Julia's net pay?* **(*$180.81*)** Explain that this is the amount Julia is going to receive after deductions are made.

c. *What happened to the rest of her pay?* ***(Part of the paycheck went to pay income tax, Social Security tax, and Medicare tax.)***

d. *What was the total amount for deductions?* ***($33.69)***

e. *How much will Julia deposit into her college savings?* ***($100)***

f. *Will Julia be able to purchase the camera?* ***(No. If she deposits $100 into her college savings account, she will only have $80.81.)***

g. *Why was the check less than what she expected?* ***(She forgot to consider the taxes that she had to pay.)***

Explore

12. Distribute a copy of **Activity 7.1.2** to each student and display as a visual. Explain to students that income tax is a tax on money people earn (income) which is paid to the government. Our personal income tax is a progressive tax. That means that the more a person earns the higher the tax rate is. The table in **Activity 7.1-2** shows that income tax is a progressive tax. As the amount of income increases, the percent of tax increases.

13. Explain that the amount that will be withheld from an individual's paycheck for federal income taxes is calculated differently based on the individual's financial circumstances. For example, a single parent with 4 children has more allowances or tax breaks than a single person with no children earning the same wages. Some employees are paid weekly, others biweekly, others semi-monthly and some monthly. All of these factors and more are considered when calculating the federal income tax to withhold. In addition, the tables and formulas to calculate income taxes differ from year to year. For our purpose, we will only consider a high school student working part-time. The point of this lesson is to help you, as a student, understand your paycheck and to gain understanding on how to read a tax table. Most high school students, even though they might work part-time, are still dependents of their parents. The calculations we will use are based on the understanding that the employee is living at home and dependent on the parent(s) for food and shelter. Instruct students to complete column 2 on **Activity 7.1-2** as the teacher models. Use the explanation in column 1 of **Activity 7.1-2 or Key 7.1-2** to guide the students. Then have the students complete column 3 independently or in pairs. Use the key provided to go over the answers.

Elaborate

14. Distribute a copy of **Activity 7.1-3** to each student. Ask a student to read the problem. *Manuel Ramos is a high school senior who has a part-time job that pays $10.75 an hour. During a one week period he worked 30 hours. Income tax, Social Security tax of 6.2% of his income, and Medicare tax of 1.45% of his income are deducted from each paycheck.*

15. Have the students answer the questions and use the answers to fill in the paycheck stub

and then write the check for his employer.

16. Display Activity **7.1-3**. Have different students explain 1-6. Use **Key 7.1-3** to guide. As calculations are explained by the students, the teacher should fill in the paycheck stub.

Evaluate

17. Prepare **Activity 7.1-4b** prior to game by cutting out squares and placing them in a bag or box. Distribute a copy of **Activity 7.1-4a** and calculator (optional) to each student. Have students take out a sheet of paper for scratch work and a pencil. Tell students to randomly place nine of the answers listed at the top of the page in the squares on the table.

18. Tell students you are going to draw a tax problem from a bag. They should listen carefully as you read the tax problem. They are then to calculate the answer to the question that is read to them. If that answer is on their TIC TAC Pay the TAX board, they will mark the square with an "X". This game is similar to TIC TAC TOE and can be "won" by getting three "X's" in a row. (For a greater challenge, keep playing till someone has an "X" in each of their nine squares.

Evaluate/End

19. For closure, pose the questions below.
    - ***a.*** What is the difference between paying sales tax and paying income tax? ***(Sample response: The sales tax is paid when purchasing goods and services. The income tax is paid by deducting the tax when income is earned.)***
    - ***b.*** How is sales tax calculated? ***(Multiply the sales tax rate times the total price of the taxable items or cost of service.)***
    - ***c.*** How is income tax calculated***? (Income tax is calculated differently for each employee depending on many factors. A tax table is used. Your employer will make these calculations for you.)***

Visual 7.1-1

My Grocery

1234 Main Street
Anytown, TX
03/14/12 11:38 a.m.

CHIPS	2.98	T
CLOTHES DETERGENT	14.99	T
MUFFINS	2.89	F
LETTUCE	1.47	F
PAPER TOWELS	1.39	T
BREAD	2.79	F
EGGS	1.98	F
PEANUT BUTTER	3.37	F
GRAPE JELLY	1.59	F
MILK	3.58	F
DISHWASHING SOAP	2.47	T
TUNA FISH PKG	1.59	F
PEANUT BUTTER	3.59	F
SALES TAX	1.80	
TOTAL	46.48	
CASH TENDER	60.00	
CHANGE	13.52	
NUMBER OF ITEMS SOLD =	13	

THANK YOU FOR SHOPPING WITH US.

Visual 7.1-2 Name _____ Class Period _____

Sales Tax

- A sales tax for the sale of certain goods and services is collected by the seller from the consumer and paid to the government.

- In Texas, the state sales tax is 6.25%; however, local governments, such as cities and counties, can add additional taxes to the state amount up to a total of 8.25%.

- Sales tax is used by the government for public services and programs such as:

Police	Fire fighters
Libraries	Hospitals
Prisons	Highways

Visual 7.1-3

Name _____ Class Period _____

Ms. Avery Goes Shopping

One day Ms. Avery went shopping. Her first trip was to the department store to buy some spring clothes. When she finished buying the clothes, she stopped at the grocery store to buy food and some other items. It started raining when she arrived at her home. As she carried her purchases into her house, her receipts got wet. Some of the amounts were washed out. She remembered she paid for her clothes with her debit card and paid for the groceries with $40 in cash.

Activity 7.1-1 Name _____ Class Period _____

Directions: Help Mrs. Avery find the missing amounts on her receipts. Then answer the question below the table.

Dandy Discount		
5555 First Street		
Somewhere, TX		
04/05/12 1:14p.m.		
Tea	3.28	F
Milk	3.59	F
Notebook paper	1.65	T
Magazine	5.59	T
AA Batteries	7.49	T
Frozen vegetables	.99	F
Snack pack pudding	2.50	F
Box of tissue	1.59	F
Orange juice	3.58	F
Cereal	4.79	F
Candy bar	1.29	T
SALES TAX (8.25%)	_____	
TOTAL	_____	
CASH TENDER	40.00	
CHANGE	_____	
NUMBER OF ITEMS SOLD	_____	
THANK YOU FOR SHOPPING WITH US.		

Modern Fashions	
05/01/13	
63940 Market Ave.	
Styleton, TX	
Polo shirt	23.99
Jeans	18.99
Belt	12.59
Khaki shorts	24.99
White shirt	16.99
Sales tax (8.25%)	
Total	
Debit	
Change	0
Best buys for your money!	

What are the differences between the two receipts? _____

_____

_____

Key 7.1-1 Name _____ Class Period _____

Directions: Help Mrs. Avery find the missing amounts on her receipts. Then answer the question below the table.

Dandy Discount

5555 First Street
Somewhere, TX
04/05/12 1:14p.m.

Tea	3.28	F
Milk	3.59	F
Notebook paper	1.65	T
Magazine	5.59	T
AA Batteries	7.49	T
Frozen vegetables	.99	F
Snack pack pudding	2.50	F
Box of tissue	1.59	F
Orange juice	3.58	F
Cereal	4.79	F
Candy bar	1.29	T
SALES TAX (8.25%)	1.32	
TOTAL	37.67	
CASH TENDER	40.00	
CHANGE	2.33	
NUMBER OF ITEMS SOLD	11	

THANK YOU FOR SHOPPING WITH US.

Modern Fashions

05/01/13
63940 Market Ave.
Styleton, TX

Polo shirt	23.99
Jeans	18.99
Belt	12.59
Khaki shorts	24.99
White shirt	16.99
Subtotal	97.55
Sales tax (8.25%)	8.05
Total	105.60
Debit	105.60

Best buys for your money!

What are the differences between the two receipts? (Sample responses: The grocery receipt distinguishes between taxable and non-taxable and the department store does not. The department store receipt has a subtotal since all items are taxed and the grocery store does not. Dandy Discount was paid with cash and Modern Fashions was paid with a debit card.)

Visual 7.1-4

What happened to Julia's earnings?

Julia is in a high school program that allows her to work half a day and go to school half a day. Her first week, she worked 22 hours at $9.75 an hour at a local daycare. How much did she earn?

Unreal Corporations — Check No. 1234
Payroll Account — Date: November 15, 2013

Pay to the order of: Julia Sparkle $180.81

One hundred eighty and 81/100 Dollars

First Corner Bank
Anytown, USA

Memo: Payroll Curtis Void

Detach below before depositing. Save for your records.

Employee: Julia Sparkle			
	Gross Pay		$214.50
	Deductions		
	Federal Income Tax	$17.28	
Pay Period: 11/08/2013 to 11/14/2013	Social Security	$13.30	
	Medicare/Medicaid	$3.11	
	Total Deductions		$33.69
	Net Pay		$180.81

Julia will deposit $100 from each pay check in her college savings account. She plans to spend the remainder of her first pay check to purchase buy a $99 camera. However, when Julia received her paycheck, she was surprised at the amount of her check. *Why was the check less than what she expected?*

Visual 7.1-5

Understanding Your Paycheck

Gross Pay is the amount earned before taxes and deductions are subtracted or withheld.

Net Income is calculated by starting with the gross pay on a paycheck and then subtracting deductions. Deductions include taxes paid to the government, such as Social Security tax, Medicare tax and Income tax and optional deductions including health insurance premiums, donations to charity, and money set aside for savings.

Types of Taxes Withheld from Earnings

a. **Income tax** – money paid to the federal government based on income earned

b. **Social security tax** – this tax will provide retirement, disability, and survivor benefits for workers or their dependents

c. **Medicare tax** – helps pay for many medical services for people 65 years or older

Activity 7.1-2 Name _____ Class Period _____

Percentage Method Tables for Income Tax Withholding for Weekly Pay Period

(For Wages Paid in 2013)

(a) SINGLE person (including head of household)—

If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:	
Not over $42		$0	
Over—	**But not over—**		**of excess over—**
$42	—$214	$0.00 plus 10%	—$42
$214	—$739	$17.20 plus 15%	—$214
$739	—$1,732	$95.95 plus 25%	—$739
$1,732	—$3,566	$344.20 plus 28%	—$1,732
$3,566	—$7,703	$857.72 plus 33%	—$3,566
$7,703	—$7,735	$2,222.93 plus 35%	—$7,703
$7,735		$2,234.13 plus 39.6%	—$7,735

Source: Notice 1036 (Rev. January 2013, Department of the Treasury, Internal Revenue Service.)

	Steps:	**Example:**	**Your Problem:**
Step 1:	Determine the correct table to use based on individual basis.	The table for this situation is for a single person, who gets paid weekly in 2013.	The table for this situation is for a single person, who gets paid weekly in 2013.
Step 2:	Determine your gross weekly pay.	15 hours at $9.00 per hour	22 hours at $10 per hour
Step 3:	Find the row that contains the range for the gross income in the table.		
Step 4:	Use corresponding row to find "of excess over—" amount. This is the number under the heading "of excess over—"		
Step 5:	Subtract the number in step 4 from your weekly pay.		
Step 6:	Find the formula in the middle column of the corresponding row and Calculate the withholding tax.		

Key 7.1-2 Name _____ Class Period _____

Percentage Method Tables for Income Tax Withholding for Weekly Pay Period

(For Wages Paid in 2013)

(a) SINGLE person (including head of household)—

If the amount of wages (after subtracting withholding allowances) is:		The amount of income tax to withhold is:	
Not over $42		$0	
Over—	**But not over—**		**of excess over—**
$42	—$214 . .	$0.00 plus 10%	—$42
$214	—$739 . .	$17.20 plus 15%	—$214
$739	—$1,732 . .	$95.95 plus 25%	—$739
$1,732	—$3,566 . .	$344.20 plus 28%	—$1,732
$3,566	—$7,703 . .	$857.72 plus 33%	—$3,566
$7,703	—$7,735 . .	$2,222.93 plus 35%	—$7,703
$7,735		$2,234.13 plus 39.6%	—$7,735

Source: Notice 1036 (Rev. January 2013, Department of the Treasury, Internal Revenue Service.)

	Steps:	**Example:**	**Your Problem:**
Step 1:	Determine the correct table to use based on individual basis.	The table for this situation is for a single person, who gets paid weekly in 2013.	The table for this situation is for a single person, who gets paid weekly in 2013.
Step 2:	Determine your gross weekly pay.	15 hours at $9.00 per hour 15 **x $9.00 = $135**	22 hours at $10 per hour **22 x 10 = $220**
Step 3:	Find the row that contains the range for the gross income in the table.	**Row 1: Since $135 is over $42, but not over $214**	**Row 2: Since $220 is over $214, but not over $739**
Step 4:	Use corresponding row to find "of excess over—" amount. This is the number under the heading "of excess over—"	**$42**	**$214**
Step 5:	Subtract the number in step 4 from your weekly pay.	**$135 – $42 = $93**	**$220 - $214 = $6**
Step 6:	Find the formula in the middle column of the corresponding row and Calculate the withholding tax.	**$0.00 plus 10%** **$0.00 + .10 x $93 = $9.30**	**$17.20 plus 15%** **$17.20 + .15 x $6 = $18.10**

Activity 7.1-3

Name _____ Class Period _____

Manuel Ramos is a high school senior who has a part-time job that pays $10.75 an hour. During a one week period he worked 30 hours. Income tax, Social Security tax, and Medicare tax are deducted from each paycheck. Fill in the paycheck and check stub below for his employer.

Directions: Use the following questions to complete the check stub for Manuel. Round all answers to the nearest cent.

1. What was Manuel's gross income for the one week? _____

2. Use the income tax table from **Activity 7.1-2** to calculate Manuel's income tax.

   _____

3. Calculate the Social Security tax at 6.2% of Manuel's gross pay. _____

4. Calculate the Medicare tax at 1.45% of Manuel's gross pay. _____

5. What are Manuel's total deductions? _____

6. How much is Manuel's net pay? _____

7. Complete the check stub and write the check to Manuel Ramos for his net pay.

Unreal Corporations Payroll Account		Check No. 5555 Date:	
Pay to the order of:			
First Corner Bank Anytown, USA			
Memo: Payroll		Vladity Notworthy	
Detach below before depositing. Save for your records.			
Employee: Manuel Ramos Pay Period: 07/08/2013 to 07/14/2013	Gross Earnings		
	Deductions:		
	Federal Income Tax		
	Social Security Tax		
	Medicare Tax		
	Total deductions		
	Net Pay		

Key 7.1-3 Name _____ Class Period _____

Manuel Ramos is a high school senior who has a part-time job that pays $10.75 an hour. During a one week period he worked 30 hours. Income tax, Social Security tax, and Medicare tax are deducted from each paycheck. Fill in the paycheck and check stub below for his employer.

Directions: Use the following questions to complete the check stub for Manuel. Round all answers to the nearest cent.

1. What was Manuel's gross income for one week? $10.75 x 30 = $322.50

2. Use the income tax table from **Activity 7.1-4** to calculate Manuel's income tax. $322.50 - $214 = $108.50; $17.20 + (0.15 x $108.50) = $33.475 which rounds to $33.48.

3. Calculate the Social Security tax at 6.2% of Manuel's gross pay. 0.062 x $322.50 = $19.995 which rounds to $20.00.

4. Calculate the Medicare tax at 1.45% of Manuel's gross pay. 0.0145 x $322.50 = $4.67625 which rounds to $4.68.

5. What are Manuel's total deductions? Income tax + Social Security tax + Medicare tax = $33.48 + $20.00 + $4.68 = $58.16

6. How much is Manuel's net pay? $322.50 - $58.16 = $264.34

7. Complete the check stub and write the check to Manuel Ramos for his net pay.

Unreal Corporations
Payroll Account

Check No. 5555
Date: July 15, 2013

Pay to the order of: Manuel Ramos $264.34

Two hundred sixty-four 34/100 Dollars

First Corner Bank
Anytown, USA

Memo: Payroll Vladity Notworthy

Detach below before depositing. Save for your records.

Employee: Manuel Ramos	Gross Earnings		$322.50
	Deductions:		
	Federal Income Tax	$33.48	
Pay Period: 07/08/2013 to 07/14/2013	Social Security Tax	$20.00	
	Medicare Tax	$4.68	
	Total deductions		$58.16
	Net Pay		$264.34

Activity 7.1-4a Name _____ Class Period _____

Directions: Select nine of the numbers from the list below to put randomly in the squares on the TIC TAC Pay the TAX board. Work the problems as your teacher reads them. If you have the answer, then draw an "X" through the square with that number.

$0.49	$1.62	$1.94	$7.25	$26.66	$19.43
$0.84	$17.99	$5.99	$31.62	$22.32	$5.58
$1.02	$49.85	$9.10	$18.75	$5.37	$6.61

TIC TAC Pay the TAX

Activity 7.1-4b

TIC TAC Pay the TAX Cards

Cut the following problems apart, fold them and put them in a bag to be drawn out for the TIC TAC Pay the TAX game. The answer is in parenthesis after the problem.

Alex purchased a hamburger combo advertised at $5.99. If the sales tax is 8.25%, how much tax will he pay? ($0.49)	Alexis purchased a new music CD for $11.99. If the sales tax rate is 7%, how much did she pay in sales tax? ($0.84)	Jane worked for 10 hours on the weekend. She was paid $7.00 per hour. How much Medicare tax was withheld from her paycheck if the tax rate is 1.45%? ($1.02)
While visiting his grandmother, Lex ruined his jeans and had to purchase new ones. He paid $24.99 for the jeans. If the sales tax is 6.5%, how much sales tax did Lex pay? ($1.62)	Huyen went to the grocery store for her mother to buy milk, butter, bread, and cereal. Her bill was $17.99. If the sales tax rate is 8.25%, how much did she pay at the checkout, including tax? (Food is not taxable. $17.99)	A social worker's weekly wage is $804. How much Social Security tax was withheld from her check if the tax rate is 6.2% ($49.85)
Jess needs a backpack for his hiking trip. The backpack cost $24.99. The tax rate in his town of La Porte, TX is 7.75%. How much sales tax did Jess pay? ($1.94)	Ronnie purchased a bag of apples for $5.99. If the tax rate is 8.25%, how much did he pay at the checkout? (Food is not taxable. His bill was $5.99)	Maria received a new camera for her birthday. Her parents paid $129.99 for the camera plus 7% tax. How much sales tax did her parents pay? ($9.10)

Beverly worked as a part time librarian. Last week she earned $500.00. How much Medicare tax was withheld from her paycheck if the tax rate is 1.45%? ($7.25)	Alma is a hairdresser. This week she earned $510. How much Social Security tax was withheld from her check if the tax rate is 6.2% ($31.62)	Lisa saved to purchase a new iPad. The iPad costs $300. If she has to pay 6.25% sales tax, how much more money does she need to pay the tax? (18.75)
Yao worked as a photographer. Last weekend he earned $430 taking pictures of a party. How much Social Security tax was withheld from his check if the tax rate is 6.2% ($26.66)	Kate worked at the day care center. She worked 40 hours last week and earned $9 an hour. How much Social Security tax was withheld from her check if the tax rate is 6.2% ($22.32)	At the grocery store, Tamalia purchased 3 bell peppers at $1.25 each and a roll of paper towels for $1.50. If the tax rate is 8.25%, what was her total bill? ($5.37)
Nathan bought a new DVD at the electronics store. It cost $17.99. If the sales tax rate is 8%, what is his total bill? ($19.43)	Gary worked at a fast food place for $9.00 per hour. Last weekend he worked 10 hours. How much social security will be deducted from his paycheck, if the rate is 6.2%? ($5.58)	At the grocery store, Harry purchased 1 loaf of bread for $1.99 and a box of garbage bags for $4.29. If the tax rate is 7.75%, what was his total bill? ($6.61)

Lesson Description

This lesson builds on Grade 7, Lesson 1. Students will calculate net income and categorize expenses to create a budget. Percentages for each category will be calculated and analyzed.

For the second part, students will analyze a budget and identify variable and fixed expenses. They will then use this understanding to balance a budget. Students will make spending decisions to ensure that the expenses do not exceed the income.

Finally, students will use Texas Reality Check to develop their anticipated future budget. Based on their decisions, they will be given a budget and a target salary that will provide for this lifestyle they have chosen. They will then explore occupations that will provide the target salary.

Texas Essential Knowledge and Skills (Target standards)

- **Math 7.13B** identify the components of a personal budget, including income, planned savings for college, retirement, and emergencies; taxes; and fixed and variable expenses and calculate what percentage each category comprises of the total budget

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 7.1:** Mathematical Process Standards
- **Math 7.3A:** add, subtract, multiply, and divide rational numbers fluently
- **Math 7.3B:** apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers
- **Math 7.4D:** solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems

National Standards (Supporting standards)

CEE - Council for Economic Education

CCSS - Common Core State Standards

- **CEE Buying Goods and Services 8.5:** A budget includes fixed and variable expenses, as well as income, saving, and taxes.
- **CEE Buying Goods and Services 8.6:** People may revise their budget based on unplanned expenses and changes in income.

- **CCSS Math:** Standards for Mathematical Practices
- **CCSS Math 7.RP:** Use proportional relationships to solve percent problems
- **CCSS Math 7.NS:** Apply properties of operations as strategies to multiply and divide rational numbers
- **CCSS Math 7.NS:** Solve real-world and mathematical problems involving the four operations with rational numbers

PFL Terms

- Budget
- Gross pay
- Net income
- Fixed expenses
- Variable expenses

Time Required

Two 45-minute class periods

Materials Required

- A copy of **Activity 7.2-1** for each student
- A copy of **Activity 7.2-2** for each student
- A copy of **Activity 7.2-3** for each student
- 1 sheet of chart paper per group
- 2-3 markers per group
- A computer with access to the Internet for each student

Procedure

Engage

1. Write the following words on the board: income and expenses. Ask what is income? ***(Money received for doing a job or profit earned from a business.)*** What are expenses***? (Money that you have to pay out.)***

2. Add the word "budget" to the board. Ask students to write a sentence using the three terms. After 1 minute, have them share their sentence with a neighbor. Direct each student to adjust his/her sentence if needed and then share the adjusted sentence with a different partner. Students should adjust the sentence again if needed. Next, have a few students share their final version their sentences. Write these on the board. ***(Sample sentences: A budget is a plan to manage income and expenses. Stacie budgets so that expenses do not exceed income.)*** Point out that the word "budget" can be a noun such as in the first sentence. In this case, it is a plan that shows how the income will be distributed. In the second sentence it is used as a verb to describe what will be done with the income and expenses.

Explore

3. Distribute **Activity 7.2-1** to each student. Group students with two or three other students. Explain that a budget is a tool that helps people manage their money and plan for the future. Today they will help Barney create a monthly budget. Barney has been working full-time for 3 months. He knows the importance of keeping financial records. Therefore he decides to begin by creating a monthly budget.

4. Direct students' attention to part 1. Ask them to calculate Barney's net monthly income by following the steps on part 1. Then go over the process by asking the questions below.

   a. *Calculate Barney's total deductions by adding the federal taxes and his medical premium. Enter this number in the last column for Total Deductions on his paycheck stub.* ***($289.90 + $119.66 + $27.99 + $100.00 = $537.55)***

   b. *Subtract Barney's Total Deductions from his Gross Pay. Enter this number in the last column for Net Pay on his paycheck stub.* ***($1930.00 - $537.55 = $1392.45)***

   c. *Barney receives a semi-monthly paycheck. What does this mean?* ***(He gets paid twice a month.)***

   d. *How much money will Barney bring home monthly?* ***($2784.90)*** Explain that a budget can be calculated by the day, week, month, or year. Since Barney is creating a monthly budget, students need to consider how much income Barney earns every month and how much he spends every month.

5. The remainder of the activity is self-guided. Have students follow the steps on **Activity 7.2-1**. The teacher should monitor groups. A key has been provided.

Explain

6. Once students have completed this activity, use the questions on the worksheet to lead a class discussion.

   a. Does Barney spend more than he makes? Explain. No. Barney's monthly net income is $2784.90 and his expenses are also $2784.00.

   b. What percent of Barney's monthly net income is housing? 32%

   c. What percent of Barney's monthly net income is transportation? 19%

   d. Why is the medical insurance premium not included in this budget? In Barney's case, it is listed as a deduction. This means that it is paid before calculating his net income.

   e. What is the total of Barney's taxes for one month? 2($289.90 + $119.66 + $27.99) = $875.10

   f. What percent of Barney's monthly gross income are taxes? $875.10/$3860 = 23%

   g. Why did Barney not include a category for taxes in his budget? The taxes were not part of his net income.

Elaborate

7. Distribute **Activity 7.2-2** to each student. Keep students in small groups. Explain that there are many reasons for creating a budget. Consider that your budget is calculated for a monthly net income of $4200. If you are laid off and find a new job that only pays $3800, you can use your existing budget to decide what expenses can be reduced.

8. Read the introduction on **Activity 7.2-2** to the students.

   Barney's girlfriend, Betty, is still in college. She is determined not to get a loan to pay for tuition and books. Therefore she lives at home and works part-time. She knows that if she can save $300 every month, she will have enough money to pay for next semester's college tuition and books. Every month Betty spends more money than she makes. Her father has been giving her money when she overspends. He has explained that he will no longer bail her out.

   Barney has agreed to help Betty balance her budget. First, he asked her to gather all of her receipts for the month of August and enter the cost in the budget worksheet below.

9. Instruct the students to calculate Betty's expenses. Then answer questions a - c.

   a. How much does Betty have available to spend each month? ***($850)***

   b. How much did Betty spend in August? ***($1035)***

c. How much does Betty need to cut back each month? ***($185)***

10. Write "Fixed Expenses" and "Variable Expenses" on the board. Draw a line between the two terms. Have students read (d) the definition of a fixed expense. **Fixed expenses** are those expenses that remain the same each month. Ask students to write on their worksheet two examples of expenses that are fixed. After 1 minute, have students share their examples with their group. Then have one student from each group write one example on the board in the Fixed Expenses column. ***(Sample: rent, car payment, cell phone)*** For each item listed on the board, ask: *Will the cost for this item be the same every month?* Some items may be debatable. The class will need to come to a compromise. For example, a cell phone service bill may be fixed for those consumers who have unlimited text and unlimited calls or for those consumers who never exceed their limits. For those consumers who have limits and often exceed those limits, the cell phone service fee will vary. For some families, a savings account is fixed because they use the "Pay yourself first" method. This means that they first deposit a fixed amount into a savings and then stretch the remainder of their income to cover other expenses. Others will pay their expenses first. The remaining balance will be deposited into a savings. This deposit will vary month to month or paycheck to paycheck.

11. Have the students read (e) the definition of a variable expense. **Variable expenses** are those expenses that vary from month to month. Ask students to write two examples of expenses that vary from month to month on their activity sheet. After one minute, have students share their examples with their group. Then have one student from each group, write one example on the board in the Variable Expenses column. **Sample: food, utilities, entertainment, clothes** Once again, some items may be debatable. Go over each item and discuss the circumstances where the expense is a variable expense and circumstances where it might be considered a fixed expense.

12. Then have students read (f) and complete task.

Since Betty will need to make adjustments to her budget, Barney will have her identify in column 1 if the item is a fixed expense or a variable expense. In column 1, write "F" for fixed expense and "V" for variable expense.

13. Explain to student that each group will need to decide if the item is a fixed or variable expense. Some groups may differ when identifying the expense. The teacher should circulate and ask groups to explain how they made their decision on various expenses.

14. The remainder of the activity is self-guided. Allow groups to complete the remainder of the activity.

15. Distribute chart paper and markers to each group. After students have completed the activity, have students write their plan for Betty's budget on chart paper. Have one member from each group explain how they adjusted Betty's budget. Ask students how they know the budget is balanced? ***(The total expenses should equal $850 which is the same as Betty's net income.)***

Elaborate

16. Take the students to a computer lab with Internet access. Distribute **Activity 7.2-3** to

each student. Say: *Now it is time for you to take a reality check. Have you thought about your future? What will your budget look like? What type of an occupation do you need to afford this budget? The following simulation will help you make these decisions.*

17. Have the students follow the directions on **Activity 7.2-3.** When they have completed the activity, have them share with a partner their future budget; what salary they will need to live the lifestyle to pay for the expenses on the budget; and an occupation that will pay this salary.

Evaluate/End

18. For closure pose the following questions.

- What is net income***? (The amount of money you receive for work after deductions are subtracted.)***
- What are fixed expenses? ***(Expenses that are the same week to week or month to month.)***
- What are variable expenses? ***(Expenses that vary week to week or month to month.)***
- What is purpose of a budget? ***(To help someone plan for their spending and saving.)***

Activity 7.2-1 Name _____ Class Period _____

Directions: Read the steps for creating a monthly budget below. Then help Barney create a budget by filling in the missing information.

Barney has been working full-time for 3 months. He knows the importance of keeping financial records. Therefore he decides to begin by creating a budget.

Step 1: Calculate the monthly net income.

Below is Barney's semi-monthly paycheck stub.

Employee: Barney Smith Pay Period: 09/01/2013 to 09/13/2013	Gross Pay		$1930.00
	Deductions:		
	Federal Income Tax	$289.90	
	Social Security Tax	$119.66	
	Medicare Tax	$27.99	
	Medical Premium	$100.00	
	Total Deductions		
	Net Income		

a. Calculate Barney's total deductions by adding the federal taxes and his medical premium. Enter this number in the last column for Total Deductions on his paycheck stub.

b. Subtract Barney's Total Deductions from his Gross Pay. Enter this number in the last column for Net Pay on his paycheck stub.

c. Barney receives a semi-monthly paycheck. What does this mean? _____

d. What is Barney's monthly net income? _____

Step 2: Categorize monthly expenses.

Listed below are Barney's monthly expenses.

House payment $900	Electricity $122
Clothes $120	Retirement Savings $150
Car payment $240	Gasoline and car maintenance $170
Entertainment $200	Cell phones $89
Emergency savings $100	Water and gas $52
Restaurants $175	Groceries $275
Car insurance $120	Miscellaneous $71

List his expenses under the appropriate category and find the total amount for that category.

Housing	Amount	Food	Amount	Utilities	Amount
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Total	_____	Total	_____	Total	_____

Savings	Amount	Transportation	Amount	Other	Amount
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Total	_____	Total	_____	Total	_____

Step 3: List categories and their total in budget worksheet.

Using the information above, complete the budget sheet below. Round each percent to the nearest whole number.

Monthly Budget Worksheet Monthly Net Income:		
Expenses	Cost	Percentage of Monthly Net Income
Housing:		
Food:		
Utilities:		
Savings:		
Transportation:		
Other:		
Total Expenses:		

a. Does Barney spend more than he makes? Explain. _____

b. What percent of Barney's monthly net income is housing? _____

c. What percent of Barney's monthly net income is transportation? _____

d. Why is the medical insurance premium not included in this budget? _____

e. What is the total of Barney's taxes for one month? _____

f. What percent of Barney's monthly gross pay are taxes? _____

g. Why did Barney not include a category for taxes in his budget? _____

_____

Key 7.2-1 Name _____ Class Period _____

Directions: Read the steps for creating a monthly budget below. Then help Barney create a budget by filling in the missing information.

Barney has been working full-time for 3 months. He knows the importance of keeping financial records. Therefore he decides to begin by creating a budget.

Step 1: Calculate the monthly net income.

Below is Barney's semi-monthly paycheck stub.

Employee: Barney Smith Pay Period: July 2013	Gross Pay		$1930.00
	Deductions:		
	Federal Income Tax	$289.90	
	Social Security Tax	$119.66	
	Medicare Tax	$27.99	
	Medical Premium	$100.00	
	Total Deductions		**$537.55**
	Net Income		**$1392.45**

a. Calculate Barney's total deductions by adding the federal taxes and his medical premium. Enter this number in the last column for Total Deductions on his paycheck stub.
$289.90 + $119.66 + $27.99 + $100.00 = $537.55

b. Subtract Barney's Total Deductions from his Gross Pay. Enter this number in the last column for Net Pay on his paycheck stub**. $1930.00 - $537.55 = $1392.45**

c. Barney receives a semi-monthly paycheck. What does this mean? **He gets paid twice a month.**

d. How much money will Barney bring home monthly? **$2784.90**

Step 2: Categorize monthly expenses.

Listed below are Barney's monthly expenses.

House payment $900	Electricity $122
Clothes $120	Retirement Savings $150
Car payment $240	Gasoline and car maintenance $170
Entertainment $200	Cell phone $89
Emergency savings $100	Water and gas $52
Restaurants $175	Groceries $275
Car insurance $120	Miscellaneous $71

List his expenses under the appropriate category and find the total amount for that category.

Housing	Amount	Food	Amount	Utilities	Amount
House payment	$900	Restaurants	$175	Electricity	$122
		Groceries	$275	Water and gas	$52
Total	$900	Total	$450	Total	$174

Savings	Amount	Transportation	Amount	Other	Amount
Retirement	$150	Car payment	$240	Clothes	$120
Emergency	$100	Car insurance	$120	Entertainment	$200
		Gas and main.	$170	Cell phone	$89
				Misc.	$71
Total	$250	Total	$530	Total	$480

Step 3: List categories and their total in budget worksheet.

Using the information above, complete the budget sheet below. Round each percent to the nearest whole number.

Monthly Budget Worksheet Monthly Net Income: $2784.90		
Expenses	Cost	Percentage of Net Income
Housing:	$900	32%
Food:	$450	16%
Utilities:	$174	6%
Savings:	$250	9%
Transportation:	$530	19%
Other:	$480	17%
Total Expenses:	$2784	99%

a. Does Barney spend more than he makes? Explain. **No. Barney's monthly net income is $2784.90 and his expenses are also $2784.00.**

b. What percent of Barney's monthly net income is housing? **32%**

c. What percent of Barney's monthly net income is transportation? **19%**

d. Why is the medical insurance premium not included in this budget? **In Barney's case, it is listed as a deduction. This means that it is paid before calculating his net income.**

e. What is the total of Barney's taxes for one month? **2($289.90 + $119.66 + $27.99) = $875.10**

f. What percent of Barney's monthly gross pay are taxes? **$875.10÷ $3860 = 23%**

g. Why did Barney not include a category for taxes in his budget? **The taxes were not part of his net income.**

Activity 7.2-2 Name _____ Class Period _____

Barney's girlfriend, Betty, is still in college. She is determined not to get a loan to pay for tuition and books. Therefore she lives at home and works part-time. She knows that if she can save $300 every month, she will have enough money to pay for next semester's college tuition and books. Every month Betty spends more money than she makes. Her father has been giving her money when she overspends. He has explained that he will no longer bail her out.

Barney has agreed to help Betty balance her budget. First, he asked her to gather all of her receipts for the month of August and enter the cost in the budget worksheet below.

	Monthly Budget Worksheet Monthly Net Income: $850.00		
Fixed or Variable?	**August Expenses**	**Actual Expenditures**	**Monthly Budget**
	Rent to her parents:	$50	
	Food:	$250	
	Cell phone:	$90	
	Savings:	$300	
	Transportation: ($1 round trip each school day)	$20	
	Manicure:	$40	
	Beauty Shop:	$50	
	Entertainment:	$75	
	Clothes:	$75	
	Morning coffee at The Coffee Place:	$85	
	Total Expenses:		

a. How much does Betty have available to spend each month? _____

b. How much did Betty spend in August? _____

c. How much does Betty need to cut back each month? _____

d. **Fixed expenses** are those expenses that remain the same each month. Give two examples of expenses that are fixed. _____

e. **Variable expenses** are those expenses that vary from month to month. Give two examples of expenses that vary from month to month. _____

f. Since Betty will need to make adjustments to her budget, Barney will have her identify in column 1 if the item is a fixed expense or a variable expense. In column 1, write "F" for fixed expense and "V" for variable expense.

g. Which type of the expenses can be adjusted? _____

h. Since the fixed expenses cannot be adjusted, transfer these cost to column 4.

i. Decide which variable expenses can be reduced. Then adjust Betty's expenses in column 4 so that the net income = expenses. This is Betty's new budget!

j. Which expenses did you decide to adjust and explain why you made these choices? Use the space below to explain.

Key 7.2-2 Name _____ Class Period _____

Barney's girlfriend, Betty, is still in college. She is determined not to get a loan to pay for tuition and books. Therefore she lives at home and works part-time. She knows that if she can save $300 every month, she will have enough money to pay for next semester's college tuition and books. Every month Betty spends more money than she makes. Her father has been giving her money when she overspends. He has explained that he will no longer bail her out.

Barney has agreed to help Betty balance her budget. First, he asked her to gather all of her receipts for the month of August and enter the cost in the budget worksheet below.

	Monthly Budget Worksheet Net Income: $850.00		
Fixed or Variable?	**August Expenses**	**Actual Expenditures**	**Sample Monthly Budget**
F	Rent to her parents:	$50	$50
V	Food:	$250	$150
*	Cell phone:	$90	$90
F**	Savings:	$300	$300
*	Transportation: ($1 round trip each school day)	$20	$20
V	Manicure:	$40	$0
V	Beauty Shop:	$50	$30
V	Entertainment:	$75	$75
V	Clothes:	$75	$75
V	Morning coffee at The Coffee Place:	$85	$10
	Total Expenses:	$1035	$850

These items could be variable expenses or fixed expenses. Require students to provide a justification for their selection.

****In Betty's case, she has specified that she will save $300 per month. Therefore, this will be a fixed expense.***

a. How much does Betty have available to spend each month? **$850**

b. How much did Betty spend in August? **$1035**

c. How much does Betty need to cut back each month? **$185**

d. **Fixed expenses** are those expenses that remain the same each month. Give two examples of expenses that are fixed. **Sample: rent, car payment, cell phone**

e. **Variable expenses** are those expenses that vary from month to month. Give two examples of expenses that vary from month to month. **Sample: food, utilities, entertainment, clothes**

f. Since Betty will need to make adjustments to her budget, Barney will have her identify in column 1 if the item is a fixed expense or a variable expense. In column 1, write "F" for fixed expense and "V" for variable expense. **See table for sample answers.**

g. Which type of the expenses can be adjusted? **Variable expenses**

h. Since the fixed expenses cannot be adjusted, transfer these costs to column 4. **See table.**

i. Decide which variable expenses can be reduced. Then adjust the Betty's expenses in column 4 so that the net income = expenses. This is Betty's new budget! **See table for sample.**

j. Which expenses did you decide to adjust and explain why you made these choices? Use the space below to explain. **Sample response: Food has been reduced by $100. Betty should take her lunch to school and eat out less. The manicure has been deleted. Betty can fix her own nails. The beauty shop has been reduced to $30. Betty can find a more affordable place to cut her hair. Coffee expense has been reduced to $10. Betty can make coffee at home.**

Activity 7.2-3 Name _____ Class Period _____

Texas Reality Check

Now it is time for you to take a reality check. Have you thought about your future? What will your budget look like? What type of an occupation do you need to afford this budget? The following simulation will help you make these decisions.

1. Go to the following website: http://www.texasrealitycheck.com
2. Choose **1 Reality Check** by clicking on the red arrow.
3. Choose the city where you would like to live then choose your expenses.
4. Once you have completed the first phase, Texas Reality Check will create your budget. Fill in your Texas Reality Check budget below.

Your Monthly Expenses	City:
Housing	
Utilities	
Food	
Transportation	
Clothes	
Health Care	
Personal	
Entertainment	
Misc	
Savings	
Student Debt Loan	
Monthly Expenses	
Annual Expenses	
Taxes (25% of Annual Expenses)	
Annual Salary Needed	

5. What occupation will give you the annual salary you need? Follow the **Find Careers** by clicking on the blue arrow to get information about what occupations will pay the annual salary you need.

Occupation: _____Annual Salary: _____

What type of training is required for this occupation? _____

Use the space below to write important information about this occupation.

Lesson Description

Students will learn how to use an online family budget estimator to determine the minimum household budget and average hourly wage needed for a family to meet its basic needs in the student's city or another large city nearby. Students will review categories for family budgets and categorize them as negotiable or non-negotiable. Using a Think-Pair-Share activity, students will consider how family circumstances and outside influences may affect the budget amount for each category. Finally, the students will use an online family budget estimator, to compare the cost of living in different metro areas.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 7.13D:** use a family budget estimator to determine the minimum household budget and average hourly wage needed for a family to meet its basic needs in the student's city or another large city nearby

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 7.1:** Mathematical Process Standards

National Standards (Supporting standards)

- **CEE Buying Goods and Services 8.5:** A budget includes fixed and variable expenses, as well as income, saving, and taxes.
- **CEE Buying Goods and Services 8.6:** People may revise their budget based on unplanned expenses and changes in income.
- **CCSS Math:** Standards for Mathematical Practices

CEE - Council for Economic Education

CCSS - Common Core State Standards

PFL Terms

- Budget
- Expenses
- Savings

Time Required

One 45-minute class period

Materials Required

- A copy of **Activity 7.3-1** for each student
- A copy of **Activity 7.3-2** for each student
- A computer and Internet connection for each student
- A soft ball (or rolled up piece of paper)

Procedure

Engage

1. Ask students: *What is a budget?* ***(A budget is a tool that helps people manage their money and plan for the future.)*** *What are the benefits of setting and sticking to a budget?* ***(By setting and sticking to a budget, you can better manage your cash flow.)***

2. Instruct students to complete a Chalkboard Splash by recording categories for family budgets on the chalkboard. (In a Chalkboard Splash, all students record their responses onto a chalkboard or whiteboard. After recording their responses, students are asked to analyze peer responses for three things: similarities, differences and surprises.) Provide the class with 5 – 10 writing utensils for the board (chalk or markers) and give the class 5 minutes to brainstorm categories that may appear within a family's budget. As they are able to provide additional ideas to the brainstorm, students are allowed to take a writing utensil, contribute to the Chalkboard Splash, and then return the writing utensil for other students to use. Possible categories include: Housing, Food, Transportation, Savings, and Entertainment.

3. Debrief by asking students to look at the board and identify similarities amongst the responses. Then, ask for volunteers to identify the categories most important for survival.

Explore/Explain

4. Ask students: *When considering a family's basic needs, what categories of expenditures within a budget are non-negotiable? Consider the categories from the Engage activity, sorting them as negotiable and non-negotiable.* ***(Non-negotiable budget categories include: Housing, Food, Child Care, Medical, Transportation, Taxes)*** During the discussion, you may have to guide students to discern resources essential for survival as opposed to essential for a job. Help them answer the question, is there an alternative that yields the same result, but at a lower price? For example, if all necessary places to travel (food store, job, etc.) are within the means of public transportation, then a bus pass would be more economical than purchasing a car. Some resources are explicitly dependent upon the situation. For example, if you work at home and communicate with your employer via the World Wide Web, then it is essential for your job to have Internet access at home. However, it is not essential for survival for you to have Internet access at home, since you could possibly pursue another job that does not require working from home.

5. Pose the following question and have the students complete a Think-Pair-Share: *What influences may cause variations in the budget amounts for each of these non-negotiable categories? That is, why might some families budget more or less for housing or food, for example, than another family?* Instruct students to spend about 3 minutes thinking independently of reasons the budget amounts may vary. Then, students work with a partner for about 3 minutes to compile their lists of ideas. Finally, the class shares thoughts about influences that may cause variations in the budget amounts for the previously identified non-negotiable categories. ***(Location, Number of working adults, Number of children, Age of children, Healthcare necessities, Type of transportation)***

Elaborate

6. Distribute **Activity 7.3-1** to each student. Display **Activity 7.3-1** as a visual.

7. Tell students to use the map to identify the city in which they live (or another nearby city) listed as one of the 26 Texas metro areas. Next, select another metro area, to be used for comparison. Then, select from the categories listed on the activity sheet to create a scenario to use on the following activities. This information can be used to determine the minimum household budget and average hourly wage to make ends meet in a given metro area.

8. Discuss health insurance premiums by telling students that insurance companies charge consumers premiums to participate in their coverage. That is, consumers pay health insurance companies a certain amount of money each month just in case they, or their doctors, have to file for reimbursement for a medical procedure. The premiums ensure they have coverage and won't have to pay the full amount out of pocket charged by doctors. Ask students what would happen if they had a medical emergency and had not been paying health insurance premiums? ***(Without health insurance, the family would have to pay the full amount to the doctor or hospital. This may possibly deplete their emergency savings or even put the family into debt.)***

9. Instruct the students to go to The Center for Public Policy Priorities, Family Budgets website: http://www.familybudgets.org.

10. Tell students to use the scenario they created on **Activity 7.3-1** and the Texas metro area that best describes their city to determine the minimum household budget and average hourly wage needed for a family to meet its basic needs.

11. Distribute **Activity 7.3-2** to each student. Display **Activity 7.3-2** as a visual.

12. Tell students: *Record the information for your city or metro area in the space labeled Texas metro area #1, including a circle graph, illustrating the details of the monthly budget.*

13. Tell students: *Now, go to The Center for Public Policy Priorities, Family Budgets website: http://www.familybudgets.org again and use the same scenario you created on **Activity 7.3-1**, with a different Texas metro area.*

14. Tell students: *Record the information for this second city or metro area in the space labeled Texas metro area #2, including a circle graph, illustrating the details of the monthly budget.*

Evaluate

15. Take students to an area with space for a ball toss. Use a soft ball (or rolled up ball of paper) for a ball toss discussion about the Texas metro areas selected by the students and the differences in the hourly wage needed to get by and the specifics of the family budgets. Toss the ball to the first student and ask him/her to report the name of the city or metro area chosen, one surprising piece of information discovered, and why the student feels the values generated were higher or lower than their own city or metro area. Allow this student to toss the ball to another student for more input into the discussion and repeat until everyone has shared. ***(Sample responses: access to public transportation allows for a lesser transportation budget)*** For the next toss, ask how this information help a family? ***(Sample responses: The family can determine how much***

money they will need to provide the basic needs for their family. The family can determine which metro area is the most affordable.)

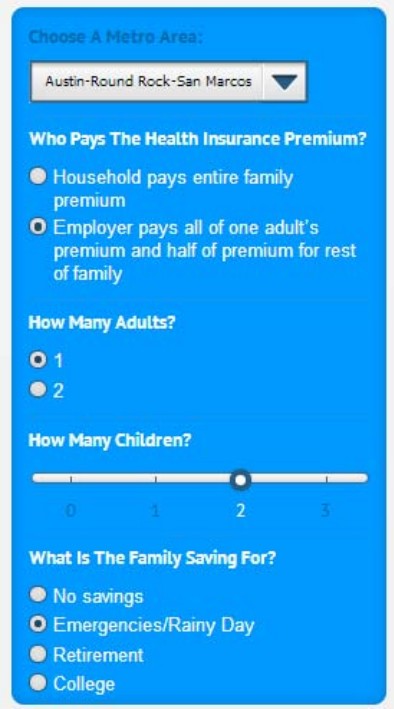
Elaborate

16. Have students return to their computer. Tell them that their good friend has come to them for advice. Read the following.

    Your friend is a single mother of two. She knows that she should have an emergency savings but with her current income, she is barely able to provide the basic needs for her family. Therefore, she has been applying for other jobs. She finally received a job offer for $38,000. The company has offered her a position in one of three cities across Texas. The cities are Austin, Corpus Christi, and Victoria. Regardless of which city she chooses, the company will pay her medical insurance premium and part of her children's premiums. She has a choice of living and working in Austin, Corpus Christi, or Victoria. What advice will you give your friend?

17. Instruct students to list all the factors this friend should consider before choosing a city. After the students have created a list, have them share their list with a partner. Tell them to make any changes necessary on their list. Have students share their advice. The teacher should make a list on the board. ***(Sample responses: How far will she be from her family and friends? What will be the working conditions? What will be the cost of moving? How much does it cost to live in that city?)***

18. Explain that most of these considerations are unknown based on the reading. However, the Family Budget Estimator can be used to determine the cost of living for the three cities. Instruct students to enter the information found in the reading for each of the three cities. With a partner have them determine which of the three cities will provide their friend the most for her money. ***(Victoria requires the least of the three cities to live for the friend's situation. The Necessary Annual Income for each city: Victoria - $30,528, Corpus Christi $35,340, and Austin $42,420)*** See the entry for the Family Budget Estimator on the following page.



Source: Center For Public Policy Priorities Family Budget Estimator, http://www.familybudgets.org/

Evaluate/End

19. Ask students to determine what necessary decisions may be guided with an online family budget estimator. ***(Sample responses: The family budget estimator will allow families to evaluate the cost of living for different metro areas.)*** When looking for a job after graduation from college or vocational school, what do they need to consider and how can this tool help? ***(Sample response: If the location they choose to live is contingent upon their career choice, the cost of living in the location they choose to live.)***

Activity 7.3-1 Name _____ Class Period _____

Directions: Use the map below to identify the city in which we live (or another nearby city) listed as one of the 26 Texas metro areas. Then, select any other metro area, to be used for comparison.

Now, select from these categories to create a scenario to use on the following activities. This information can be used to determine the minimum household budget and average hourly wage to make ends meet in a given metro area.

1. Who pays the health insurance premium?
   - ☐ Household pays the entire family premium.
   - ☐ Employer pays all of one adult's premium and half of premium for rest of family.
2. How many adults are working full-time?
   - ☐ 1
   - ☐ 2
3. How many children live in the household? (0 – 3) ____
4. What is the family saving for? (You may select more than one)
   - ☐ No savings
   - ☐ Emergencies/Rainy Day
   - ☐ Retirement
   - ☐ College

Texas Metro Areas:

- ☐ Amarillo
- ☐ Austin-Round Rock – San Marcos
- ☐ Beaumont – Port Arthur
- ☐ Brownsville – Harlingen
- ☐ Bryan – College Station
- ☐ Corpus Christi
- ☐ Dallas – FW – Arlington
- ☐ Dallas – Plano – Irving
- ☐ El Paso
- ☐ Fort Worth – Arlington
- ☐ Houston – Sugar Land – Baytown
- ☐ Killeen – Temple – Fort Hood
- ☐ Laredo
- ☐ Longview
- ☐ Lubbock
- ☐ McAllen – Edinburg – Mission
- ☐ Midland
- ☐ Odessa
- ☐ San Angelo
- ☐ San Antonio – New Braunfels
- ☐ Sherman – Denison
- ☐ Texarkana
- ☐ Tyler
- ☐ Victoria
- ☐ Waco
- ☐ Wichita Falls

Key 7.3-1 Name _____ Class Period _____

This is a sample key. Responses will vary.

Now, select from these categories to create a scenario to use on the following activities. This information can be used to determine the minimum household budget and average hourly wage to make ends meet in a given metro area.

1. Who pays the health insurance premium?
   - ☐ Household pays the entire family premium.
   - ☒ Employer pays all of one adult's premium and half of premium for rest of family.
2. How many adults are working full-time?
   - ☐ 1
   - ☒ 2
3. How many children live in the household? (0 – 3) _2__
4. What is the family saving for? (You may select more than one)
   - ☐ No savings
   - ☒ Emergencies/Rainy Day
   - ☒ Retirement
   - ☒ College

Texas Metro Areas:

- ☐ Amarillo
- ☐ Austin-Round Rock – San Marcos
- ☐ Beaumont – Port Arthur
- ☐ Brownsville – Harlingen
- ☐ Bryan – College Station
- ☒ Corpus Christi
- ☐ Dallas – FW – Arlington
- ☐ Dallas – Plano – Irving
- ☐ El Paso
- ☐ Fort Worth – Arlington
- ☒ Houston – Sugar Land – Baytown
- ☐ Killeen – Temple – Fort Hood
- ☐ Laredo
- ☐ Longview
- ☐ Lubbock
- ☐ McAllen – Edinburg – Mission
- ☐ Midland
- ☐ Odessa
- ☐ San Angelo
- ☐ San Antonio – New Braunfels
- ☐ Sherman – Denison
- ☐ Texarkana
- ☐ Tyler
- ☐ Victoria
- ☐ Waco
- ☐ Wichita Falls

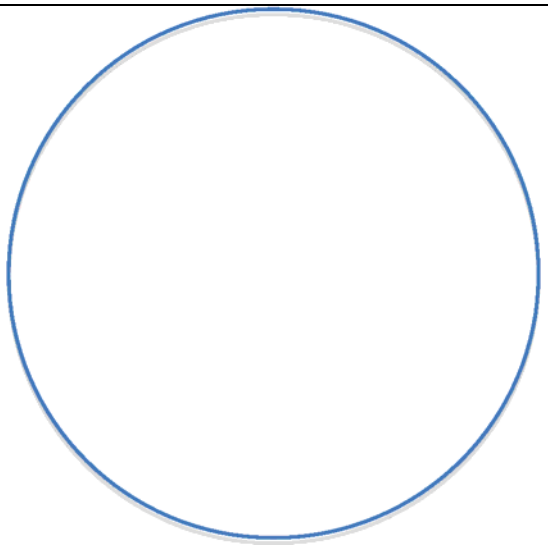
Activity 7.3-2 Name _____ Class Period _____

Directions: Use The Center for Public Policy Priorities, Family Budgets website: http://www.familybudgets.org to determine the minimum household budget and average hourly wage needed for a family to meet its basic needs in two Texas metro areas. Then, record the information for each metro area in the space below, including a circle graph, illustrating the details of the monthly budget.

Texas Metro Area #1: _____

Hourly wage needed to get by: _____

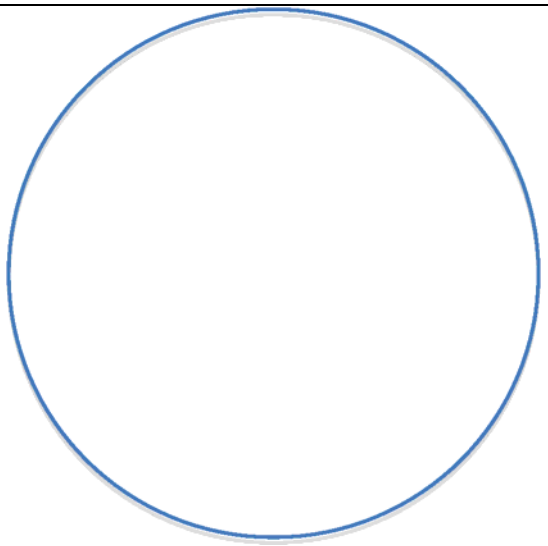
Family Bottom Line for the Month (Total Monthly Income Needed To Cover Expenses): _____



Texas Metro Area #2: _____

Hourly wage needed to get by: _____

Family Bottom Line for the Month (Total Monthly Income Needed To Cover Expenses): _____



For which metro area is the minimum household budget the least?

How can this information help a family?

Key 7.3-2 Name _____ Class Period _____

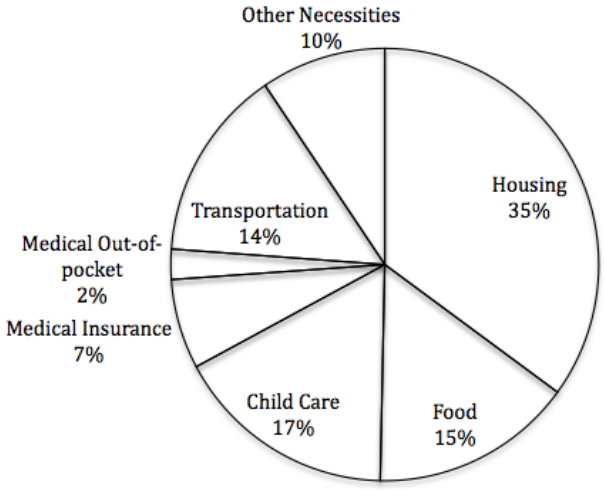
This is a sample key. Responses will vary depending upon scenarios used.

Texas Metro Area #1: Corpus Christi

Hourly wage needed to get by: $14.54

Family Bottom Line for the Month (Total Monthly Income Needed To Cover Expenses): $2424

Where does the money go?

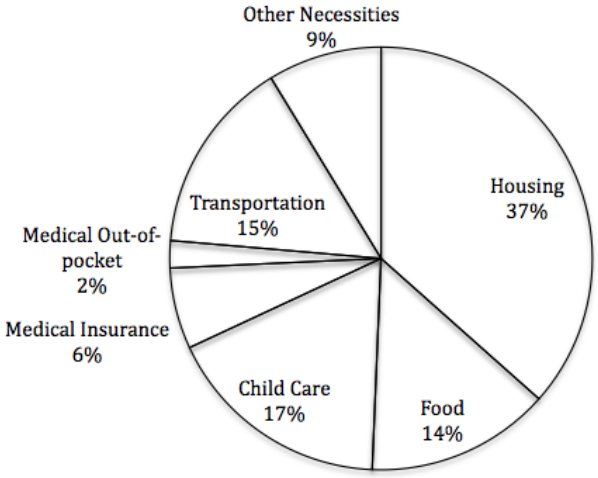


Texas Metro Area #2: Houston – Sugar Land – Baytown

Hourly wage needed to get by: $16.40

Family Bottom Line for the Month (Total Monthly Income Needed To Cover Expenses):$2734

Where does the money go?



For which metro area is the minimum household budget the least? *Answers will vary.*

How can this information help a family? *Sample responses: The family can determine how much money they will need to provide the basic needs for their family. The family can determine which metro area is the most affordable.*

Lesson Description

Students will analyze families' finances to identify assets and liabilities. They will use this information to calculate the families' net worth and learn the benefits of having a positive net worth. Students will work with other students to devise a plan to increase the families' net worth.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 7.13C:** create and organize a financial assets and liabilities record and construct a net worth statement

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 7.1:** Mathematical Process Standards
- **Math 7.3A:** add, subtract, multiply, and divide rational numbers fluently
- **Math 7.3B:** apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers

National Standards (Supporting standards)

CEE - Council for Economic Education

CCSS - Common Core State Standards

- **CEE Using Credit 8.5:** Various financial institutions and businesses make consumer loans and may charge different rates of interest.
- **CCSS Math:** Standards for Mathematical Practices
- **CCSS Math 7.NS:** Apply properties of operations as strategies to add and subtract rational numbers
- **CCSS Math 7.NS:** Solve real-world and mathematical problems involving the four operations with rational numbers

PFL Terms

- Assets
- Liability
- Net worth

Time Required

Two 45-minute class periods

Materials Required

- A copy of **Visual 7.4-1a** and **7.4-1b**
- A copy of **Activity 7.4-1a** for each student
- A copy of **Activity 7.4-1b** for each group, print on blue paper and cut cards in advance
- A copy of **Activity 7.4-1c** for each group, print on yellow paper and cut cards in advance
- A copy of **Activity 7.4-2a** for each student
- A copy of **Activity 7.4-2b** for half of the students
- A copy of **Activity 7.4-2c** for half of the students

Procedure

Engage

1. Brainstorm with students about what it means for a family to be wealthy. ***(Samples: large savings balance, expensive house, expensive cars, large investments balances, expensive vacations, owning expensive items)***

Explore

2. Display **Visual 7.4-1a**. Tell students that this visual shows what family A and family B own. Then read the family descriptions below.

   - Family A owns a 3 bedroom house valued at $100,000 and one car. The home is furnished with modest furniture. The only valuable jewelry they own are wedding bands valued just under $800. They have an emergency savings account, a college savings account and a retirement savings. They also have two credit cards.
   - Family B owns a 5 bedroom house valued at $400,000, a car, and a SUV. The house is furnished with luxurious furniture. They also own a valuable piece of art and expensive jewelry. The family has a retirement savings and 6 credit cards.

3. Have the students vote on which family they believe to be worth more (wealthier). Post the results on the board.

Explain

4. Lead a class discussion about net worth. Tell students that net worth is similar to wealth. It represents the value of what you own minus what you owe. Use the questions below to lead the discussion.

   a. *Does it make you rich or wealthy to have a lot of things that cost a large amount? Why or why not?* ***(Accept all responses.)***

   b. How do most people purchase expensive goods such as a house or car? ***(Most people will pay a small part in cash and get a loan for the remaining balance. A few people may be able to buy with cash.)***

   c. What does it mean to have debt? ***(Debt is the money you owe. If you borrow $1000, your debt is $1000. To get a loan is to borrow money.)***

   d. *Is there something missing from* ***Visual 7.3.1a****? If we want to determine how much these families are worth, what are some other things we need to consider?* Allow students to brainstorm with a partner before accepting any answers. (***We don't know how much each family owes on each item they own. We don't know how much money they have in their savings. We don't know how much they owe on their credit card (credit card debt). We don't know the value of the cars or how much they owe.)***

Explore

5. Place students in groups of 3 – 4. Distribute a set of blue cards and yellow cards to each group. Distribute **Activity 7.4-1a** to each student.

6. Display **Visual 7.4-1b**. Explain that assets are the things you own. Ask students to give an example of something Family A owns. ***(house, car, savings account, furniture)*** Liabilities are things you owe. Ask students to give an example of what Family A might owe. ***(They***

may owe on their house. This is called a mortgage. They might owe money on their car or credit cards.) Explain that monthly expenses such as utilities, cell phone service, groceries are not included as a liability. Liabilities are only what are owed to a bank, credit union, or financial company. Net worth is the value of your assets minus your liabilities.

7. Instruct students that the blue cards show the assets and liabilities for Family A. Remember that assets are what a family owns. Liabilities are what a family owes. Using the Net Worth Worksheet on **Activity 7.4-1a**, record Family A's assets and liabilities in the appropriate column. Then total each column. Finally use the net worth formula to calculate the family's net worth. Then use the yellow cards to calculate Family B's net worth.

Explain

8. After students have completed activity, ask students to share their results and their answers to the questions on the bottom of **Activity 7.4-1a**.

   - Which items did not count as an asset or a liability? Why? ***(Gym membership and child care. These are not payments to financial institutions. You cannot own a service.)***
   - Which family has the greatest net worth? ***(Family A)***
   - Imagine that you worked for a bank. If both of the families requested a $10,000 loan, which family do you think best qualifies for the loan? Explain. ***(Since Family A has a greater net worth, they would best qualify for the loan. Family B has a large debt and may struggle paying for the loan.)***

9. Explain that financial institutions often require for their customers to report their net worth when applying for large loans. It is used to evaluate the customers overall financial standing. If the customer has a positive net worth, he or she is more likely to get the loan and pay a lower loan rate.

   a) *What would cause a person to have a negative net worth*? ***(when liabilities greater than assets)***

   b) *What would cause a family to have a positive net worth?* ***(when assets greater than liabilities)***

   c) *Why is it important to have a positive net worth?* ***(easier to get a loan and lower interest rates)***

   d) Other than net worth, what other criteria might a financial institution consider before lending money? ***(Financial institutions want to know your credit history. Such as how much you owe in debt and are you making regular payments. You need a history that shows you are financially responsible.)***

   e) Will net worth affect someone's credit score? ***(Yes. A large debt reduces your credit score.)***

f) *Many people try to reach the American Dream by purchasing everything they want. What are the consequences for buying everything you want?* ***(You may not have emergency funds, savings for retirement, or college savings. If you lose your job, you won't have the means to pay back the loan(s).)***

Elaborate

10. Prepare students to do a Chalkboard Splash. For a Chalkboard Splash, the teacher poses a question to the class. Then the students write ideas on the board randomly. Students will then categorize the responses. Pose this question to class: *What could Family B do to increase their net worth?* (***Sample responses include: sell the car and purchase a lower cost model, pay down/off their credit card debt or other liabilities, sell the house and purchase a less expense home, spend less on monthly expenses, get a second job or change to a higher paying job, sell artwork to a collector)*** Once students have contributed to the Chalkboard Splash, ask students to analyze the ideas on the board and identify two possible categories for the ideas (increase income and decrease debt). Go through each item and have students identify if the item is increasing income (II) or decreasing debt (DD). To close, explain to students that it is important for families or individuals to regularly check their net worth. This will help them determine if they are spending too much and/or if there is enough savings for the future or emergencies.

11. Distribute **Activity 7.4-2a** to each student. Group students into pairs. Give each pair either **Activity 7.4-2b** or **Activity 7.4-2c**. Instruct pairs to complete the net worth worksheet for their assigned family.

12. When students have completed the net worth worksheet for their family, direct them to find another pair with the same family. Tell them to discuss and compare their results with the other pair. If they have any discrepancies, they should each present their case to the teacher. The teacher should clarify any misunderstandings.

Evaluate/End

13. To close this activity, pose the questions below to the students.

    a. *How many of you had a family that had a positive net worth****? (Half of the students should raise their hand.)*** *What caused your family to have a positive net worth?* ***(The assets were greater than the liabilities.)***

    b. *How many of you had a family that had a negative net worth****? (Half of the students should raise their hand.)*** *What caused your family to have a negative net worth?* ***(The liabilities were greater than the assets.)***

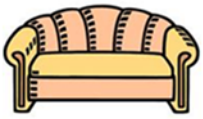
    c. *Did your family report an item that was not an asset or liability?* ***(cost of child care, tuition, cost of utilities)*** *Why did these items not classify as an asset or liability?* ***(The payment does not go to a financial institution. You cannot own these services.)***

14. Assign the students to write a letter explaining how assets and liabilities are used to create a net worth statement. Include the reason why a family should know their net worth and steps a family could take to change their net worth value.

Extension

1. Students may create a video for a Public Service Announcement to explain to adults how to determine their net worth Statement and its importance.

Visual 7.4-1

Family A – 2 adults and 2 children	Family B – 2 adults and 2 children
	
	
	
	
	
	

Activity 7.4-1a Name _____ Class Period _____

	Net Worth Worksheet			
	Family A		Family B	
	Assets	Liabilities	Assets	Liabilities
House				
Autos				
Furniture				
Credit cards				
Bank accounts				
Retirement accounts				
Cash				
Loans				
Value of Jewelry and art				
TOTAL				

Family A: _____ – _____ = _____
Total Assets Total Liabilities Net Worth

Family B: _____ – _____ = _____
Total Assets Total Liabilities Net Worth

1. Which items did not count as an asset or a liability? Why? _____
   _____
2. Which family has the greatest net worth? _____
3. Imagine that you worked for a bank. If both of the families requested a $10,000 loan, which family do you think best qualifies for the loan? Explain. _____
   _____

Key 7.4-1a Name _____ Class Period _____

	Net Worth Worksheet			
	Family A		Family B	
	Assets	Liabilities	Assets	Liabilities
House	$100,000	$18,000	$400,000	$350,000
Autos	$22,000	$0	$79,000	$37,000
Furniture	$25,000	$450	$100,000	$43,000
Credit cards		$59		$18,575
Bank accounts	$20,000		$1,500	
Retirement accounts	$47,000		$47,000	
Cash	$50		$300	
Value of jewelry and art	$775	$0	$10,000	$0
TOTAL	$214,825	$18,509	$637,800	$448,575

Family A: $214,825 (Total Assets) – $18,509 (Total Liabilities) = $196,316 (Net Worth)

Family B: $637,800 (Total Assets) – $448,575 (Total Liabilities) = $189,225 (Net Worth)

1. Which items did not count as an asset or a liability? Why? **Gym membership and child care. These are not payments to financial institutions. You cannot own a service.**

2. Which family has the greatest net worth? **Family A**

3. Imagine that you worked for a bank. If both of the families requested a $10,000 loan, which family do you think best qualifies for the loan? Explain. **Since Family A has a greater net worth, they would best qualify for the loan. Family B has a large debt and may struggle paying for the loan.**

Activity 7.4-1b

Blue cards

Family A • Own a $100,000 house • Owe $18,000 on mortgage	Family A • Own a car valued at $22,000 • Car is paid off.	Family A • Own $25,000 worth of furniture • Owe $450 on furniture loan
Family A • Own jewelry valued at $775 • Jewelry is paid off	Family A • $15,000 in emergency savings account at bank	Family A • $4,500 in college savings account at bank
Family A • $47,000 in retirement account	Family A • Owe $59 on credit card 1	Family A • Owe $0 on credit card 2
Family A • $500 in checking account at bank	Family A • $50 cash	Family A • Pays $500 a month for child care

Activity 7.4-1c

Yellow cards

Family B • Own a $400,000 house • Owe $350,000 on mortgage	Family B • Own a car valued at $35,000 • Owe $22,000 on auto loan	Family B • Own a SUV valued at $44,000 • Owe $15,000 on auto loan
Family B • Owns $100,000 on furniture • Owes $43,000 on furniture loan	Family B • Owns $10,000 in jewelry and art work • Owes $0	Family B • $47,000 in Retirement account
Family B • Owe $5200 on credit card 1	Family B • Owe $3,555 on credit card 2	Family B • Owe $2,000 on credit card 3
Family B • Owe $120 on credit card 4	Family B • Owe $7,500 on credit card 5	Family B • Owe $200 on credit card 6
Family B • $1,500 in checking account at bank	Family B • $300 in cash	Family B • Pays $75 monthly fee for gym membership

Visual 7.4-1b

Vocabulary

Assets

the things you own: cash, bank accounts, investments, house

Liabilities

the things you owe: mortgage, car loan, credit card balances

Net Worth

The value of your assets minus your liabilities
Net Worth = Assets - Liabilities

Activity 7.4-2a Name _____ Class Period _____

Finding the Net Worth

Directions: Your teacher will assign you a family. Use the information provided to you on this family to determine the assets, liabilities and calculate the net worth.

Net Worth Worksheet for _____			
Assets (Own)		**Liabilities (Owe)**	
Balance of all bank accounts		Home mortgage	
Balance of all retirement accounts		Auto loan(s)	
Cash		Credit card(s)	
Value of home		Student loan(s)	
Value of auto(s)		Other loan(s)	
Value of furniture and household items		***Total Liabilities***	
Value of jewelry, art, antiques, etc.			
Total Assets			

Net Worth = _____

1. Which items did not count as an asset or a liability? _____
2. Does this family have a positive or negative net worth? _____
3. Determine three suggestions for this family to increase their net worth?

   _____

Activity 7.4-2b Name _____ Class Period _____

Family 1

The family has two adults and two young children. Both parents work full time jobs; one child is in day care all day and the other child in first grade and in after-school care. They own a house and two cars and carry some credit card debt.

Complete the Net Worth Worksheet for this family. Remember that not all monthly expenses are liabilities.

1. The house is valued at $95,000 with a mortgage balance of $45,000.
2. First car is worth $12,000 and they owe $5,000 on the auto loan.
3. Second car is worth $10,000 which is paid in full.
4. Child care costs are $600 per month.
5. Retirement accounts are valued at $15,000.
6. Balance on the credit cards total $2,000.
7. Checking account has a balance of $500.
8. Savings account has a balance of $1200.
9. They have $75 in cash.
10. The value of their furniture is approximately $4500 which is paid in full.
11. The miscellaneous household items are valued at $1200 which is paid in full.
12. Ms. Perez's jewelry is valued at $900; these were paid with the credit card.

Activity 7.4-2c Name _____ Class Period _____

Family 2

The family has one working parent, a stay-at-home parent and three children. Two of the children are in elementary school and the youngest child is in Pre-Kindergarten. They have a house and a car and a mini-van and carry some credit card debt.

Complete the Net Worth Worksheet for this family. Remember that not all monthly expenses are liabilities.

1. The house is valued at $89,000 with a mortgage balance of $80,000.
2. The car is worth $15,000 and they owe $15,000 on the auto loan.
3. The mini-van is worth $20,000 and they owe $16,000 on the auto loan.
4. They financed new household furnishings valued at $5,000 and they owe $4500 on the loan.
5. They have $15,000 in their retirement account.
6. They have $1,500 in an emergency savings, $1,000 in savings, $500 in checking, and $1500 in a CD.
7. They have $200 in cash.
8. Balances on the credit cards total $15,000.
9. The family pays $500 per month for school loans; the current balance is $25,000.
10. The family pays $350 per month for Pre-Kindergarten tuition.
11. All of the children are on soccer teams which costs $100 per month.

Key 7.4-2b Name _____ Class Period _____

Finding the Net Worth

Directions: Your teacher will assign you a family. Use the information provided to you on this family to determine the assets, liabilities and calculate the net worth.

Net Worth Worksheet for Family 1

Assets (Own)		Liabilities (Owe)	
Balance of all bank accounts	**1,700**	Home mortgage	**45,000**
Balance of all retirement accounts	**15,000**	Auto loan(s)	**5,000**
Cash	**75**	Credit card(s)	**2,000**
Value of home	**95,000**	Student loan(s)	**0**
Value of auto(s)	**22,000**	Other loan(s)	
Value of furniture and household items	**5,700**	***Total Liabilities***	**$52,000**
Value of jewelry, art, antiques, etc.	**900**		
Total Assets	**$140,375**		

Net Worth = **$88,375**

1. Which items did not count as an asset or a liability? **Cost of child care**
2. Does this family have a positive or negative net worth? **Positive**
3. Determine three suggestions for this family to increase their net worth? **Sample responses: pay off credit cards, pay off auto loan, increase savings**

Key 7.4-2c Name _____ Class Period _____

Finding the Net Worth

Directions: Your teacher will assign you a family. Use the information provided to you on this family to determine the assets, liabilities and calculate the net worth.

Net Worth Worksheet for Family 2

Assets (Own)		Liabilities (Owe)	
Balance of all bank accounts	**4,500**	Home mortgage	**80,000**
Balance of all retirement accounts	**15,000**	Auto loan(s)	**31,000**
Cash	**200**	Credit card(s)	**15,000**
Value of home	**89,000**	Student loan(s)	**25,000**
Value of auto(s)	**35,000**	Other loan(s)	**4,500**
Value of furniture and household items	**5,000**	***Total Liabilities***	**$155,500**
Value of jewelry, art, antiques, etc.			
Total Assets	**$148,700**		

Net Worth = **-$6,800**

1. Which items did not count as an asset or a liability? **Tuition and utilities**
2. Does this family have a positive or negative net worth? **Negative net worth**
3. Determine three suggestions for this family to increase their net worth? **Sample responses: pay off credit card balances, pay off car loans, pay off student loan, increase savings**

Lesson Description

This lesson focuses on comparing simple interest and compound interest. Students discover the differences between simple and compound interest by creating a 5-year chart using both methods. An Interactive Booklet is used to help understand vocabulary. Students complete a chart for simple and compound interest and calculate the total interest earned for each method. The charts are glued into the Interactive Booklet as examples.

Students are divided into 6 groups in which each group will be given a unique scenario with different amounts for the principal. The groups calculate earnings from simple and compound interest over a 5-year period. Groups transfer this information onto chart paper and participate in a Gallery Walk to compare their results with results of the other groups.

Texas Essential Knowledge and Skills (Target standards)

PFL Math 7.13E calculate and compare simple interest and compound interest earnings

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 7.1:** Mathematical Process Standards
- **Math 7.3A:** add, subtract, multiply, and divide rational numbers fluently
- **Math 7.3B:** apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers
- **Math 7.4D:** solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems

National Standards (Supporting standards)

CEE - Council for Economic Education

CCSS - Common Core State Standards

- **CEE Savings 8.5:** Principal is the initial amount of money upon which interest is paid.
- **CEE Savings 8.6:** Compound interest is the interest that is earned not only on the principal but also on the interest already earned.
- **CEE Savings 8.7:** The value of a person's savings in the future is determined by the amount saved and the interest rate. The earlier people begin to save, the more savings they will be able to accumulate, all other things equal, as a result of the power of compound interest.

- **CCSS Math:** Standards for Mathematical Practices
- **CCSS Math 7.RP:** Use proportional relationships to solve percent problems
- **CCSS Math 7.NS:** Apply properties of operations as strategies to add and subtract rational numbers
- **CCSS Math 7.NS:** Apply properties of operations as strategies to multiply and divide rational numbers
- **CCSS Math 7.NS:** Solve real-world and mathematical problems involving the four operations with rational numbers

PFL Terms

- Principal
- Interest
- Rate of interest
- Compound interest
- Simple interest

Time Required

Two 45-minute class period

Materials Required

- A copy of **Visual 7.5-1a**, **7.5-1b** and **7.5-1c**
- A copy of **Activity 7.5-1** for each student
- Copies of **Activity 7.5-2a** (enough for 1/6 of the class), **Activity 7.5-2b** (enough for 1/6 of the class), **7.5-2c** (enough for 1/6 of the class), **7.5-2d** (enough for 1/6 of the class), **7.5-2e** (enough for 1/6 of the class), and **7.5-2f** (enough for 1/6 of the class)
- Calculator for each student
- 2 Blank sheets of paper per student
- Tape or glue
- 1 pair of scissors for each pair of students
- Stapler
- 6 sheets of Chart paper
- Markers

Procedure

Engage

1. Display **Visual 7.5-1a**. Explain to the students that we are going to discuss various savings plans. First they will take this quick self-assessment to see what they know about saving options. Ask students to answer the questions on the visual to the best of their knowledge. Then have them explain their answers with a partner. Direct students to make any changes needed. Use the questions from the visual to conduct a class discussion.

   a. What are the different savings options offered by banks and credit unions? ***(Sample answers: savings account, Certificate of Deposit (CD), money market)***
   b. What are the advantages of using one of these savings options? ***(Sample answers: keep money safe, earn interest, the temptation to spend the money is lessened)***
   c. What does it mean to "earn interest"? ***(Sample answer: The financial institution pays the saver a small amount each month or each year for keeping his or her money in their institution.)***
   d. What are the current interest rates that financial institutions are paying for their various savings options? ***(Sample answer: 0.1%, 0.4%, 1.6%)***

Explain

2. Write these statistics on the board: 1975 – 10.75%, 1980 – 20%, 1995 – 9%, 2005 – 7%, 2007 – 7.75%. Then explain to students that interest rates for savings accounts are always fluctuating. The annual interest rates listed on the board are the highest interest rates paid for the given year. The determination of the interest rates is influenced by the Federal Reserve. This is the central bank of the United States. Top employees of the Federal Reserve are constantly studying the economy and analyzing data such as unemployment. They then make recommendations, such as interest rates, in an attempt

to stimulate the economy. No one knows when current interest rates will begin to increase. For today's lesson we will learn how interest rates are calculated for savings accounts. We will use different interest rates to better understand the impact these have on savings accounts.

3. Have students create an interactive booklet. Provide two sheets of paper to each student. Instruct students to fold the paper in half along the shorter line of symmetry and staple on the fold. Have students title the cover *Simple and Compound Interest*, include their name and decorate if time allows. The teacher models each step of the way.

4. Instruct students to orient the book so the fold is on top. Pages will be opened from bottom to top. Number the inside pages 1-6. Have them title the pages as follows: page 1 - Principal, page 2 - Interest, bottom half of page 2 - Annual Rate of Interest, page 3 - Simple Interest, and page 5 - Compound Interest. Leave pages 4 and 6 blank. These pages will be reserved for charts (see steps 6-10). A sample is provided as **Visual 7.5-1c** for clarification; however, do not share the visual with students until vocabulary words have been discussed.

5. Display **Visual 7.5-1b.** Discuss the definitions. Then have students write the definitions in their interactive booklet.

Explore

6. Divide the class into pairs and distribute **Activity 7.5-1** and one calculator to each student. Have students read the directions. Explain that the class will work the first two rows on each table together.

7. Use the explanation below to help students understand how to complete each row of the Simple Interest table. Model two rows for students. Then instruct them to complete the remaining rows independently or with a partner.

    a. Column 1 represents the number of years after the initial deposit of the principal.

    a. Column 2 is the amount to earn interest.

    b. Column 3 is the interest rate. In real-life, interest rates for savings account fluctuate. For our purpose, the interest rate will remain the same.

    c. Column 4 represents the interest earned. Multiply the value in column 2 times the value of column 3. (For row 1, this will be $100 x 0.05 = $5) Explain that the interest earned is transferred to a non-interest earning account.

    d. Column 5 is the ending balance that will earn interest. Enter the principal.

    e. The value of column 5 will be carried over to column 2 of the next row.

8. Once students have completed the first table, model the first two rows of the Compound Interest chart. Use the explanation below to help students understand how to complete each row. Then instruct them to complete the remaining rows independently or with a partner.

a. Column 1 represents the number of years after the initial deposit of the principal.

b. Column 2 is the amount to earn interest. For the first year, this will only be the initial amount deposited, the principal.

c. Column 3 is the annual interest rate. In real-life, interest rates for savings accounts fluctuate. For our purpose, the interest rate will remain the same.

d. Column 4 represents the interest earned. Multiply the value in column 2 times the value of column 3. (For row 1, this will be $100 x 0.05 = $5) Explain to students that they cannot earn a fraction of a cent. Therefore, they should round down to the hundredths place.

e. Column 5 is the ending balance. Find the sum of the value in column 4 and the value in column 2 to get the value of column 5.

f. Compound interest earns interest on the principal and the interest already earned. The value of column 5 will be carried over to column 2 of the next row.

Explain

9. Once students have completed the activity, allow students to share their responses for the last item on the activity. See the key for sample responses.

10. Distribute scissors and tape to students. Instruct them to cut out the simple interest chart and the compound interest chart on **Activity 7.5-1** and tape on pages 4 and 6, respectively of their interactive notebook. Tell students to use the interactive notebook as a reference for the next activity

Elaborate

11. Divide students into 6 groups. Distribute to each group one of the 6 activity sheets **Activity 7.5-2a** through **Activity 7.5-2f.** Explain to students that each group has an investor that will open two savings accounts. Each savings account will a one-time deposit for the same amount and the same interest rate. However, one will be simple interest and one will be compound interest. The members of each group should work together to complete the two tables.

12. When this is complete, one person from each group will then get one sheet of chart paper and two markers. Each group will post their results on the chart paper. Point out that the directions for this part are explained on the activity sheet.

13. Hang the completed charts around the room. The teacher should label each chart with a number of 1 to 6. Have students take out a blank sheet of paper. Fold it into 6 equal parts. Label each section 1 to 6.

14. Have students count off 1 to 6. Then regroup students by asking them to stand at the chart paper with their number. They should take a pencil and the folded paper with them.

15. Have students participate in a Gallery Walk to compare the different results. As they visit

each chart, they should do two things. 1) Write the difference between the total interest earned on compound interest and simple interest. Record this on the folded paper with the corresponding number. 2) With your group discuss how each set of data are alike and how they are different. Instruct groups to answer the two questions on their paper. The teacher should have the students rotate to the next chart every 2 minutes or a time the teacher determines is appropriate for the class.

Evaluate/End

16. When groups have completed their Gallery Walk and returned to their seats, lead a class discussion of their findings by asking the questions below.

    a) *What determined the amount of interest earned over the 5 year period?* (***Whether you received simple interest or compound interest, interest rate, principal)***

    b) *Which method of interest produced the larger amount of earnings? (**Compound)***

    c) *Which chart had the greatest difference between compound interest earned and simple interest earned? **(The one with a principal of $1800.)** Why is this? **(The more money you invest using compound interest, the more interest that is earned.***

    d) *What would you tell a friend about the difference between simple and compound interest? (**Simple interest earns interest based on principal alone; compound interest earns interest on the principal and on the accrued interest already earned. The interest is also making interest**.)*

Extension

- Have students predict the interest earned for their chart above on both the simple and compound interest for 10 years. Then have students extend their chart and calculate through 10 years. Next have students compare the difference between simple and compound after 5 years and after 10 years.

Visual 7.5-1a

Directions: Answer the following questions on a sheet of paper.

a. What are the different savings options offered by banks and credit unions?

b. What are the advantages of using one of these savings options?

c. What does it mean to "earn interest"?

d. What are the current interest rates that financial institutions are paying for their various savings options?

Visual 7.5-1b

Principal - The principal is the amount of money upon which interest is paid.

Annual Rate of Interest - The percentage an investor will earn on an investment each year.

Interest - For the saver, interest is the price a financial institution pays for using a saver's money and is normally expressed as a percentage of the amount saved.

Simple Interest – The amount of interest earned on the principal only.

Compound Interest – The interest that is earned on the principal and the interest already earned.

Visual 7.5-1c

Simple and Compound Interest

Name

Principal

Principal is the initial amount of money upon which interest is paid. (The amount deposited before interest is earned.)

Page 1

Annual Rate of Interest

The percentage an investor will earn on an investment each year.

Interest

For the saver, interest is the price a financial institution pays for using a saver's money and is normally expressed as a percentage of the amount saved.

Page 2

Simple Interest

Amount of interest earned on the principal only

Page 3

Simple Interest

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$100	5%	$5	$100
2	$100	5%	$5	$100
3	$100	5%	$5	$100
4	$100	5%	$5	$100
5	$100	5%	$5	$100
Total			$25	

Page 4

Compound Interest

Interest that is earned on the principal and the interest already earned

Page 5

Compound Interest (For interest earned round down to the hundredth place.)

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$100	5%	$5	$105
2	$105	5%	$5.25	$110.25
3	$110.25	5%	$5.51	$115.76
4	$115.76	5%	$5.78	$121.54
5	$121.54	5%	$6.07	$127.61
Total			$27.61	

In words, write a comparison of simple interest and compound interest. **Sample response: Simple interest only earns interest on the principal. Compound earns interest on the principal and interest. Therefore compound interest earns more interest.**

Page 6

Activity 7.5-1 Name _____ Class Period _____

Directions: Complete each table with the information provided.

Jessica opened a savings account with a one-time deposit of $100 that will be left in the account for at least 5 years. The savings account will pay 5% simple interest each year. Use the chart below to calculate the amount of interest she will earn in 5 years.

Simple Interest

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1	$100	5%	$5	$100
2	$100	5%		
3		5%		
4		5%		
5		5%		
Total				

Cheyenne opened a savings account with a one-time deposit of $100 that will be left in the account for at least 5 years. The savings account will pay 5% compound annually. Use the chart below to calculate the amount of interest she will earn in 5 years.

Compound Interest (truncate after the hundredth place)

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1	$100	5%	$5	$105
2	$105	5%		
3		5%		
4		5%		
5		5%		
Total				

In words, write a comparison of simple interest and compound interest. _____

_____

_____

Key 7.5-1 Name _____ Class Period _____

Directions: Complete each table with the information provided.

Jessica opened a savings account with a one-time deposit of $100 that will be left in the account for at least 5 years. The savings account will pay 5% simple interest each year. Use the chart below to calculate the amount of interest she will earn in 5 years.

Simple Interest

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1	$100	5%	$5	$100
2	$100	5%	$5	$100
3	$100	5%	$5	$100
4	$100	5%	$5	$100
5	$100	5%	$5	$100
Total			$25	

Cheyenne opened a savings account with a one-time deposit of $100 that will be left in the account for at least 5 years. The savings account will pay 5% compound annually. Use the chart below to calculate the amount of interest she will earn in 5 years.

Compound Interest (For interest earned round down to the hundredth place.)

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1	$100	5%	$5	$105
2	$105	5%	$5.25	$110.25
3	$110.25	5%	$5.51	$115.76
4	$115.76	5%	$5.78	$121.54
5	$121.54	5%	$6.07	$127.61
Total			$27.61	

In words, write a comparison of simple interest and compound interest. **Sample response: Simple interest only earns interest on the principal. Compound earns interest on the principal and interest. Therefore compound interest earns more interest.**

Activity 7.5-2a Name _____ Class Period _____

Directions: Complete each table with the information provided. Then get one chart paper and 2 markers. Draw a line down the center of the chart paper and label one side Simple Interest and one side Compound Interest. Under each heading list the principal, interest rate, and interest earned after 5 years.

Griffin opened two savings accounts with a one-time deposit of $300 in each account. The first savings account will pay 5% simple interest each year. The second one will pay 5% compound annually. Use the charts below to calculate the amount of interest he will earn in 5 year period.

Simple Interest

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Compound Interest (For interest earned round down to the hundredth place.)

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Activity 7.5-2b Name _____ Class Period _____

Directions: Complete each table with the information provided. Then get one chart paper and 2 markers. Draw a line down the center of the chart paper and label one side Simple Interest and one side Compound Interest. Under each heading list the principal, interest rate, and interest earned after 5 years.

Huan opened two savings accounts with a one-time deposit of $600 in each account. The first savings account will pay 5% simple interest each year. The second one will pay 5% compound annually. Use the charts below to calculate the amount of interest he will earn in 5 year period.

Simple Interest

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Compound Interest (For interest earned round down to the hundredth place.)

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Activity 7.5-2c Name _____ Class Period _____

Directions: Complete each table with the information provided. Then get one chart paper and 2 markers. Draw a line down the center of the chart paper and label one side Simple Interest and one side Compound Interest. Under each heading list the principal, interest rate, and interest earned after 5 years.

Betty opened two savings accounts with a one-time deposit of $900 in each account. The first savings account will pay 5% simple interest each year. The second one will pay 5% compound annually. Use the charts below to calculate the amount of interest she will earn in 5 year period.

Simple Interest

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Compound Interest (For interest earned round down to the hundredth place.)

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Activity 7.5-2d Name _____ Class Period _____

Directions: Complete each table with the information provided. Then get one chart paper and 2 markers. Draw a line down the center of the chart paper and label one side Simple Interest and one side Compound Interest. Under each heading list the principal, interest rate, and interest earned after 5 years.

Ella opened two savings accounts with a one-time deposit of $1200 in each account. The first savings account will pay 5% simple interest each year. The second one will pay 5% compound annually. Use the charts below to calculate the amount of interest she will earn in 5 year period.

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Simple Interest

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Compound Interest (For interest earned round down to the hundredth place.)

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Activity 7.5-2e Name _____ Class Period _____

Directions: Complete each table with the information provided. Then get one chart paper and 2 markers. Draw a line down the center of the chart paper and label one side Simple Interest and one side Compound Interest. Under each heading list the principal, interest rate, and interest earned after 5 years.

Ned opened two savings accounts with a one-time deposit of $1500 in each account. The first savings account will pay 5% simple interest each year. The second one will pay 5% compound annually. Use the charts below to calculate the amount of interest he will earn in 5 year period.

Simple Interest

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Compound Interest (For interest earned round down to the hundredth place.)

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Activity 7.5-2f Name _____ Class Period _____

Directions: Complete each table with the information provided. Then get one chart paper and 2 markers. Draw a line down the center of the chart paper and label one side Simple Interest and one side Compound Interest. Under each heading list the principal, interest rate, and interest earned after 5 years.

Felipe opened two savings accounts with a one-time deposit of $1800 in each account. The first savings account will pay 5% simple interest each year. The second one will pay 5% compound annually. Use the charts below to calculate the amount of interest he will earn in 5 year period.

Simple Interest

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Compound Interest (For interest earned round down to the hundredth place.)

1	2	3	4	5
Year	Amount to Earn Interest	Interest Rate	Interest Earned (2) x (3)	Ending Balance
1				
2				
3				
4				
5				
Total				

Key 7.5-2a

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$300	5%	$15	$300
2	$300	5%	$15	$300
3	$300	5%	$15	$300
4	$300	5%	$15	$300
5	$300	5%	$15	$300
Total			$75	

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$300	5%	$15	$315
2	$315	5%	$15.75	$330.75
3	$330.75	5%	$16.53	$347.28
4	$347.28	5%	$17.36	$364.64
5	$364.64	5%	$18.23	$382.87
Total			$82.88	

Key 7.5-2b

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$600	5%	$30	$600
2	$600	5%	$30	$600
3	$600	5%	$30	$600
4	$600	5%	$30	$600
5	$600	5%	$30	$600
Total			$150	

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$600	5%	$30	$630
2	$630	5%	$31.50	$661.50
3	$661.50	5%	$33.07	$694.57
4	$694.57	5%	$34.72	$729.29
5	$729.29	5%	$36.46	$765.75
Total			$165.75	

Key 7.5-2c

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$900	5%	$45	$900
2	$900	5%	$45	$900
3	$900	5%	$45	$900
4	$900	5%	$45	$900
5	$900	5%	$45	$900
Total			$225	

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$900	5%	$45	$945
2	$945	5%	$47.25	$992.25
3	$992.25	5%	$49.61	$1041.86
4	$1041.86	5%	$52.09	$1093.95
5	$1093.95	5%	$54.69	$1148.64
Total			$248.64	

Key 7.5-2d

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$1200	5%	$60	$1200
2	$1200	5%	$60	$1200
3	$1200	5%	$60	$1200
4	$1200	5%	$60	$1200
5	$1200	5%	$60	$1200
Total			$300	

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$1200	5%	$60	$1260
2	$1260	5%	$63	$1323
3	$1323	5%	$66.15	$1389.15
4	$1389.15	5%	$69.45	$1458.60
5	$1458.60	5%	$72.93	$1531.53
Total			$331.53	

Key 7.5-2e

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$1500	5%	$75	$1500
2	$1500	5%	$75	$1500
3	$1500	5%	$75	$1500
4	$1500	5%	$75	$1500
5	$1500	5%	$75	$1500
Total			$375	

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$1500	5%	$75	$1575
2	$1575	5%	$78.75	$1653.75
3	$1653.75	5%	$82.68	$1736.43
4	$1736.43	5%	$86.82	$1823.25
5	$1823.25	5%	$91.16	$1914.41
Total			$414.41	

Key 7.5-2f

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$1800	5%	$90	$1800
2	$1800	5%	$90	$1800
3	$1800	5%	$90	$1800
4	$1800	5%	$90	$1800
5	$1800	5%	$90	$1800
Total			$450	

1 Year	2 Amount to Earn Interest	3 Interest Rate	4 Interest Earned (2) x (3)	5 Ending Balance
1	$1800	5%	$90	$1890
2	$1890	5%	$94.50	$1984.50
3	$1984.50	5%	$99.22	$2083.72
4	$2083.72	5%	$104.18	$2187.90
5	$2187.90	5%	$109.39	$2297.29
Total			$497.29	

Lesson Description

This lesson takes students through the process of determining the best purchase price of an item by looking at incentives offered to the purchaser. The lesson uses the example of shopping for a plasma TV. Students compare buying at the sale price, using a coupon, and taking advantage of a rebate offer when purchasing the TV. They then analyze the results to determine the "best deal." Next, students choose four problems to solve to find the lowest/best total price.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 7.13F:** analyze and compare monetary incentives including sales, rebates and coupons

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 7.1:** Mathematical Process Standards
- **Math 7.3A:** add, subtract, multiply, and divide rational numbers fluently
- **Math 7.3B:** apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers
- **Math 7.4D:** solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems

National Standards (Supporting standards)

CEE - Council for Economic Education

CCSS - Common Core State Standards

- **CEE Buying Goods and Services 4.5** Informed decision making requires comparing the costs and benefits of spending alternatives. Costs are things that a decision maker gives up; benefits are things that a decision maker gains.
- **CCSS Math:** Standards for Mathematical Practices
- **CCSS Math 7.NS:** Apply properties of operations as strategies to add and subtract rational numbers
- **CCSS Math 7.NS:** Apply properties of operations as strategies to multiply and divide rational numbers
- **CCSS Math 7.NS:** Solve real-world and mathematical problems involving the four operations with rational numbers

PFL Terms

- Sale
- Coupon
- Rebate
- Redeem

Time Required

One 45-minute class period

Materials Required

- A copy of **Activity 7.6-1** and **7.6-2** for each student
- Paper and pencil for each pair of students
- A white boards and a marker (optional) for each student
- Exit ticket for each student

Procedure

Engage

1. Set the stage for the lesson by giving students a scenario such as the following:

   Last weekend I was so bummed out. I finished grading papers, did the yard work and other chores, and was all set to relax and watch the big game. I pushed the button on the TV remote and nothing. Nothing?!! Do it again. Still nothing. Oh man, I guess my old TV was done. Time to go shopping for a new one.

   Now I consider myself a pretty smart shopper. In other words, I get the best deal I can find for my money. School teachers need to spend their money wisely to make it go as far as possible.

Explore/Explain

2. Distribute a white board and a marker (or paper) to each student. Lead a Think-Pair-Share (TPS) about smart shopping using the prompts below. Have each student first answer the questions on the white boards or on paper. Next, have two or three students discuss the answer with the class. Third, have several students share their answers while students add to their TPS list.

   a. *What are some things that someone might do for you to consider them a smart shopper?* ***(Sample Responses: compare prices, buy items on sale, buy non-name brand items, etc.)***

   b. *What does it mean for an item to be on sale?* ***(The cost of the item is temporarily less than the regular price. After a short period of time, the cost will return to the regular price.)*** *An example of a sale might be that a particular pair of jeans regularly sells for $39.95. For one week only, the local department store has them on sale for $24.95. After the week is up, the price will return to $39.95.*

   c. *What else might a smart shopper do?* ***(A smart shopper might use a coupon.)*** *What does that mean? (****When a shopper purchases the item with a coupon (same size, brand, and quantity), the value printed on the coupon is subtracted from the purchase price. The coupon is then sent to the manufacturer who reimburses the store the coupon value plus a handling fee.)*** *For example, a $1.00 coupon off the purchase price of a package of Oreo cookies would bring the price down from $3.99 for a package to $2.99 for the same package of Oreos.*

   d. *Can you think of any other things a smart shopper might do?* ***(A smart shopper might use a rebate.)*** *Can you explain a rebate? (****A rebate is money you get back for buying a specific item. When you get a rebate, you first purchase the item. Then, you have a definite period of time to send in the rebate certificate, your sales receipt, and a proof of purchase that you really did buy the item. In 6-8 weeks, you should receive your rebate.)*** *There are many rebates offered; some of the most popular ones are for the purchase of a new car. These can be worth hundreds or even thousands of dollars.*

   e. *Manufacturers and stores use sales, coupons, and rebates to attract business. These are incentives used to get consumers to purchase these items. They also work in favor of the consumer as they reduce the regular cost of the item. Can you think of any other ways that might help a consumer spend less on a purchase or an incentive offer*

to entice a consumer to purchase a specific item? ***(Sample response: comparison shopping, free gifts given when a purchase is made, airline miles, etc.)*** Accept reasonable responses. Have students explain their response so that all students have understanding.

3. Say: *Now that you know some of the things a smart shopper would consider. Let's go shopping!*

   Before heading out to the store, I sat down with the sale ads in the newspaper and also got online to search out the best deal. This is what I found.

4. Distribute **Activity 7.6-1** to each student. Explain that each row shows a different incentive for customers to purchase the same 50-inch Panasonic Plasma TV. The Big Box Store has a sale on the TV, up to 25% off. Neighborhood Depot has a coupon and Electronic Warehouse is offering a rebate. Ask students to predict which one of the three is the best deal.

5. Tell students that we will work through each problem together to determine the best deal including tax. Assume the tax rate for this city is 8.25%. Work through each of the examples with the students. Ask students how they would calculate the cost of the TV in each situation. Students should work the steps on scratch paper or individual white boards. Check for understanding as students work through the steps. Be sure to model for the class so that all students remain on target.

   Big Box Store - Sale

Identify discount for 50 inch TV:	15% off
Calculate discount:	$729.99 x .15 = $109.50
Calculate cost after discount:	$729.99 - $109.50 = $620.49
Calculate tax :	$620.49 x .0825 = $51.19
Calculate final price with tax:	$620.49 + $51.19 = $671.68
Calculate total cost with delivery:	$671.68 (free delivery)

   Neighborhood Depot - Coupon

Identify discount for 50 inch TV:	$100 off
Calculate cost after discount:	$699.99 - $100 = $599.99
Calculate tax :	$599.99 x 8.25% (.0825) = $49.50
Calculate discounted price with tax:	$599.99 + $49.50 = $649.49
Calculate total cost with delivery:	$649.49 + $50 = $699.49

   Electronic Warehouse - Rebate

Identify discount for 50 inch TV:	$150 rebate
Calculate tax :	$734.95 x .0825 = $60.63
Calculate price with tax:	$734.95 + $60.63 = $795.58
Calculate total cost with delivery:	$795.58 + $35.00 = $830.58
Calculate the total cost factoring in the rebate:	$830.58 - $150.00 = $680.58

6. Lead a class discussion about smart shopping using the prompts below.
   a. *Which is the best deal?* ***(The first one: $671.68 at the Big Box Store)***

b. *If I had purchased the TV at regular price, I would have had to pay $790.21 including the taxes. How much are my savings by buying at the sale price rather than the regular price?* ***($118.53)***

c. *Why are the savings more than the 15%?* ***(When the purchase price is reduced, so are the taxes.)***

d. *Why is the rebate subtracted after taxes and delivery charges but the coupon is subtracted before taxes and delivery charges?* ***(Rebates are usually applied after buying the product and getting it home. Before you get the purchase to your home you must pay the taxes and delivery charge if applicable. Then you mail in a proof of purchase and receive the rebate weeks later in the mail. A coupon is used immediately at the time of purchase before taxes.)***

e. *How do our findings compare to your prediction? Why do you think that happened?*

Elaborate

7. Distribute **Activity 7.6-2** to each student. Say: *Now that you are becoming smart shoppers, you will use what you now know to find the best deals and prices on some everyday purchases.* ***Activity 7.6-2*** *has 6 different situations. Some use coupons, rebates, sales, or a combination of those. Show your work and be sure to explain your reasoning when asked.*

Evaluate/End

8. Distribute exit tickets for students to complete before leaving the classroom. As students exit the classroom, they hand the teacher completed exit tickets.

EXTENSIONS

1. Provide students with grocery ads and a box of coupons. Students find coupons that match with the grocery ad. They determine the amount of money that a consumer will save using the coupon.
2. Students choose an electronic item they would like to have, i.e., computer, game system, digital camera, etc. Using a variety of available resources, they research the cost of buying this item for the best deal. Encourage students to look for purchase incentives such as coupons, sales, and/or rebates. Students calculate the percentage saved. Recognize the students who saved the greatest percentages and got the "Best Deals."

Activity 7.6-1 Name _____ Class Period _____

Directions: Compare the prices of the 50-inch Panasonic Plasma TV to determine the best deal. Be sure to consider taxes and delivery charges, if applicable.

Big TV Sale at the Big Box Store

22-30 inch TVs	25% off
32-42 inch TVs	20% off
44-48 inch TVs	18% off
50-55 inch TVs	15% off
60-inch or larger TVs	10% off

up to 25% off & free delivery

Brands include: Samsung, Vizio, Panasonic, LG, RCA, and Insignia.

50-inch Panasonic Plasma TV

$729.99

Sale price:

8.25% tax:

Delivery charge:

Total:

NEIGHBORHOOD DEPOT
VALUABLE COUPON

Coupon good for $75 off all TVs smaller than 48 inches or $100 off all TVs 48 inches or larger. Coupon subject to TVs in stock.

Delivery Charge: $50.00 **Expiration Date: June 30**

50-inch Panasonic Plasma TV

$699.99

Less coupon:

8.25% tax:

Delivery charge:

Total:

Electronic Warehouse

Purchase any plasma TV in stock this month and receive rebate when you submit UPC proof of purchase and original sales receipt. Rebate certificate must be received by June 15th. Allow 6 weeks to process rebate.

22-36 inch TV	$100 rebate
37-48 inch TV	$125 rebate
50-65 inch TV	$150 rebate
66 inch and larger TV	$175 rebate

Delivery Charge: $35

50-inch Panasonic Plasma TV

$734.95

8.25% tax:

Delivery charge:

Rebate:

Total:

Key 7.6-1

Name _____ Class Period _____

Directions: Compare the prices of the 50-inch Panasonic Plasma TV to determine the best deal. Be sure to consider taxes and delivery charges, if applicable.

Big TV Sale at the Big Box Store

22-30 inch TVs	25% off
32-42 inch TVs	20% off
44-48 inch TVs	18% off
50-55 inch TVs	15% off
60-inch or larger TVs	10% off

up to 25% off & free delivery

Brands include: Samsung, Vizio, Panasonic, LG, RCA, and Insignia.

50-inch Panasonic Plasma TV

$729.99

Sale price:	$620.49
8.25% tax:	$51.19
Delivery charge:	0
Total:	$671.68

NEIGHBORHOOD DEPOT
VALUABLE COUPON

Coupon good for **$75 off** all TVs less than 48 inches or **$100 off** all TVs 48 inches or larger. Coupon subject to TVs in stock.

Delivery Charge: $50.00 **Expiration Date: June 30**

50-inch Panasonic Plasma TV

$699.99

Less coupon:	$599.99
8.25% tax:	$49.50
Delivery charge:	$50.00
Total:	$699.49

Electronic Warehouse

Purchase any plasma TV in stock this month and receive rebate when you submit UPC proof of purchase and original sales receipt. Rebate certificate must be received by June 15th. Allow 6 weeks to process rebate.

22-36 inch TV	$100 rebate
37-48 inch TV	$125 rebate
50-65 inch TV	$150 rebate
66 inch and larger TV	$175 rebate

Delivery Charge: $35

50-inch Panasonic Plasma TV

$734.95

8.25% tax:	$60.63
Delivery charge:	$35.00
Less Rebate:	$150.00
Total:	$680.58

Activity 7.6-2 Name _____ Class Period _____

Directions: Select the "best deal" for purchasing the item(s) described. Show your work and explain your reasoning on a separate sheet of paper. Then calculate the final cost with a tax rate of re 8.25%.

1. Shiny Shampoo cost $6.98 for a 14 oz. bottle. A 28 oz. bottle of Shiny Shampoo cost $12.99. You have a $2.00 coupon good on any size bottle of Shiny Shampoo. Which bottle is the better buy if you use the coupon?	**Best choice per oz:** **Total cost:**
2. Aunt Ginny's triplets are playing basketball this season and need shoes. The regular price of basketball shoes is $39 per pair. She found a store that offered a rebate of $10 per pair (limit 2 per family). Uncle Ben found a store that sells the same shoes at the same price advertising Buy One Pair, Get Second Pair Half Off. Which is the better offer before taxes? After taxes? 	**Best Choice for 3 pairs:** **Total cost for 3 pairs:**
3. Your birthday is coming up and your parents said you could invite four friends to a concert by your favorite band. Ticket prices include tax and cost $35.00 for one, $65.00 for two, and $125 for a group of four. If purchased before the 15th, you receive a 5% discount. Today is the 10th. What will be the price for 5 tickets purchased today?	**Total cost for 5 tickets:**
4. Charlie needs 6 pairs of socks. He can buy 2 pairs of socks for $4.99, 3 pairs for $8.49, or 6 pairs for $15.95. Which packages should he buy and what will be the total cost before tax?	**Best Choice:** **Total cost for socks:**
5. Carly plans to buy exactly 3 cans of Soupy Soup. Evaluate the three ads and choose the deal that provides the greatest saving. Then give a reason for your choice. Soupy Soup 20% off Regular price: $1.50 Soupy Soup Buy 2 Get 1 Free Regular price: $1.50 Soupy Soup Regular price: $1.50 Coupon: Save 50¢ on one can	**Best Choice:** **Total cost for 3 cans:**
6. The Smoothie Store is having a sale: 2 Fruit Smoothies for $3.89. I really want a strawberry smoothie. My BFF wants to get a Banana Smoothie. If we both get a smoothie, what is the total cost for each smoothie?	**Total cost for each:**

Key 7.6-2 Name _____ Class Period _____

Directions: Select the "best deal" for purchasing the item(s) described. Be sure to show your work and explain your reasoning when asked on another sheet of paper. Taxes are 8.25% (.0825).

1. Shiny Shampoo cost $6.98 for a 14 oz. bottle. A 28 oz. bottle of Shiny Shampoo cost $12.99. You have a $2.00 coupon good on any size bottle of Shiny Shampoo. Which bottle is the better buy if you use the coupon?

14 oz. bottle
$6.98 - $2.00 = $4.98 for a 14 oz. bottle
$4.98 ÷ 14 oz. = .356 per oz.
$4.98 x .0825 = $0.41 tax
$4.98 + $0.41 = $5.39

28 oz. bottle
$12.99 - $2.00 = $10.99
$10.99 ÷ 28 oz. = $.395 per oz.

Best choice per oz: 14 oz.

Total cost: $5.39

2. Aunt Ginny's triplets are playing basketball this season and need shoes. The regular price of basketball shoes is $39 per pair. She found a store that offered a rebate of $10 per pair (limit 2 per family). Uncle Ben found a store that sells the same shoes at the same price advertising Buy One Pair, Get Second Pair Half Off. Which is the better offer before taxes? After taxes?

Before taxes:
Rebate offer:
$39 x 3 pairs of shoes = $117.00
$117.00 – 2($10) rebate = $97.00

Buy One Pair, Get Second Pair Half Off
$39 + $39(.5) + $39 = $97.50

$97.00 < $97.50 (rebate is better offer)

After taxes:
Rebate offer:
$39 x 3 pairs of shoes = $117.00
$117.00 x .0825 = $9.65 tax
$117 + $9.65 = $126.65 Total
$126.65 – 2($10) rebate = $106.65 Final Cost

Buy One Pair, Get Second Pair Half Off
$39 + $39(.5) + $39 = $97.50
$97.50 x .0825 tax = $8.04
$97.50 + $8.04 tax = $105.54 Total/Final Cost

Before taxes:
Best Choice for 3 pairs:
Rebate offer ($97.00)

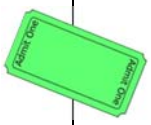
After taxes:
Store Special Buy One Pair, Get Second Pair Half Off

Total cost for 3 pairs:
$105.54

3. Your birthday is coming up and your parents said you could invite four friends to a concert by your favorite band. Ticket prices include tax and cost $35.00 for one, $65.00 for two, and $125.00 for a group of four. If purchased before the 15th, you receive a 5% discount. Today is the 10th. What will be the price for 5 tickets purchased today?

5 tickets: $125.00 + $35.00 = $160.00
5% discount $160.00 x .05 = $8.00
Discounted cost of tickets $160.00 - $8.00 = $152.00

Total cost for 5 tickets:



$152.00

4. Charlie needs 6 pairs of socks. He can buy 2 pairs of socks for $4.99, 3 pairs for $8.49, or 6 pairs for $15.95. Which packages should he buy and what will be the total cost before tax?

Package of 2:
$4.99 x .0825 = .41
$4.99 + .41 = $5.40 *price per pair $5.40 ÷ 2 = $2.70*
3 packages of 2= 6 pairs
$5.40 x 3 = $16.20

Package of 3:
$8.49 x .0825 = .70
$8.49 + .70 = $9.19 price per pair $9.19 ÷ 3 = $3.06
2 packages of 3 = 6 pairs
$9.19 x 2 = $18.38

Package of 6:
$15.95 x .0825 = 1.32
$15.95 + $1.32 = $17.27 price per pair $17.27 ÷ 6 = $2.88

Best Choice: 3 packages with 2 pair in each

Total cost for socks: $16.20

5. Carly plans to buy exactly 3 cans of Soupy Soup. Evaluate the three ads and choose the deal that provides the greatest saving. Then give a reason for your choice.

Soupy Soup	Soupy Soup	Soupy Soup
20% off	Buy 2 Get 1 Free	Regular price: $1.50
Regular price: $1.50	Regular price: $1.50	Coupon: Save 50¢ on one can

Sale *$1.50 x .20 = .30*
$1.50 - .30 = $1.20 per can
$1.20 x 3 cans = $3.60

Buy 2 Get 1 Free *$1.50 + $1.50 + 0 = $3.00* *(tax) $3.00 x .0825 = .25*
(with tax) $3.00 + $.25 = $3.25

Coupon *$1.50 x 3 = $4.50*
$4.50 - .50 (coupon) = $4.00

If 3 separate Coupons *$1.50 - .50 = $1.00 per can*
$1.00 x 3 = $3.00 three cans with three coupons

Best Choice: Buy 2 Get 1 Free

Total cost for 3 cans: $3.25

6. The Smoothie Store is having a sale: 2 Fruit Smoothies for $3.89. I really want a strawberry smoothie. My BFF wants to get a Banana Smoothie. If we both get a smoothie, what is the total cost for each smoothie?

Tax *$3.89 x .0825 = .32*
Cost for smoothies with tax *$3.89 + .32 = $4.21*
Split cost with BFF *$4.21 ÷ 2 = $2.105*

Total cost for each: One will pay $2.10 and one will pay $2.11.

Exit Ticket

The most important thing I learned from today's lesson is

Three possible ways to save money when purchasing an item are:

1.
2.
3.

Name: Teacher:

Exit Ticket

The most important thing I learned from today's lesson is

Three possible ways to save money when purchasing an item are:

1.
2.
3.

Name: Teacher:

Exit Ticket

The most important thing I learned from today's lesson is

Three possible ways to save money when purchasing an item are:

1.
2.
3.

Name: Teacher:

Exit Ticket

The most important thing I learned from today's lesson is

Three possible ways to save money when purchasing an item are:

1.
2.
3.

Name: Teacher:

Lesson Description

This lesson has two objectives. The first is to show eighth graders that saving for the future is a reality for them, and not something they have to put off until much later. First students will examine their spending habits and determine how they might be able to save money and calculate an individual savings goal. The students then move to a computer lab where they will learn how to use an online savings calculator. This calculator will calculate the final savings balance when interest is earned. Students will explore various variables such as initial deposit, monthly deposit and length of savings to investigate how the interest grows.

Finally, the students will learn how to calculate interest for both simple and compound interest using a table and a calculator.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 8.12C:** explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time
- **PFL Math 8.12D** calculate and compare simple interest and compound interest earnings

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 8.1A:** apply mathematics to problems arising in everyday life, society, and the workplace

National Standards (Supporting standards)

CEE - Council for Economic Education

- **CEE Earning Income 8.7:** People often use a portion of their savings to help themselves or their family members build human capital through education or job training.
- **CEE Savings 8.5:** Principal is the initial amount of money upon which interest is paid.
- **CEE Savings 8.6:** Compound interest is the interest that is earned not only on the principal but also on the interest already earned.
- **CEE Savings 8.7:** The value of a person's savings in the future is determined by the amount saved and the interest rate. The earlier people begin to save, the more savings they will be able to accumulate, all other things equal, as a result of the power of compound interest.
- **CEE Savings 8.8:** Different people save money for different reasons, including large purchases (such as higher education, autos, and homes), retirement, and unexpected events. People's choices about how much to save and for what to save change considerably over the course of their lives and are based on their tastes and preferences.

PFL Terms

- Annual
- Simple interest
- Compound interest
- Initial amount

Time Required

Two 45-minute class periods

Materials Required

A copy of **Activity 8.1-1** for each student
A copy of **Visual 8.1-1**
A copy of **Activity 8.1-2** for each student
A copy of **Activity 8.1-3** for each student and one for a visual
A computer with Internet capabilities for each student
A calculator for each student

Procedure

Engage

1. Tell the students that today, we are going to study how money can grow over time. We will examine how saving even a little money can go a long way. The most common reason for students to save is for college or vocational school. Write the following on the board: *Saving for your education is an investment in yourself*. Ask students to think quietly for a minute what that statement means to them. Then ask them to share their thoughts with a neighbor. Allow a few students to respond. ***(Sample response: If I save my money for education, then I will earn more money in the future.)*** Adults commonly save for emergencies or retirement. For what kind of emergency might someone save? ***(Someone might lose his/her job due to layoffs or the economy. Someone might have an accident and not be able to go to work.)***

Explore

2. Distribute **Activity 8.1-1** to each student. Read the directions to the students.

3. Tell students to find the area in column one that says, "How I spend my money".

   a. In this area, ask students to write down everything they spent money on for the past week. Allow about 2 minutes for thought. If students are struggling with this task, ask the following questions. *Did you buy a school lunch? Did you buy a snack after school? Did you buy an app or a download? Did you buy a soda, water or a candy?*

   b. Now ask them to circle one item from their list that they could have done without. Next to this item, write the cost for this item.

   c. Tell the students that in the same area they are to calculate how much that item could potentially cost them if they purchased the item every week for a month. ***(Multiply the cost of the item times 4 weeks.)*** Instruct students to write this value in column 2. Although some may argue that they will not purchase this item every week of the month, this exercise will help them identify their impulsive spending habits. Tell students that with careful planning money spent on unplanned expenses could become a savings vehicle.

4. Tell students to find the area in column one that says, "Trade-offs I can make".

a. Tell students that now we are going to determine if there are any other avenues for saving money by making a trade-off. Explain that a trade-off is giving up of one thing for another. For example, one might spend $5.00 a day buying lunch at school. If that person decides to bring lunch every day, she might be able to save additional money. Her trade-off for buying lunch at school is not having money to save. Her trade-off for bringing a sack lunch is getting up earlier to make her lunch. Ask students to give additional examples of trade-offs. ***(Sample response: If someone spends $1.00 a day to buy a soda***

out of the soda machine, his trade-off is the loss of money saved. If he decides to buy a six pack of generic soda from the store, his trade-off is buying a cold, name brand soda out of the machine.)

b. Ask them to examine their list again. Are there any trade-offs they would be willing to make to save money? Write this item in the space titled, "Trade-offs I can make". Some of your students may already be making as many sacrifices as possible. Assure these students that it is okay if they do not have any options to make a trade-off.

c. Instruct students to write how they will make the trade-off. ***(Sample response: Instead of spending $1.25 each day at school for a snack, I will wait till I get home to eat a snack.)***

d. Instruct students to write the amount they believe they could save each week by making this trade-off. In the same area they are to calculate how much that item could potentially cost them if they purchased the item every week for a month. ***(Multiply the cost of the item times 4 weeks.)*** Instruct students to write this value in column 2.

5. Tell students to find the area in column one that says, "Other sources of income".

a. Tell students to think of any other avenues to earn money. Do you earn an allowance for doing chores? Could you do extra chores around the house for money? Could you tutor a younger child? In this space, write your plan for earning money.

b. Instruct students to write the amount they believe they could earn each week in this space. Then calculate how much they could save per month if they saved all of their earnings. Instruct students to write this value in column 2.

6. Instruct students to add the values in column 2 and record on the line that reads "Total Monthly Savings". Explain that this is their monthly savings goal. They will now explore how this small amount of money if invested regularly can grow over time. Do not collect this sheet from the students. This is their private savings plan.

7. Take students to a computer lab with Internet capabilities. Distribute **Activity 8.1-2** to each student.

Explain

8. Tell students that some banks and governmental agencies provide Internet tools to help them plan their future. Explain that the tool they will use in this lesson will be a savings calculator at the Bankrate.com website. Instruct them to access the **Simple savings calculator** by following directions on their handout. Direct their attention to the first column on the screen that has a drop down menu for Annual Interest (compounded) with options "monthly", "quarterly", "semiannually", and "annually". Explain that financial institutions figure interest earned on the money in the account in different ways. Some figure interest once a year which is called compounded annually. If the interest is calculated twice a year, it is called semiannually. If it is figured monthly, then the interest is calculated monthly. The more frequently it is compounded, the more often the interest is deposited into the savings account. For today's purpose, we will only

use compounded **annually.**

9. Display **Visual 8.1-1**. Ask students to explain what each heading on the table means. If there is a term with which they are unfamiliar, they should make a note above heading row.

    a. **Initial Amount** – The amount of money deposited when the account is open.
    b. **Monthly Deposit** – This is the amount that is deposited every month.
    c. **Interest Rate** – For the saver, an interest rate is the price a financial institution pays for using a saver's money and is normally expressed as a percentage of the amount saved.
    d. **Number of Years** – This is the total length of the savings assuming no money has been withdrawn.
    e. **Financial Savings Balance** – The total of your savings after number of years indicated in column 4 is the financial savings balance.
    f. **Amount Invested** – The total amount you contributed to the savings account is the amount invested or the principal.
    g. **Total Interest** – Total interest is how much the bank paid you for lending them money.

Explore

10. Lead the students through the process of entering the information on the first row of the handout into the **Simple savings calculator**. Explain that the term of 5 years was chosen to represent the number of years they have to save before they graduate, if this year is counted. Once the data is entered, click on the "Calculate" button. Explain that a list of values will appear on the bottom of the screen. Each line represents the balance of the savings account after each year. The "Final Savings Balance" represents the amount of money that they will have in the savings account after 5 years. They should enter this value in the fifth column.

11. **Activity 8.1-2** is a self-guided lesson. Direct students to complete all the tables in **Activity 8.1-2** on their own. The teacher should be prepared with the key to answer any questions. For #2, the teacher will need to approve the process for calculating the amount invested and total interest.

12. After the students have filled in all the tables, pair students together. Then have them discuss and answer the questions below each table.

13. Once students have completed **Activity 8.1-2**, ask volunteers to share their answers.

14. Then ask students to look back at the different tables they have completed, and use them to rank the three factors examined in the lesson to conjecture which of them have the greatest effect on growth, and which has the least. To help them understand the task, ask the questions below.

    a. Locate the table under #1. Which of the first 4 columns had values that varied? ***(Monthly Deposit)*** Circle these words. This is the factor to consider for the first table.

    b. Locate the table under #7. Which of the first 4 columns had values that varied? ***(Initial Deposit)*** Circle these words. This is the factor to consider for the second

table.

c. Locate the table under #13. Which of the first 4 columns had values that varied? ***(Number of Years)*** Circle these words. This is the factor to consider for the third table.

15. Tell the students to now rank the three factors examined in the lesson to conjecture which of them have the greatest effect on growth, and which has the least. Tell students to be prepared to defend their ranking. After the students have completed this task, allow them time to justify their rankings with their partner**.** Allow a few students to share their rankings and justifications. Explain that the important point here, though, is that it is not an "either/or" situation. All three factors can be used to maximize results, and students should try to use as many of them as possible. Because the investigations used in the lesson are somewhat limited in scope, do not be surprised if students choose a different rankings than might be expected.

16. Distribute **Activity 8.1-3** and a calculator to each student. Tell them that in the last lesson they were able to see how interest grew over time using an online calculator. But how is compound interest calculated? Why does it begin to grow faster as the years go by and as the balance grows? To better understand compound interest, we will first investigate simple interest.

Elaborate

17. Use the explanation below to help students understand how to complete each row of the Simple Interest table. Model two rows for students. Then instruct them to complete the remaining rows independently or with a partner.

a. Column 1 represents each cycle or year.

b. Column 2 is the beginning balance for the cycle.

c. Column 3 is the amount deposited.

d. Column 4 is the new balance which is the beginning balance of this cycle plus the amount deposited. Add the value in column 2 and the value of column 3 of this row.

e. Column 5 is the annual interest rate that this account will earn.

f. Column 6 is the interest earned for this cycle. Find the product of the new balance and the interest rate. Multiply the value in column 4 with the value in column 5 of this row. Explain to students that they cannot earn a fraction of a cent. Therefore, they should round down to the hundredths place.

g. Column 7 is the ending balance that will earn interest. For simple interest, the account will not earn interest on the interest. Record only the principal. Explain that the interest earned is transferred to a non-interest earning account.

h. The value in column 7 should be carried over to column 2 of the next row.

18. Next, model the first two rows of the Compound Interest chart. Use the explanation below to help students understand how to complete each row. Then instruct them to complete the remaining rows independently or with a partner.

    a. Column 1 represents each cycle or year.

    b. Column 2 is the beginning balance for the cycle.

    c. Column 3 is the amount deposited.

    d. Column 4 is the new balance which is the beginning balance of this cycle plus the amount deposited. Add the value in column 2 and the value of column 3 of this row.

    e. Column 5 is the annual interest rate that this account will earn.

    f. Column 6 is the interest earned for this cycle. Find the product of the new balance and the interest rate. Multiply the value in column 4 with the value in column 5 of this row. Explain to students that they cannot earn a fraction of a cent. Therefore, they should round down to the hundredths place.

    g. Column 7 is the ending balance that will earn interest. For compound interest, the account will earn interest on the new balance and the interest earned. Therefore, add the value in column 4 and the value in column 6 of this row.

    h. The value of column 7 should be carried over to column 2 of the next row.

19. After the students have filled in all the tables, pair students together. Then have them discuss and answer the questions below each table. Then use the key to go over the answers.

20. Once students have completed the activity, allow students to share their responses. See key for sample responses.

End/Evaluate

21. For closure, ask the questions below.

    a. Other than savings accounts, what other savings plans do financial institutions offer? ***(Certificates of Deposit and Money Markets.)*** Explain that a Certificate of Deposit has a minimum deposit and a specific length of time for which the money must remain in the account. Money Markets typically have a minimum deposit and restrict the number of withdrawals. Both of these options often pay a higher interest rate than a savings account.
    b. What is interest earned? ***(It is the money the bank or credit union pays the customer for keeping their money in their savings plans.)***
    c. What is simple interest? ***(Simple interest occurs when the account earns interest on***

the principal only.)

d. What is compound interest***? (Compound interest occurs when you earn interest on the principal and interest already earned.)*** Explain to students that many financial institutions actually pay interest compounded monthly. This means that 1/12 of the annual interest is calculated and deposited into accounts each month. This method of compounding interest allows for the interest to grow faster than compounding annually.

Activity 8.1-1

Directions: This activity sheet is to help you devise a savings goal. It will not be collected. Your teacher will explain how to complete the table below.

Spending and Earning	Money to Save Monthly
How I spend my money:	
Trade-offs I can make:	
Other sources of income:	
Total Monthly Savings:	

Visual 8.1-1

a. **Initial Amount** – The amount of money deposited when the account is open.
b. **Monthly Deposit** – This is the amount that is deposited every month.
c. **Interest Rate** – For the saver, an interest rate is the price a financial institution pays for using a saver's money and is normally expressed as a percentage of the amount saved.
d. **Number of Years** – This is the total length of the savings assuming no money has been withdrawn.
e. **Financial Savings Balance** – The total of your savings after number of years indicated in column 4 is the financial savings balance.
f. **Amount Invested** – The total amount you contributed to the savings account is the amount invested or the principal.
g. **Total Interest** – Total interest is how much the bank paid you for lending them money.

Activity 8.1-2 Name _____ Class Period _____

Directions: On your computer, go to www.bankrate.com. Locate the list of calculators in the middle of the screen. Click on the "Simple savings calculator" located at the bottom of the calculator list. Then complete the tables and answer the questions below each table.

1. Enter the values you see on each row below in the boxes on *Bankrate.com*. Click on calculate and record the Final Savings Balance in column 5. Use compounded annually for each calculation.

Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance	Amount Invested	Total Interest
$25	$10	4%	5			
$25	$25	4%	5			
$25	$50	4%	5			
$25	$100	4%	5			

2. To help analyze the table, you will need to calculate the last two columns using a calculator. First, explain the process below that you would use to calculate the Amount Invested and the Total Interest. Then check with your teacher. When your teacher approves your process, complete the last two columns.

Amount Invested = _____

Total Interest = _____

3. How much interest was earned when $10 was deposited monthly for 5 years?_____

4. How much interest was earned when $100 was deposited monthly for 5 years? _____

5. What is the difference in interest earned for between the two calculations above? _____

6. What do these calculations tell you about the effect of the monthly deposit? _____

_____

7. Now see what happens if you change the initial deposit. Enter the values you see on each row below in the boxes on *Bankrate.com*. Click on calculate and record the Final Savings Balance in column 6. Use compounded annually for each calculation.

Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance	Amount Invested	Total Interest
$10	$25	4%	5			
$25	$25	4%	5			
$50	$25	4%	5			
$100	$25	4%	5			

8. Use a calculator to calculate the last two columns.

9. How much more was invested with a $100 deposit versus a $10 deposit? _____

10. How much more interest was earned when the initial deposit increased from $10 to $100? _____

11. What does this number tell you and why do you think that is the case?

_____

_____

12. Let's consider that you have an initial deposit of $1000 with a monthly deposit of $25 for 5 years at 4% interest rate. Predict how much more interest would be earned than having an initial deposit of $10.

    a. My prediction: _____

    b. Now use the online calculator to calculate the final savings balance for an initial deposit of $1000: _____ How much interest was earned? _____

    c. How much more interest was earned when the initial deposit increased from $10 to $1000? _____

    d. How did this compare to your prediction? _____

13. Now see what happens if you change how long you save. Enter the values you see on each row below in the boxes on *Bankrate.com*. Click on calculate and record the Final Savings Balance in column 6. Use compounded annually for each calculation.

Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance	Amount Invested	Total Interest
$100	$25	4%	10			
$100	$25	4%	20			
$100	$25	4%	30			
$100	$25	4%	40			

14. Use a calculator to calculate the last two columns.

15. Based on the totals in the last column, what effect does the length of time have on the total money saved? Explain what you found below.

Cut along on dotted line.

16. Now let's see how much money you will have if you invest your monthly savings goal for 5 years. This is for your information only. Cut off this section and keep for your information.

Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance	Amount Invested	Total Interest
		4%	5			
		4%	10			
		4%	20			
		4%	30			
		4%	40			

Key 8.1-2 Name _____ Class Period _____

Directions: On your computer, go to www.bankrate.com. Locate the list of calculators in the middle of the screen. Click on the "Simple savings calculator" located at the bottom of the calculator list. Then complete the tables and answer the questions below each table.

1. Enter the values you see on each row below in the boxes on *Bankrate.com*. Click on calculate and record the Final Savings Balance in column 5. Use compounded annually for each calculation.

Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance	Amount Invested	Total Interest
$25	$10	4%	5	**$692.21**	**$625.00**	**$67.21**
$25	$25	4%	5	**$1,684.89**	**$1,525.00**	**$159.89**
$25	$50	4%	5	**$3,339.37**	**$3,025.00**	**$314.37**
$25	$100	4%	5	**$6,648.32**	**$6,025.00**	**$623.32**

2. To help analyze the table, you will need to calculate the last two columns using a calculator. First, explain the process below that you would use to calculate the Amount Invested and the Total Interest. Then check with your teacher. When your teacher approves your process, complete the last two columns.

Amount Invested = *Initial Amount + Monthly Deposit x 60 months*

Total Interest = *Final Savings Balance – Amount Invested*

3. How much interest was earned when $10 was deposited monthly for 5 years?*$67.21*

4. How much interest was earned when $100 was deposited monthly for 5 years? *$623.32*

5. What is the difference in interest earned for between the two calculations above? *$351.62*

6. What do these calculations tell you about the effect of the monthly deposit? *Sample answers: The more money you save the more interest you will earn. The more money you save the faster your savings will grow.*

7. Now see what happens if you change the initial deposit. Enter the values you see on each row below in the boxes on *Bankrate.com*. Click on calculate and record the Final Savings Balance in column 6. Use compounded annually for each calculation.

Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance	Amount Invested	Total Interest
$10	$25	4%	5	$1,666.64	$1,510.00	$156.64
$25	$25	4%	5	$1,684.89	$1,525.00	$159.89
$50	$25	4%	5	$1,715.31	$1,550.00	$165.31
$100	$25	4%	5	$1,776.14	$1,600.00	$176.14

8. Use a calculator to calculate the last two columns.

9. How much more was invested with a $100 deposit versus a $10 deposit? *$90*

10. How much more interest was earned when the initial deposit increased from $10 to $100? *$19.50*

11. What does this number tell you and why do you think that is the case? *By increasing the initial deposit by $90, an additional $19.50 was earned after 5 years at 4% interest.*

12. Let's consider that you have an initial deposit of $1000 with a monthly deposit of $25 for 5 years at 4% interest rate. Predict how much more interest would be earned than having an initial deposit of $10.

    a. My prediction: *Answers will vary.*

    b. Now use the online calculator to calculate the final savings balance for an initial deposit of $1000: *$2871.13* How much interest was earned? *2871.13 – (1000 + 25 x 60) = $371.13*

    c. How much more interest was earned when the initial deposit increased from $10 to $1000? *$214.49*

    d. How did this compare to your prediction?

13. Now see what happens if you change how long you save. Enter the values you see on each row below in the boxes on *Bankrate.com*. Click on calculate and record the Final Savings Balance in column 6. Use compounded annually for each calculation.

Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance	Amount Invested	Total Interest
$100	$25	4%	10	$3,815.42	$3,100.00	$715.42
$100	$25	4%	20	$9,315.16	$6,100.00	$3,215.16
$100	$25	4%	30	$17,456.10	$9,100.00	$8,356.10
$100	$25	4%	40	$29,506.70	$12,100.00	$17,406.70

14. Use a calculator to calculate the last two columns.

15. Based on the totals in the last column, what effect does the length of time have on the total money saved? Explain what you found below. *Sample answer: It is possible to save a lot of money by saving a little bit of money each month. As time increases, the interest begins to grow faster.*

Cut along on dotted line.

16. Now let's see how much money you will have if you invest your monthly savings goal for 5 years. This is for your information only. Cut off this section and keep for your information.

Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance	Amount Invested	Total Interest
		4%	5			
		4%	10			
		4%	20			
		4%	30			
		4%	40			

Activity 8.1-3 Name _____ Class Period _____

Directions: Read account details above each table, complete the tables then answer the questions.

Emma opened a savings account that will pay 5% simple interest each year. Simple interest is the method of earning interest only on the principal. She will deposit $100 each year. Use the chart below to calculate her balance and the interest she will receive over 6 years.

Simple Interest

1	2	3	4	5	6	7
Deposit Cycle	Beginning Balance for new cycle	Deposited Amount	New Balance (2) + (3)	Rate of Interest	Interest earned (4) x (5)	Ending Balance
1	$0	$100	$100	5%	$5	$100
2	$100			5%		
3				5%		
4				5%		
5				5%		
6				5%		
Total						

1. What is the total interest Emma will receive? _____

2. What is the total Emma deposited in her account after 6 years? _____

3. What is her combined total? _____

4. If Emma stops making deposits and makes no withdrawals, how will her account change?

_____

Ethan also opened a savings account that will pay 5% interest compounded annually. He will deposit $100 each year on his birthday. Compound interest is the method of earning interest on the principal and the interest earned. Use the chart below to calculate his balance and interest earned. When calculating the interest, round down to the hundredths place.

Compounded Interest

1	2	3	4	5	6	7
Deposit Cycle	Beginning Balance for new cycle	Deposited Amount	New Balance (2) + (3)	Rate of Interest	Interest earned (4) x (5)	Ending Balance (4) + (6)
1	$0	$100	$100	5%	$5	$105
2	$105			5%		
3				5%		
4				5%		
5				5%		
6				5%		
Total						

5. What is the total interest Ethan will receive? _____

6. What is the total Ethan deposited in his account after 6 years? _____

7. What is his combined total? _____

8. If Ethan stops making deposits and makes no withdrawals, how will his account change?

_____

9. Explain the differences between Emma's savings plan and Ethan's savings plan.

Key 8.1-3 Name _____ Class Period _____

Directions: Read account details above each table, complete the tables then answer the questions.

Emma opened a savings account that will pay 5% simple interest each year. Simple interest is the method of earning interest only on the principal. She will deposit $100 each year. Use the chart below to calculate her balance and the interest she will receive over 6 years.

Simple Interest

1	2	3	4	5	6	7
Deposit Cycle	Beginning Balance for new cycle	Deposited Amount	New Balance (2) + (3)	Rate of Interest	Interest earned (4) x (5)	Ending Balance
1	$0	$100	$100	5%	$5	$100
2	$100	$100	$200	5%	$10	$200
3		$100	$300	5%	$15	$300
4		$100	$400	5%	$20	$400
5		$100	$500	5%	$25	$500
6		$100	$600	5%	$30	$600
Total		$600			$105	

1. What is the total interest Emma will receive? *$105*
2. What is the total Emma deposited in her account after 6 years? *$600*
3. What is her combined total? *$705*
4. If Emma stops making deposits and makes no withdrawals, how will her account change? *The account will continue to grow $30 every year.*

Ethan also opened a savings account that will pay 5% interest compound annually. He will deposit $100 each year on his birthday. Compound interest is the method of earning interest on the principal and the interest earned. Use the chart below to calculate his balance and interest earned. When calculating the interest, round down to the hundredths place.

Compounded Interest

1	2	3	4	5	6	7
Deposit Cycle	Beginning Balance for new cycle	Deposited Amount	New Balance (2) + (3)	Rate of Interest	Interest earned (4) x (5)	Ending Balance (4) + (6)
1	$0	$100	$100	5%	$5	$105
2	$105	$100	$205	5%	$10.25	$215.25
3	$215.25	$100	$315.25	5%	$15.76	$331.01
4	$331.01	$100	$431.01	5%	$21.55	$452.56
5	$452.56	$100	$552.56	5%	$27.63	$580.19
6	$580.19	$100	$680.19	5%	$34.01	$714.20
Total		$600			$114.20	

5. What is the total interest Ethan will receive? *$114.20*

6. What is the total Ethan deposited in his account after 6 years? *$600*

7. What is his combined total? *$714.20*

8. If Ethan stops making deposits and makes no withdrawals, how will his account change? *The amount of interest will increase each year.*

9. Explain the differences between Emma's savings plan and Ethan's savings plan. *Emma is only earning interest on the principal because it's simple interest. Ethan is earning interest on the principal and the interest earned. Ethan's account will grow faster than Emma's account.*

Lesson Description

This lesson focuses on the various sources people use for borrowing money or using credit. Some people, especially those who do not know all their options, borrow money from lenders who charge very high interest rates. The purpose of this lesson is to show students, as they enter the world of credit and borrowing, just what options they have.

Students will learn that the Annual Percentage Rate is used to compare interest rates. They will learn how to use online calculators to determine the repayment amount for loans and credit cards.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 8.12A:** solve real-world problems comparing how interest rate and loan length affect the cost of credit
- **PFL Math 8.12B:** calculate the total cost of repaying a loan, including credit cards and easy access loans, under various rates of interest and over different periods using an online calculator

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 8.1A:** apply mathematics to problems arising in everyday life, society, and the workplace

National Standards (Supporting standards)

CEE - Council for Economic Education

- **CEE Using Credit 8.2:** The longer the repayment period on a loan and the higher the interest rate on the loan, the larger is the total amount of interest charged on a loan.
- **CEE Using Credit 8.3:** A credit card purchase is a loan from the financial institution that issued the card. Credit card interest rates tend to be higher than rates for other loans. In addition, financial institutions may charge significant fees related to a credit card and its use.
- **CEE Using Credit 8.4:** Borrowers who use credit cards for purchases and who do not pay the full balance when it is due pay much higher costs for their purchases because interest is charged monthly. A credit card user can avoid interest charges by paying the entire balance within the grace period specified by the financial institution.
- **CEE Using Credit 8.5:** Various financial institutions and businesses make consumer loans and may charge different rates of interest.

PFL Terms

- Interest rate
- Easy access loan
- APR (Annual Percentage Rate)
- Pay day loan
- Car title loan
- Loan term
- Credit card

Time Required

Two 45-minute class periods

Materials Required

- A copy of **Visual 8.2-1** for each student
- A copy of **Activity 8.2-1** for each student
- A copy of **Activity 8.2-2** for each student
- A copy of **Activity 8.2-3** for each student
- A calculator for each student
- An index card for each student
- A computer with Internet capabilities

Procedure

Engage

1. Tell students that in Lesson 1, we studied the benefits of compound interest when someone saves money. What is compound interest? ***(Compound interest is the interest that is earned not only on the principal but also on the interest already earned.)*** The financial institution will pay a saver money because the saver puts money in a savings account. Now the financial institution is able to loan the saver's money to a borrower and charge a higher interest rate. Today we are going to learn about the cost of borrowing money. What are different ways you can borrow money? ***(Sample responses: You can get a loan from a bank or a credit union. You can get an auto loan from the auto dealership. When you use your credit card you are borrowing money. You can a get a loan on your house which is called a mortgage.)***

2. Direct students to take out a sheet of paper and a writing instrument. Read the scenario below.

   When Joaquin sat down to negotiate his auto loan with the dealership, he was told that he could borrow $15,000 at 6% interest for 3 years. His payments would be $456 per month. Joaquin explained that he could not afford $456 per month and he wanted a better deal. The car dealer agreed to give Joaquin a better deal. He told him that he could bring down his monthly payments to $289 per month for 5 years.

3. Ask students to write down if they think this was a better deal and to explain why. After one minute have students share their answer and rationale with a partner. Then have a few students explain their answers. **(Sample responses: No. $289 for 5 years is 60 payments which is a total repayment cost of $17,340. $456 for 3 years is 36 payments which is a total of $16,416. Joaquin will pay $924 more with the second option. The dealership never said they would lower the interest rate.)**

Explain

4. Explain that for some people, making a lower payment is more important than getting a better deal. However, everyone should know exactly what they will pay for borrowing money. Display **Visual 8.2-1**. Tell students that these are the 3 things they should know about loans. *What is the APR (Annual Percentage Rate)? How does the interest rate affect the cost of credit? How does the loan length affect the cost of credit?*

Explain

5. Distribute **Activity 8.2-1** to each student and display as a visual**.** Read the introductory paragraph.

   According to www.Investopedia.com, Annual Percentage Rate is the annual rate that is charged for borrowing (or made by investing), expressed as a single percentage

number that represents the actual yearly cost of funds over the term of a loan. This includes any fees or additional costs associated with the transaction. Since each lender has different loan terms, the federal government requires lenders to disclose the APR. Bottom line: Always ask for the APR when getting a loan.

6. Have the students underline or highlight this part of the paragraph: *a single percentage number that represents the actual yearly cost.* Explain that to accurately compare interest rates, it is important to know the APR (Annual Percentage Rate). Since each lender has different loan terms, the federal government requires lenders to disclose the APR. Bottom Line: Always ask for the APR when borrowing money. Ask: *Which do you think will give a better deal; one with a high APR or a low APR?* ***(Low APR. When taking the percent of a number or value, a small percent will always result in a smaller value than a higher percent. In the case of the APR, this would be the interest paid by the borrower.)***

Explore

7. Have students look at the table on **Activity 8.2-1**. Then explain the details of the table listed below.

   a. The second column is an example of a common small loan that a financial institution might offer. The third column is an example of an easy access loan. These loans are sometimes called title loans or payday loans. They make it "easy" to get a loan.

   b. Point out that both of these loans are for $1000. The first loan will be paid back monthly over 12 months. The second one will be paid back in 14 days.

   c. This particular common small loan charges 7% and this particular easy access loan charges a $300 fee. The APR for the common loan is 7.22%. The calculation to get the APR is complicated, but the difference between 7% and 7.22% percentages comes from the way it was compounded. Which do you think would charge more interest: 7% compounded monthly or 7% compounded annually? ***(Compounded monthly, because interest is compounded every month.)*** To accurately compare these two compound methods, you should ask for the APR.

   d. What is the APR of the easy access loan? ***(782%)*** The high cost is due to the short time period of the loan and the fee. Again, this is a complicated calculation that you will not be required to learn. What is the bottom line? ***(Ask for the APR when getting a loan. Federal law requires that lenders provide this to you.)*** [Teacher note: For easy access loan APR calculations go to http://www.csgnetwork.com/apr4calc.html]

8. Explain that another method to compare loans is to calculate the total amount to be repaid to the lender. Ask students to calculate the repayment for the common small loan. ***(Common small loan = $86.63 x 12 = $1039.56.)*** Point out that the payment for the easy access loan is blank. Ask: *Why do you think it is blank*? ***(The entire amount borrowed and the financial fee is due in 14 days.)*** What is the payment for the easy access loan? ***(Easy access loan = $300 + $1000 = $1300.)*** Fill in the table as the values are discussed.

9. Point out that if the easy access loan cannot be paid back in 14 days, another $300 is charged. This will result in an APR of 1,564.28%. [Calculation completed at: http://www.csgnetwork.com/apr4calc.html.]

10. Have the students answer the questions below the table with a partner.

11. When students have completed the activity, have a few students share their answers.

Explore

12. Take students to a computer lab with Internet capabilities. Distribute **Activity 8.2-2** and a calculator to each student.

13. Tell students to go to http://www.bankrate.com/. Locate the list of calculators in the middle of the screen. Explain to students that when a person borrows money, each month's payment pays down the principal borrowed and interest for borrowing money. As the loan is paid down over a period of time, the principal is reduced. In other words, the amount of money owed to the financial institution decreases. This process in which the amount owed on the principal decreases is called Amortization. Click on the "Loan calculator and Amortization" located with the list of calculators.

14. Enter the data from the tables into the online calculator to determine the monthly payment. Demonstrate the first row. Then have students use their handheld calculator to calculate the total repayment and the interest paid. This is a self-directed lesson. Allow students to work independently or with a partner. The teacher should circulate and monitor progress. When students have completed the activity, have the students share their answers.

15. Give each student an index card. Ask them to write 3-4 important tips about loans that they would like to share with their guardian or parent. Then have a few students share these tips. ***(Use*** http://www.bankrate.com/ ***to calculate total loan repayment. Always ask for the APR when applying for a loan. APR is the percentage that should be used to compare loans. The higher the APR, the more interest will be paid on a loan. The longer the loan term with the same APR, the more interest will be paid on a loan.)*** Hang these tips on chart paper or bulletin board.

16. Ask students to share what they know about credit cards. ***(When you use a credit card to purchase an item, you are borrowing money from the credit card company. Some credit cards have an annual fee. If you don't pay the minimum payment by the grace period, you will be charged a late fee. If you don't pay off the balance by the grace period, you will pay interest. The grace period is typically 1-2 weeks after receiving the credit card statement. There is a minimum you must pay towards the balance each month.)***

Elaborate

17. Take students to a computer lab with Internet capabilities. Distribute **Activity 8.2-3** and a calculator to each student. Tell student to go to http://www.bankrate.com/. Locate the list of calculators in the middle of the screen. Click on the "Credit card payoff calculator" located with the list of calculator.

18. Tell students that in this lesson we will investigate the interest paid on a credit card if the balance is not paid off by the grace period. Direct them to take out a sheet of paper and number 1-3. Tell them that you are going to read some incomplete statistics and they are to guess the correct number.

    1) The average credit card debt for 2012 was ____. ***($15,204)***

    2) The average credit card interest rate for 2012 was ____. ***(16.98%)***

    3) The average credit card interest rate for students over 18 was _____. ***(17.42%)***

19. Have students share their guesses and record these on the board. Then share the actual data. Ask the students, how long do you think it would take to pay off $15,204 at 17.42% interest if the card holder made no additional purchases and paid $300 per month? Record their guesses on the board. Then have students enter these numbers into the credit card payoff calculator. ***(92 months)***

20. *If the credit card holder decided today to make the $300 payment every month for 92 months and decided not to make any additional charges on this card, what is the total this person would pay?* ***($300 x 92 = $27,600)*** *How much more is this than the original debt?* ***($12,396)*** *What does $12,396 represent?* ***(Interest paid)*** Point out that there was most likely additional interest paid prior to this day.

21. Ask students how this person could reduce his total repayment? ***(Pay more per month.)*** [Note to teacher: A few students may understand that they can ask the credit card company to reduce the interest or transfer the balance to a credit card with a lesser interest rate.]

22. Say: *Let's say he decides that he can pay $450 per month if he cancels his cable for television. How much do you think he could save?* Record students' guesses on the board. Then ask students to do the calculations. Instruct them to give a detailed explanation of the process they used to determine his savings. They should then raise their hand when they think they have the correct process and answer. ***(See sample response below.)***

    a. First, I entered $15,204 for credit card balance, $17.42 for interest rate and $450 payment amount per month on the credit card payoff calculator. The result was 47 months to pay off the balance.
    b. I then multiplied $450 x 47 months = $21,150. This is the total repayment.
    c. Since the payoff for the $300 month was $27,600, I subtracted $21,150 from this amount. The difference is $6450. This is the amount the card holder would save by increasing the monthly payment by $150.

23. If they have the correct answer and have the correct process direct them to complete **Activity 8.2-3**. For those who have incorrect answers, have student verbally explain their process. If it is incorrect guide them to the correct answer.

Evaluate/End

24. To close this lesson, pose the questions below.

    a. What percentage is used to compare loan rates? ***(APR)***
    b. What might cause a loan to have a high APR? ***(short loan term and fees)***
    c. How can someone easily calculate loan repayment? ***(Online calculators such as Bankrate.com)***
    d. What factors might increase the total repayment of a loan? ***(interest rate and length of loan)***
    e. What is an easy access loan? ***(It is a quick loan that has a short loan length and fees. They are sometimes called payday loans or auto title loans.)***

Extension: Governmental agencies and consumer watch groups are very concerned about the trouble consumers can get themselves into by getting easy access loans. Have the students visit these websites to see what these groups say about such loans:
http://www.consumer.ftc.gov/articles/0097-payday-loans
http://usgovinfo.about.com/od/consumerawareness/a/paydayloans.htm
http://www.responsiblelending.org/other-consumer-loans/car-title-loans/
http://consumerfed.org/pdfs/Car_Title_Loan_Report_111705.pdf
http://library.cppp.org/research.php?aid=754
After visiting these websites, have students make a list of the risks revealed.

Then have students visit some of these websites in which easy access loans are advertised.
For each website, ask students to note the following:

    a. All of these companies want your business. How does the overall look of the website make a person want to do business with this company? That is, what pictures do they use, and what kinds of statements do they make to make?
    b. What do the pictures they use tell you about the people they are trying to target as potential customer? That is, who do they seem to think their primary customers are?
    c. What do easy access loan institutions require to get approval for a loan from them?
    d. Does each website explain the risks involved in borrowing money?
    e. How do they disguise their high interest rates and make them seem more reasonable? What are they NOT telling the consumer?

Visual 8.2-1

Three Things You Should Know About Loans

- What is the APR (Annual Percentage Rate)?
- How does the interest rate affect the cost of credit?
- How does the loan length affect the cost of credit?

Activity 8.2-1 Name _____ Class Period _____

Decoding Loans with APR

According to Investopedia, "The annual rate that is charged for borrowing (or made by investing), expressed as a single percentage number that represents the actual yearly cost of funds over the term of a loan. This includes any fees or additional costs associated with the transaction." [Source: http://www.investopedia.com/terms/a/apr.asp]

Bottom line: **Always ask for the APR when getting a loan.**

	Common Small Loan	**Easy Access Loan**
Loan Amount	$1,000	$1,000
Term	12 months	14 days
Interest Rate	7%	n/a
Financial Fee	n/a	$300*
Annual Percentage Rate	**7.22%**	**782%**
Payment	$86.63 per month	
Total Interest/Fees		

*1st 14 day fee is $300, if renewed an additional $300 fee is required.

1. How much did each lender charge for borrowing $1000? _____

   _____

2. Explain which loan is a better deal? _____

   _____

3. In order for the easy access loan to have a lower APR than the common small loan, what would have to change? Explain. _____

   _____

Key 8.2-1 Name _____ Class Period _____

Decoding Loans with APR

According to Investopedia, "The annual rate that is charged for borrowing (or made by investing), expressed as a single percentage number that represents the actual yearly cost of funds over the term of a loan. This includes any fees or additional costs associated with the transaction." [Source: http://www.investopedia.com/terms/a/apr.asp]

Bottom line: **Always ask for the APR when getting a loan.**

	Common Small Loan	**Easy Access Loan**
Loan Amount	$1,000	$1,000
Term	12 months	14 days
Interest Rate	7%	n/a
Financial Fee	n/a	$300*
Annual Percentage Rate	**7.22%**	**782%**
Payment	$86.63 per month	$1300
Total Interest/Fees	*$1039.56*	$1000 + $300 = $1300

*1st 14 day fee is $300, if renewed an additional $300 fee is required.

1. How much did each lender charge for borrowing $1000? *(The common small loan company charged $39.56. The easy access loan charged $300.)*
2. Explain which is a better deal? *The common small loan because it has a lower APR.*
3. In order for the easy access loan to have a lower APR than the common small loan, what would have to change? Explain. *(The financial fee would have to be less than $39.56. If an APR of 7.22% results in a fee or interest of $39.56, any smaller amount would have a smaller APR.)*

Activity 8.2-2 Name _____ Class Period _____

Directions: On your computer, go to www.bankrate.com. Locate the list of calculators in the middle of the screen. Click on the "Loan calculator and Amortization" located with the list of calculator. Enter the data from the tables into the online calculator to determine the monthly payment. Use your handheld calculator to calculate the total repayment and the interest paid. Then answer the questions on the next page.

Loan Calculations

Loan Amount	Loan Term	Interest Rate per year (APR)	Monthly Payment	Total Repayment	Total Interest Paid
$10,000	2 years	5%			
$10,000	3 years	5%			
$10,000	4 years	5%			

1. To help analyze the table, you will need to calculate the last two columns using a calculator. First, explain the process below that you would use to calculate the Total Repayment and the Total Interest Paid. Then check with your teacher. When your teacher approves your process, complete the last two columns.

Total Repayment = _____

Total Interest Paid = _____

2. How much more interest was paid when the loan term increased from 2 years to 3 years?_____

3. How much more interest was paid when the loan term increased from 3 years to 4 years?_____

4. How much more interest was paid when the loan term increased from 2 years to 4 years?_____

5. In your own words, explain what this table reveals? _____

_____

Directions: On your computer, go to www.bankrate.com. Locate the list of calculators in the middle of the screen. Click on the "Loan calculator and Amortization" located with the list of calculator. Enter the data from the tables into the online calculator to determine the monthly payment. Use your handheld calculator to calculate the total repayment and the interest paid. Then answer the questions on the next page.

Loan Calculations

Loan Amount	Loan Term	Interest Rate per year	Monthly Payment	Total Repayment	Total Interest Paid
$10,000	3 years	4%			
$10,000	3 years	7%			
$10,000	3 years	10%			

6. How much more interest was paid when the interest rate increased from 4% years to 7%?_____

7. How much more interest was paid when the interest rate increased from 7% years to 10%?_____

8. How much more interest was paid when the interest rate increased from 4% years to 10%?_____

9. In your own words, explain what this table reveals? _____

_____

Key 8.2-2 Name _____ Class Period _____

Directions: On your computer, go to www.bankrate.com. Locate the list of calculators in the middle of the screen. Click on the "Loan calculator and Amortization" located with the list of calculator. Enter the data from the tables into the online calculator to determine the monthly payment. Use your handheld calculator to calculate the total repayment and the interest paid. Then answer the questions on the next page.

Loan Calculations

Loan Amount	Loan Term	Interest Rate per year (APR)	Monthly Payment	Total Repayment	Total Interest Paid
$10,000	2 years	5%	$438.71	$10,529.04	$529.04
$10,000	3 years	5%	$299.71	$10,789.56	$789.56
$10,000	4 years	5%	$230.29	$11,053.92	$1,053.92

1. To help analyze the table, you will need to calculate the last two columns using a calculator. First, explain the process below that you would use to calculate the Total Repayment and the Total Interest Paid. Then check with your teacher. When your teacher approves your process, complete the last two columns.

Total Repayment = *number of years x 12 months x monthly payment*

Total Interest Paid = *total repayment – loan amount*

2. How much more interest was paid when the loan term increased from 2 years to 3 years? *$260.52*

3. How much more interest was paid when the loan term increased from 3 years to 4 years? *$264.36*

4. How much more interest was paid when the loan term increased from 2 years to 4 years? *$524.88*

5. In your own words, explain what this table reveals? *Increasing the length of the loan will increase the interest paid.*

Directions: On your computer, go to www.bankrate.com. Locate the list of calculators in the middle of the screen. Click on the "Loan calculator and Amortization" located with the list of calculator. Enter the data from the tables into the online calculator to determine the monthly payment. Use your handheld calculator to calculate the total repayment and the interest paid. Then answer the questions on the next page.

Loan Calculations

Loan Amount	Loan Term	Interest Rate per year	Monthly Payment	Total Repayment	Total Interest Paid
$10,000	3 years	4%	$295.24	$10,628.64	$628.64
$10,000	3 years	7%	$308.77	$11,115.72	$1,115.72
$10,000	3 years	10%	$322.67	$11,616.12	$1,616.12

6. How much more interest was paid when the interest rate increased from 4% years to 7%? *$487.08*

7. How much more interest was paid when the interest rate increased from 7% years to 10%? *$500.40*

8. How much more interest was paid when the interest rate increased from 4% years to 10%? *$987.48*

9. In your own words, explain what this table reveals? *Increasing the interest rate will increase the interest paid.*

Activity 8.2-3 Name _____ Class Period _____

Directions: On your computer, go to www.bankrate.com. Locate the list of calculators in the middle of the screen. Click on the "Credit card payoff calculator." Use this calculator to answer the questions below.

Credit Card Payoff Calculator

1. Janelle has a credit card balance of $6444. The interest rate for this card is 16.8%. If she wants to pay it off in 12 months, how much should she pay each month?	2. Webster is paying 18.6% interest on his credit card. His credit card balance is $782. His sister is paying 9% interest and her balance is $888. They are both paying $40 per month. Who will have the greatest repayment? Explain your answer.
3. Hiro has a credit card balance of $11,900. The interest rate on this card is 19%. He can only pay $200 per month. Therefore Hiro transfers his balance to another credit card that charges 11% interest. How much will he save by changing to this new card?	4. Catalina has a credit card balance of $4234. The interest rate on this card is 15%. Currently she has budgeted to pay $75 per month. Her brother told her that if she would give up her weekly manicure, she could increase her monthly payment to $175. How much will she save if she takes her brother's advice?

5. You have been asked by the school newspaper to write an article titled, *Everything You Should Know about Credit Cards*. What are 3 things you would include in the article?

Key 8.2-3 Name _____ Class Period _____

Directions: On your computer, go to www.bankrate.com. Locate the list of calculators in the middle of the screen. Click on the "Credit card payoff calculator." Use this calculator to answer the questions below.

Credit Card Payoff Calculator

1. Janelle has a credit card balance of $6444. The interest rate for this card is 16.8%. If she wants to pay it off in 12 months, how much should she pay each month? *$587.11*	2. Webster is paying 18.6% interest on his credit card. His credit card balance is $782. His sister is paying 9% interest and her balance is $888. They are both paying $40 per month. Who will have the greatest repayment? Webster's sister Explain your answer. Webster: 24 months x $40 = $960 Sister: 25 months x $40 = $1000
3. Hiro has a credit card balance of $11,900. The interest rate on this card is 19%. He can only pay $200 per month. Therefore Hiro transfers his balance to another credit card that charges 11% interest. How much will he save by changing to this new card? *Card 1: 179 months x $200 = $35,800* *Card 2: 87 months x $200 = $17,400* *Savings: $18,400*	4. Catalina has a credit card balance of $4234. The interest rate on this card is 15%. Currently she has budgeted to pay $75 per month. Her brother told her that if she would give up her weekly manicure, she could increase her monthly payment to $175. How much will she save if she takes her brother's advice? *$75 payment: 98 months x $75 = $7,350* *$175 payment: 29 months x $175 = $5,075* *Savings: $2,275*

5. You have been asked by the school newspaper to write an article titled, *Everything You Should Know about Credit Cards*. What are 3 things you would include in the article?

Sample Responses:

- *The more you pay each month, the less interest you will pay in the long run.*
- *Use an online credit card payoff calculator so you know exactly how much interest you will pay.*
- *The greater the interest rate, the more you will pay.*
- *Interest rates on credit card calculators are very high. If you don't pay off your credit card every month, you will pay interest.*

Lesson Description

In this lesson, students will investigate the four most frequently used methods of payment: debit cards, credit cards, online banking and cash. Students will learn the advantages and disadvantages of methods of payment via story reading for three of the methods. Students will draw from their experiences as well as other students' experiences about using cash.

Texas Essential Knowledge and Skills (Target standards)

PFL Math 8.12E identify and explain the advantages and disadvantages of different payment methods

Texas Essential Knowledge and Skills (Prerequisite standards)

Math 8.1: Mathematical Process Standards

National Standards (Supporting standards)

CEE - Council for Economic Education

CEE 8.4: People choose from a variety of payment methods in order to buy goods and services.
CEE 8.4: People often make a cash payment to the seller of a good—called a down payment—in order to reduce the amount they need to borrow. Lenders may consider loans made with a down payment to have less risk because the down payment gives the borrower some equity or ownership right away. As a result, these loans may carry a lower interest rate.

PFL Terms

- Credit card
- ATM or Debit card
- Online banking
- Bank transaction
- Withdraw
- Deposit
- Overdraft fee
- Insufficient funds

Time Required

One 45-minute class

Materials Required

- A copy of **Activity 8.3-1** for each group of 3
- A copy of **Visual 8.3-1** and **8.3-2**
- A copy of **Activity 8.3-2** for each student
- Scissors
- Tape
- 2 blank sheets of paper per student
- 4-5 pencil colors for each group of students
- A sheet of chart paper for each group
- 4 markers for each group
-

Procedure

Engage

1. Place students in groups of 3. Distribute one copy of **Activity 8.3-1**, tape, and two pairs of scissors to each group. Have students cut out cards on **Activity 8.3-1**. Display **Activity 8.3-1** as a visual.

2. Tell students to sort the cards into two stacks. The first stack is various methods to purchase goods and services. The second stack will be short stories describing a purchase. Then have each student take turns reading the short description of a purchase. The group is to work together to decide which method of payment was used to make the purchase. Each method of payment should be matched with one description. Once all cards have a match, direct students to place a piece of tape across each pair of cards. Have different students share one pairing that was made. As the students share their answers, use the **Activity 8.3-1** visual to draw a line from the method of payment to the scenario. At this time do not comment if the pairing is correct or incorrect.

Explain

3. Display **Visual 8.3-1**. Tell students that this visual describes three of the methods of payment used in the previous activity. Ask students to share their description about cash. ***(Bills or coins that can be used to purchase items.)*** After all descriptions are read, students may make changes to their pairing of cards. Have different students read each method of payment. Then allow for students to correct their pairing. Below are the correct pairings.

    - Debit Card – 2
    - Online Banking – 5
    - Credit Card – 4
    - Check – 1
    - Cash – 3

4. Ask students if there are any other methods to pay for goods and services. ***(cashier's check, gift card, trade, layaway, installment payments)***

5. Ask students to explain how consumers decide which methods of payment to use to make purchases. Allow a few students to offer their suggestions***. (Sample responses: If someone doesn't have money in his or her account, they may use a credit card. Making a payment online is easier than writing a check and putting it in the mail. For some people, using cash may be the best method to make sure they don't spend more than what is in their checking account.)*** Then tell them that today we are going to analyze the advantages and disadvantages of common methods of payment. This will help them make better decisions when they have access to these methods of payments.

6. Write "insufficient funds" and "overdraft" on the board. These are new term students will need to understand before proceeding. Explain that insufficient funds occur when someone tries to purchase an item using a check or debit card without having enough money in his or her bank account.
   [Source: http://www.investopedia.com/terms/i/insufficient_funds.asp]
   An overdraft occurs when you write a check, make an ATM transaction, use your debit card to make a purchase, or make an automatic bill payment or other electronic payment for an amount greater than the balance in your checking account

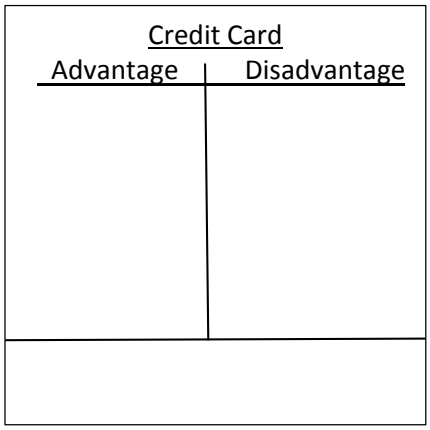
[Source: http://www.federalreserve.gov/consumerinfo/wyntk_overdraft.htm]

Explore

7. Give each student 2 sheets of paper. Give each group 4-5 pencil colors and a pair of scissors. Display **Visual 8.3-2**. Tell students that they are going to create an interactive notebook to keep their notes on each method of payment. Read the directions from the visual as you model the process for creating the interactive notebook.

8. Have students write their name on the upper right hand corner of the front cover and title the booklet: *Methods of Payment*. Instruct students to create an illustration with the pencil colors on the front cover that depicts the title. The teacher should continue modeling each step of the way.

9. Instruct students to open their interactive book and title the inside pages with the following: Credit Card, Debit Card, Online Banking and Cash. About 2 inches from the bottom of each page, draw a horizontal line across the width of the page. In the area between the page title and this line create two columns. Label column 1 "Advantages". Label column two "Disadvantages". Below is a sample of page 1.



10. Distribute **Activity 8.3-2** to each student. Tell the students that they will read stories about three of the methods of payment listed in their interactive notebook. As they read, they are to find clues that reveal advantages or disadvantages about the method of payment. Read the first story with the class. After each advantage or disadvantage is revealed, question students to help them disclose the advantage or disadvantage. Then have the students look at **Activity 8.3-1** and **Visual 8.3-1** for additional clues.

11. Instruct students to work with their group to find the advantages and disadvantages for the debit card and online payment. For the cash method, ask students to pull from their own experiences using cash to create a list of advantages and disadvantages. To help students think about advantages and disadvantages of using cash, use the questions listed below. Allow students to share an experience they had with cash.

    a. Have you ever purchased an item with cash then tried to return the item? Did you have a receipt?
    b. Did you ever hand a cashier a twenty and he or she gave you change for a ten?
    c. Did you ever start off the day with $20 and by the end of the day you only had $1

remaining? Did you remember how you spent the money?

d. Did you ever leave your money in your pocket and your parent washed your jeans? What happened to your money?

Elaborate

12. Once students have completed the lists of advantages and disadvantages, have each group brainstorm on what precautions consumers should consider when using each payment method. Instruct students to write these precautions on the bottom reserved section of each page of their interactive notebook.

13. Distribute 1 sheet of chart paper and 3-4 markers to each group. Instruct students to divide the chart paper into four quadrants. Title each quadrant by the four methods of payment listed in their interactive notebook. Then document everything listed on each page onto the chart paper. Below are sample lists.

Credit Card	
Advantage	Disadvantage
-easy to carry -easy to use -offer rewards -ability to pay for emergencies - *(see step #20)* can improve credit score with timely payments and maintaining a low balance	-too easy to overspend -may have annual fee -late payment can result in late fee -interest will be charged if balance is not paid within a certain time
To avoid interest, don't spend more than you can pay.	

Debit Card	
Advantage	Disadvantage
-easy to carry -easy to use -PIN protected *-(see step #19)* not responsible for unauthorized transactions after card is reported missing	-possible fee(s) -insufficient funds may result in overdraft fee -transaction may be denied if there are insufficient funds -can't purchase more than what is available
To avoid overdraft fees, keep track of your transactions.	

Online Banking	
Advantage	Disadvantage
-saves time -saves cost of stamps and trip to post office -ability to buy online	-using unprotected Internet can result in fraud -insufficient funds may result in overdraft fee
Always use a private Internet. To avoid fees, keep track of all transactions.	

Cash	
Advantage	Disadvantage
-easy to carry -can help stay within budget	-can be lost or stolen -easy to forget how it was spent -no proof of purchase other than receipt -can't make online purchases
Know how much money you start with each day. Keep receipt in case you need to return your purchase.	

14. Instruct students to hang the chart paper in designated areas around the room. Students will take their interactive notebook and a pencil and stand in front of their chart paper.

Once everyone is standing in the appropriate area, have groups rotate counter clockwise to the next chart. They are to compare the list of advantages and disadvantages shown on the chart with their own list. In their interactive notebook, they will check off items on the list in which they agree. They should add additional items to their list that are missing. Continue to instruct students to rotate every 2 minutes until all charts have been visited.

Explain

15. After students have visited all charts, direct them to return to their seats. Explain to students that there are multiple ways a credit card account number can be stolen; therefore credit card companies offer fraud protection. This means the card holder is not responsible for any unauthorized charges. Ask if this is an advantage or a disadvantage for a credit card. ***(Advantage)*** Instruct students to add this information in their interactive notebook under the advantage column on the page for credit cards. The teacher will model the entry.

16. Tell students that the Federal Reserve explains that many banks (as well as savings and loans and credit unions) offer "courtesy overdraft-protection," or "bounce coverage," plans so that your checks do not bounce and your ATM and debit card transactions go through. With these plans, you'll still pay an overdraft fee or a bounce coverage fee to the bank for each item. But you will avoid the merchant's returned-check fee and will stay in good standing with the people you do business with. [Source: Federal Reserve, http://www.federalreserve.gov/pubs/bounce/]

17. Ask*: On My Debit Card Story, the storyteller chose not get the overdraft protection. What happened when he or she had insufficient funds?* ***(The credit card transaction was denied because the account owner choose not have overdraft protection.)*** *In this case, would it have been better to have the overdraft protection?* ***(No. The account owner would have paid an extra fee for the two coffees.)***

18. *An overdraft occurs when there is not enough money in a bank account to cover a withdrawal, purchase or electronic payment. Financial institutions offer an overdraft protection service. This means that if there is not enough money in the account, the bank will authorize the withdrawal, purchase or electronic payment for a fee. Suppose you have an electronic payment of $50 scheduled to pay your cell phone service that is due tomorrow and you have a $60 balance in your bank account. Before the bank transfers your money for payment, you make a $20 purchase with your debit card. Now your balance is $40. If you have overdraft protection service, the bank will authorize the electronic payment of $50. Now you have negative $10. Because you do not have the funds to cover the scheduled payment, the bank charges you an overdraft fee of $30. What is your balance?* ***(negative $40)*** *The benefit of overdraft protection is that the bank pays your bill. This will avoid fees from the retailer. The retailer will not send a negative report to the credit bureaus.*

19. Explain that if you report an ATM or debit card missing before someone uses it, you are not responsible for any unauthorized transactions. If someone uses your debit card before you report it lost or stolen, your liability depends on how quickly you report it. [Source: Federal Trade Commission, http://www.consumer.ftc.gov/articles/0213-lost-or-stolen-credit-atm-and-debit-cards]

20. Explain to students that every consumer has a credit history that is maintained by credit bureaus in the form of a credit report. This credit report is a record of each consumer's credit use. Consumers who buy goods on credit and pay them off on time can show lenders that they can be trusted to meet their financial obligations. Paying off credit can give a consumer a better credit score, which will help him or her get credit when he or she wants to make a major purchase, such as a car. It will also help the consumer get better interest rates when applying for a loan. Ask students if this is an advantage or disadvantage? ***(Advantage)*** Instruct students to add this information to their interactive notebook under the advantage column on the page for credit cards. The teacher will model the entry.

Evaluate/End

21. To close this lesson, lead a class discussion by posing the questions below.

    a. For which methods of payment is the consumer using his or her own money? ***(debit card, online banking, and cash)***

    b. For which method of payment is the consumer borrowing money? ***(credit card)***

    c. What precautions should a consumer consider when using a credit card? ***(Sample responses: Don't purchase more than you can pay. You are borrowing money to pay for the purchase so be sure to pay your bill on time. If you don't pay off the balance, you will pay interest.)***

    d. What precautions should a consumer consider when using a debit card? ***(Sample response: To avoid an overdraft fee or to avoid a purchase denial, keep track of your transactions.)***

    e. What precautions should a consumer consider when using an online bank? ***(Sample response: To avoid fraud, keep your account information secure. To avoid an overdraft fee, keep track of your transactions.)***

    f. What precautions should a consumer consider when using cash? ***(Sample response: Keep your receipt for proof of purchase. Keep your money in a safe place.)***

Extension

Have students enhance their interactive notebook by researching the websites below.

For more information on Debit Cards, go to:
http://www.federalreserve.gov/consumerinfo/wyntk_overdraft.htm

For more information on Credit Cards, go to:
http://www.federalreserve.gov/creditcard/

For information on Installment Plans, go to:
http://www.wisegeek.com/what-is-installment-buying.htm

Activity 8.3-1

Directions: Cut cards apart. Match numbered card with the correct method of payment.

ATM or Debit Card	**1:** On the 25th of every month, Tamesha pays her rent by writing the amount on a small official preprinted note that contains information about a checking account. She puts this note in an envelope and drops it off at the post office.
Online Banking	**2:** Inga goes to the store to buy groceries. To pay for the groceries, she slides her card through a card reader and enters a special code.
Credit Card	**3:** On the 30th of every month, Maribel pays her rent by first driving to bank to make a withdrawal and then driving to the real estate agency to make the payment.
Check	**4:** It's time for Binh to get the oil changed in his car. The payment for the oil change shows up on his monthly bill for the card.
Cash	**5:** On the 28th of every month, Blake pays his rent by logging on to the computer. He goes to his bank's website and enters his password for access. Then he types in the needed information to make the payment.

Visual 8.3-1

Methods of Payment

Credit Card

A credit card is a small plastic card issued by a financial company. This card has a magnetic strip on the back. When the card is swiped through a card reader, the owner of the card is borrowing money from the financial company to make the payment. Here's what happens when the card is swiped:

- The amount of the purchase is transferred from the financial company who issued the credit card to the store's account. The owner of the credit card will pay for all purchases charged to the card soon after the bill or statement arrives.

Purchases using a credit card can also be made on the Internet. Inputting the credit card information allows the credit card holder to borrow money from the credit card company to make the purchase.

ATM or Debit Card

An ATM or debit card is a small plastic card issued by a financial institution. This card has a magnetic strip on the back. The card is swiped through a card reader and a Personal Identification Number (PIN) is entered. This process will allow for the owner of the card to make a payment or withdraw funds. The money is immediately transferred from the owner's checking account.

Online Banking

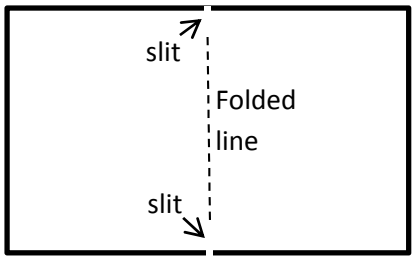
An electronic payment is a process of using the Internet to make a payment. This process requires that the account owner input secure information via the Internet. Accessing his or her bank account to make a payment means that the money will be transferred out of the account for payment.

Visual 8.3-2

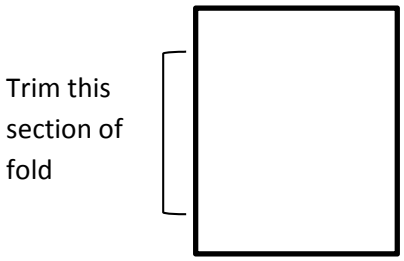
Steps to Create an Interactive Notebook

Materials: 2 sheets of paper and a pair of scissors.

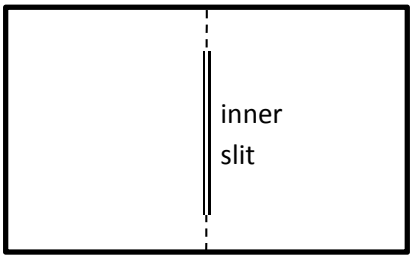
1. Stack two sheets of blank paper together and fold along the shortest line of symmetry.
2. Open one sheet of paper. Cut two 1 inch slits along the outer edge of the folded line as shown below.



3. Keep the second sheet folded. Using a pair of scissors, trim the fold starting 1 inch from the top and end 1 inch from the bottom. When the page is open, there will be a slit down the middle as shown below.



Second page
when folded



Second page
when opened

4. Open the first page with the outer slits. Roll this page around its longest line of symmetry. Slide rolled page through the slit of the second page. When the rolled paper is inserted halfway through the slit, open the page. The outer slits will be aligned with the fold of the second page to create a booklet.

Activity 8.3-2

My Credit Card Story

I was so excited when I got my first credit card. I no longer had to carry that bulky check book. Using a credit card was so easy. All I had to do was swipe it, and I could buy anything I wanted. The best feature is the rewards program. For every $1000 I charge to the card, I get one $25 gift card to the restaurant of my choice.

Then I received my first statement. I knew that the maximum I could charge was $500, but how did I already get so close to this amount? I owe $496.22. To make matters worse, the credit card company included my annual fee of $35 in this bill. There was no way I could pay this bill. After paying my rent, cell phone, and utilities, I only had $215.00 remaining in my account. I needed at least $100 for food. Therefore I could only make a payment of $115 to the credit card company.

The next month I only used my card once. Bruno, my dog, got very ill. The vet bill was $200. Since I did not have $200 in cash nor in my checking account, I decided to charge this bill to my credit card.

When I received my next bill, I was shocked. This bill was for $515.50. First, I noticed there was a late fee for $40. I guess I should have looked more carefully for the due date. Then I noticed that the credit card company charged me $94.28 in interest. My mother warned me that credit cards have high interest rates. It took me 7 months to pay off this debt. I paid $188.78 in interest and fees in addition to the amount I owed.

My Debit Card Story

When I was 18, I enrolled at the local junior college and got a part-time job. After I received my first paycheck, my employer encouraged me to get a checking account so that I would have automatic deposit. This means that as soon as my paycheck was ready, the money would be transferred to my account.

I used my first paycheck to open a checking account at a bank near my place of employment. Once I opened my checking account, the clerk gave me an option of getting a check book, debit card or both. I chose to get a debit card, because it was so easy to use. But there was a price to pay for this convenience. I had to pay a $5 monthly fee.

The clerk explained that I still needed a check register to track my withdrawals and deposits. He explained that a withdrawal was any action that transferred money out of my account such as a purchase using my debit card. A deposit is the action of putting money into my account.

The clerk offered me overdraft protection. If I accepted overdraft protection, it would cover any purchases I make even if I don't have the funds to cover it. With this feature, I would be charged a $30 overdraft fee for each time I have insufficient funds to cover a purchase. Without overdraft protection, my card would be declined each time I have insufficient funds to cover a purchase. I choose to not have overdraft protection with my debit card.

He also asked me to create a Personal Identification Number (PIN) that only I would know. When I withdraw cash or use the card for a purchase, I enter this PIN. This will protect me if someone steals my card and tries to withdraw cash or make a purchase.

The first week I had the card, I used it to make all my purchases. I took my girlfriend to a coffee shop to buy a drink. We each ordered a coffee. I slid my card through the card reader and entered my PIN. "Denied," exclaimed the clerk. "Oh this is awkward", I thought to myself. I asked my girlfriend to wait for me while I went to the nearest ATM. Panic hit me when the ATM also denied me cash. My last resort was to call my mom and ask her to bring me enough money to cover the purchase. I guess from now on, I will use my check register to keep track of withdrawals and purchases.

My Online Banking Story

Having online banking saves me lots of valuable time. When I'm ready to pay my monthly bills, I simply log on to my bank's website by entering my account number, a password, and a security code. Then I select the bills that are due. I enter the amount I want to pay for each and the date that I want each bill paid. Not only do I save valuable time, but I save the cost of stamps, envelopes and the gas driving to the post office.

At my bank, the standard overdraft practice for online banking includes overdraft protection. This means that if I pay a bill online and do not have sufficient funds, I will be charged $25 for each transaction.

Last week, I was reviewing my checking account balance online. I saw that I had $100 remaining in my account so I decided to withdraw cash and go eat with my friends. The next day, I received an email notice that I was overdrawn on my account. This meant that I spent more than my balance. I quickly logged onto my account to investigate the matter. I noticed that my Internet bill was paid that morning. I forgot to record this payment on my check register. This resulted in an overdraft fee of $20.

One day, I was at a coffee shop surfing the web. I found the perfect backpack. Since there was only one left, I decided to make an online purchase. To do this, I had to enter my bank's routing number and my bank account number. Two days later, I checked my account. There were multiple purchases that I did not recognize. I soon realized that someone stole my account information. It must have been when I used the unsecure Internet at the coffee shop. I immediately called my bank to inform them of the fraud. The bank froze all payments. They helped me set up a new account and a new password. I lost over $300 due to my carelessness, but it could have been worse.

Lesson Description

The students are presented with real life situations in which young people have to make important decisions about their future. Students use an online tool to examine how the cost of living affects students' financial situations. Students read about responsible financial behaviors and match these behaviors with given situations. The students evaluate various financial situations and make financial decisions.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 8.12F** analyze financial situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 8.1A:** apply mathematics to problems arising in everyday life, society, and the workplace

National Standards (Supporting standards)

CEE - Council for Economic Education

- **CEE Earning 8.2:** People make many decisions over a lifetime about their education, jobs, and careers that affect their incomes and job opportunities.
- **CEE Earning 8.4:** People with less education and fewer job skills tend to earn lower incomes than people with more education and greater job skills.
- **CEE Earning 8.4:** Investment in education and training generally has a positive rate of return in terms of the income that people earn over a lifetime.
- **CEE Using Credit 8.4:** Borrowers who use credit cards for purchases and who do not pay the full balance when it is due pay much higher costs for their purchases because interest is charged monthly. A credit card user can avoid interest charges by paying the entire balance within the grace period specified by the financial institution.

PFL Terms

- Wage
- Expenses
- Budget
- Credit card
- Debit card
- Overdraft fee
- Loan
- Interest

Time Required

One 45-minute class period

Materials Required

- A copy of **Visual 8.4-1**
- A copy of **Handout 8.4-1** for each student
- A copy of **Activity 8.4-1** for each student
- A copy of **Activity 8.4-2** for each student
- A projection devise and Internet for the teacher

Procedure

Engage

1. Say: *Each one of you makes hundreds of decisions every day. You might decide what shoes to wear; what you will eat for lunch; or what song you will listen to next. Some of the decisions you make might affect other areas of your life. For example, if you choose not to set your alarm at night, you might miss the school bus the following day. If you choose to clean your room, you might find your missing wallet. Today, we are going to evaluate financial decisions. Some financial decisions people make are dependent on their financial situation. Responsible financial decisions are made by determining the issues, researching options and then making an informed and thoughtful decision.*

2. Divide the class into groups of 4. Display **Visual 8.4-1** and read the story to the students. Instruct students to think about the questions posed at the end of the story. Tell students that each group member will have 1 minute to tell the group what he/she thinks Kyle should do and why. The teacher will give a signal at the end of each minute.. At the end of 4 minutes, groups will have 2 additional minutes to discuss Kyle's future plans.

3. Lead a class discussion by asking the questions below.

   a. Who thinks Kyle should decline the assistant manager position and go to college full time? What outcomes might come from this decision? ***(Sample response: If Kyle gets a degree or certified for a trade his potential for making more money in the future will increase.)***

   b. Who thinks Kyle should accept the assistant manager position? What outcomes might come from this decision? ***(Sample response: If Kyle accepts this position, he will make more money now.)***

Explore

   c. Explain to students that some people are financially successful without a college degree or career school certification. For most of the Texas workforce, the workers who earn more have a college degree. With Kyle's job, there is no guarantee for advancement. Consider what would happen if Kyle chooses to get his own apartment. Will the income from this job provide for all of his necessities? Using a projector and the Internet, the teacher will go to http://www.familybudgets.org/. Tell students that this tool will show what it takes for families to make ends meet in each of the Texas metro areas. The teacher should follow the steps below.

      1) Choose the metro area in which the class lives.
      2) Since Kyle's place of employment will pay for his medical premiums, choose *Employer pays all of one adult's premium and half of premium for rest of family.*
      3) Assuming that Kyle will get an apartment alone, choose 1 adult.
      4) Assuming that Kyle has no children, choose 0 for number of children.
      5) Since it is responsible to save for emergencies, choose *Save for emergencies*.

4. The results, based on the metro area chosen, will be $9 - $11. Explain that this hourly wage will cover only the basic needs. Scroll down the screen to display the Basic Expenses that are included. Point out that the Basic Expenses do not include cable, Internet, cell phone or entertainment. Have students compare these results to Kyle's wage if he accepts the assistant manager's position. Ask students if Kyle will be able to afford cell phone service, Internet, television service, or entertainment. ***(Sample***

response: He might be able to afford some of these items if he gets a roommate. However, Kyle will most likely live on a very tight budget.)

Explain

5. Explain to students that when making a decision, it is important to consider all the options. A financially responsible decision includes evaluating your options. Because each individual has his/her own set of circumstances, there is no one correct answer.

Explore

6. Distribute **Handout 8.4-1** and **Activity 8.4-1** to each student and have them read **Handout 8.4-1**. Instruct students to read the situations on **Activity 8.4-1** and identify the responsible behavior from **Handout 8.4-1** that most accurately describes each situation.

7. Have the students compare their answers with their group. Allow students to make changes if needed.

8. Ask students to share answers. Use the **Key 8.4-1** to check students' answers.

Elaborate

9. Distribute **Activity 8.4-2** to each student. Explain that this activity presents financial situations. Students are to examine each situation with their group and answer the questions below each financial situation.

10. Name each group A, B, C, etc. Have students in each group number 1 to 4. Ask all the even numbered students to take **Activity 8.4-2** and their answer sheet and move to the group that follows their group name in the alphabet. For example students number 2 and 4 from group A will move to group B. Students number 2 and 4 from group B will move to group C. Student numbers 2 and 4 from the last lettered group will move to group A.

11. Direct the even numbered students to explain their answer for numbers on **Activity 8.4-2** 1 and 2. Then have the odd number students explain their answer for numbers 1 and 2. If the students hear a better solution to the situation, have them make a note on their paper.

12. Instruct even numbered students to rotate again to the next letter group.

13. Direct the even numbered students to explain their answer for numbers 3, 4, and 5. Then have the odd number students explain their answers for numbers 3, 4, and 5. If the students hear a better solution to the situation, have them make a note on their paper.

14. Instruct even numbered students to return their original group. If any group member heard a better response than the original, they are to share with their group.

15. Have at least two students share the best solution for each situation. See **Key 8.4-2** for sample responses.

Evaluate/End

16. Distribute exit tickets for students to complete before leaving the classroom. As students exit the classroom, they hand the teacher completed exit ticket. Consider creating a bulletin board with the exit tickets to serve as a reminder of financial responsible decisions.

Visual 8.4-1

Kyle's Dilemma

Kyle graduated from high school in May. During the spring semester, Kyle completed his college application and submitted his Free Application for Federal Student Aid (FAFSA) online. FAFSA determines a student's eligibility for financial assistance towards college expenses.

Kyle decided to work full time during the summer selling cell phones at The Every Cell store. Two weeks before college started, Kyle received notification that he was eligible for partial tuition assistance. The next day at work, he reminded his boss that he will only be able to work 20 hours per week when school starts. His boss was very happy with Kyle's work ethics. He showed up on time every morning and worked late on nights when they were busy. His boss knew that sales would go down once Kyle started to work part-time. After very little consideration, his boss made a proposal. If Kyle continues working full time, she will make him the assistant manager and increase his hourly wage from $8.50 per hour to $11.00 per hour. In addition, the company will pay Kyle's medical premiums.

How might accepting the assistant manager position affect Kyle's future?

How might declining the assistant manager position affect Kyle's future?

What would you do if you were in Kyle's position? Explain.

What do you think Kyle should do? Explain.

Handout 8.4-1

Responsible Financial Behavior

Financial responsibility is the action one takes to make decisions for today as well as plan for the future while avoiding overspending or "throwing money away".

Planning for the Future

Invest in yourself. According to the National Center for Education Statistics, in 2010, young adults ages 25–34 with a bachelor's degree earned 114 percent more than young adults without a high school diploma or its equivalent, 50 percent more than young adult High school completers, and 22 percent more than young adults with an associate's degree. [Source: National Center for Education Statistics, http://www.bls.gov/emp/ep_chart_001.htm] Investing hard work, time and money in a college education can result in a higher paycheck. The cost for college is expensive. Be smart about how you pay for college or career school. Know the cost of loans associated with post-secondary education.

Pay yourself first. Before spending your paycheck, deposit a set amount into savings for emergencies, large purchases, or for career school or college. This will remove the temptation to spend the money budgeted for your savings.

Save early and save often. The more you save now, the more you will have for your long term goals.

Avoid Overspending

Live within your means. Create a budget that includes a category for saving. If expenses exceed net income, use the budget to determine where expenses can be reduced.

Avoid impulsive spending. Know the difference between needs and wants. Needs are what a person requires for survival. Wants are things that are desired. A person might need a vehicle to get to work, but a sports car is a want. The basic economic problem is that consumers have unlimited wants and limited resources.

Be a smart shopper. Compare prices and consider quality of the product before making a purchase. Watch for products to go on sale. Consumers should match the type of product with his/her needs. For instance, a cell phone that offers more capabilities than is needed will cost more. Shop for a model that offers the components that best match your needs and wants while staying within your budget.

Avoid "throwing away" money:

Shop around for a credit card. Before applying for a credit card, compare fees and interest rates to find a card that meets your needs. If you know you are going to pay off your credit card monthly, choose low fees over low interest. If you know you may carry a balance, choose a credit card with a low interest rate.

Pay your bills on time. To avoid paying late fees, pay your bills on time. Negative information, such as late payments, stays on your credit report for 7 years and increases your interest rate for loans.

Pay off your credit card each month. To avoid paying interest, pay off your credit card each month. Interest will be charged for the remaining balance.

Keep track of your spending. Avoid overdraft fees with your bank account by keeping track of your balance. Keeping a check register with all your transactions will ensure that you do not overdraw your account.

Read notices sent from financial institutions. Banks and credit unions will attempt to contact you if you have an overdraft fee.

Activity 8.4-1 Name _____ Class Period _____

Directions: For each situation below, identify which responsible financial behavior(s) from Handout 8.4-1 is modeled.

Situation	**Responsible Financial Behavior**
Cara has a bank register. She records all her transactions including debit card purchases, electronic payments, and deposits. After each transaction, Cara balances the bank register.	
Daniel wants to purchase a larger house. He could get a house loan but he might not be able to afford the monthly payments. He decides it is not something he can afford at this time.	
Edwin is graduating from college. He has accumulated $15,000 in student loans; however, he will now be making $20,000 more per year than he could have made without a Bachelor's degree.	
Jayden uses his credit card to purchase gas, groceries, and for eating out. He has a balance of $311.56. Jayden decides not to purchase concert tickets so he can pay off his credit card.	
Arielle has her bank transfer $50 from each paycheck into her savings account. That way, she never sees the money and will not spend it. Her savings account is growing quickly.	

Key 8.4-1 Name _____ Class Period _____

Directions: For each situation below, identify which responsible financial behavior from Handout 8.4-1 is modeled.

Situation	**Responsible Financial Behavior**
Cara has a bank register. She records all her transactions including debit card purchases, electronic payments, and deposits. After each transaction, Cara balances the bank register.	Keep track of your spending.
Daniel wants to purchase a larger house. He could get a house loan but he might not be able to afford the monthly payments. He decides it is not something he can afford at this time.	Live within your means.
Edwin is graduating from college. He has accumulated $15,000 in student loans; however, he will now be making $20,000 more per year than he could have made without a Bachelor's degree.	Invest in yourself.
Jayden uses his credit card to purchase gas, groceries, and for eating out. He has a balance of $311.56. Jayden decides not to purchase concert tickets so he can pay off his credit card.	Payoff your credit card each month.
Arielle has her bank transfer $50 from each paycheck into her savings account. That way, she never sees the money and will not spend it. Her savings account is growing quickly.	Pay yourself first. or Save early and save often.

Activity 8.4-2 Name _____ Class Period _____

Directions: Each of the following involves making a financial decision. Read each scenario and record your answer on a blank sheet of paper.

1. Nicholas wants a new cell phone. Rather than waiting until payday, he decides to get a payday loan of $200. He promises to repay the loan on payday plus a $20 fee. The loan company explains that if he is unable to pay the loan by this date, they will give him an extension and only charge an additional $20. The day before he is to repay the loan, a pipe in his bathroom breaks. Since he had to pay for the plumbing repair he cannot repay the loan. It takes Nicholas 8 weeks to repay the original $200 he borrowed. His total repayment was $280.

   What could Nicholas have done differently to avoid the high fees?

2. Penny is buying a used car for $6000. She has $2000 in her savings. Penny plans to borrow the entire $6000 at 5% and use her savings to go on a vacation. Penny's best friend tells her that this is not a financially responsible decision.

   Explain the best friend's rationale as to why this is not the best financial decision for Penny.

   Write a plan that will allow Penny to purchase the car and go on a vacation.

3. Samuel's mother gave him $5.00 to buy a 20 ounce box of WakeUp Cereal for $3.99. When he got to the store, Samuel decided to buy two boxes of the 11 ounce cereal for $1.90 each.

   Did Samuel make a responsible choice? Justify your answer.

4. Dillon has a savings account, a debit card for his checking account and a credit card that charges 18% interest. He is saving to buy a laptop that costs $900. So far he has saved $710.00 in his savings account. He has been able to deposit $75.00 every month into this savings. While reading the newspaper ads, he noticed that the computer is now on sale for 20% off. The tax rate in his city is 8.25%.

   Write a plan for Dillon to purchase the laptop and spend the least amount of money.

5. Anthony wants a new vehicle. After running a credit report on Anthony, his bank told him he does not qualify for a loan because he has a very low credit score. The loan officer explains to Anthony that a low credit score typically means that the person has large debt or history of paying bills late.

   Which of the following would be responsible financial decisions for Anthony?

   a. Create a budget to determine where he can reduce his spending.
   b. Ask his parents to loan him the money for a car.
   c. Apply for a loan at another loan institution.
   d. Stop using his credit card until he can pay off the balance each month.
   e. Ask the credit card company if his interest rate can be reduced.
   f. Increase his monthly payments to the credit card company.
   g. Get another credit card.

Key 8.4-2 Name _____ Class Period _____

The answers below are sample responses.

1. Nicholas wants a new cell phone. Rather than waiting 2 weeks till payday, he decides to get a payday loan of $200. He promises to repay the loan on payday plus a $20 fee. The loan company explains that if he is unable to pay the loan by this date, they will give him a 2 week extension and only charge an additional $20. The day before he is to repay the loan, a pipe in his bathroom breaks. Since he had to pay for the plumbing repair he cannot repay the loan. It takes Nicholas 8 weeks to repay the original $200 he borrowed. His total repayment was $280.

   What could Nicholas have done differently to avoid the high fees? *Nicholas could have waited until he saved $200 before he purchased the phone. If Nicholas had an emergency savings account, he might have had money to pay for the pipe.*

2. Penny is buying a used car for $6000. She has $2000 in her savings. Penny plans to borrow the entire $6000 at 9% and use her savings to go on a vacation. Penny's best friend tells her that this is not a financially responsible decision.

   Explain the best friend's rationale as to why this is not the best financial decision for Penny. *Penny will pay interest on $6000. If she uses the $2000 towards the car payment, she will only have to borrow $4000. Paying interest on $4000 at 9% will be less than paying interest on $6000 at 9%.*

   Write a plan that will allow Penny to purchase the car and go on a vacation. *Penny can use the $2000 towards the car payment now and save for a vacation. Penny can use $1500 towards the car payment and go on a less expensive vacation.*

3. Samuel's mother gave him $5.00 to buy a 20 ounce box of WakeUp Cereal for $3.99. When he got to the store, Samuel decided to buy two boxes of the 11 ounce cereal for $1.90 each.

   Did Samuel make a responsible choice? Justify your answer. *Yes. The 20 ounce box of cereal costs about 20 cents per ounce. The box of 11 ounce cereal costs about 17 cents per ounce. Samuel will pay $3.80 for 22 ounces. This is a lesser price for more cereal than the 20 ounce box for $3.99.*

4. Dillon has a savings account, a debit card for his checking account and a credit card that charges 18% interest. He is saving to buy a laptop that costs $900. So far he has saved $710.00 in his savings account. He has been able to deposit $75.00 every month into this savings. While reading the newspaper ads, he noticed that the computer is now on sale for 20% off. The tax rate in his city is 8.25%.

   Write a plan for Dillon to purchase the laptop and spend the least amount of money. *The sale price for the laptop will be $720 and $779.40 with tax. Dillon is short $69.40. Therefore, he could purchase the laptop with his credit card now. When his credit card statement comes in, he should have the additional $75 to pay the card off in full.*

5. Anthony wants a new vehicle. After running a credit report on Anthony, his bank told him he does not qualify for a loan because he has a very low credit score. The loan officer explains to Anthony that a low credit score typically means that the person has large debt or history of paying bills late.

   Which of the following would be responsible financial decisions for Anthony? *a, d, e, f*

   a. Create a budget to determine where he can reduce his spending.
   b. Ask his parents to loan him the money for a car.
   c. Apply for a loan at another loan institution.
   d. Stop using his credit card until he can pay off the balance each month.
   e. Ask the credit card company if his interest rate can be reduced.
   f. Increase his monthly payments to the credit card company.
   g. Get another credit card.

Exit Ticket

The most important thing I learned from today's lesson is

Three responsible financial behaviors are
1.
2.
3.

Name: Period:

Exit Ticket

The most important thing I learned from today's lesson is

Three responsible financial behaviors are
1.
2.
3.

Name: Period:

Exit Ticket

The most important thing I learned from today's lesson is

Three responsible financial behaviors are
1.
2.
3.

Name: Period:

Exit Ticket

The most important thing I learned from today's lesson is

Three responsible financial behaviors are
1.
2.
3.

Name: Period:

Lesson Description

Students will analyze data to determine the relationship between level of educational attainment and weekly earnings and the relationship between level of educational attainment and unemployment rates.

Students will calculate the cost of a college education using online tools while learning about financial aid and the importance of Free Application for Federal Student Aid (FAFSA).

Students will devise a savings plan for college.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 8.12G:** Estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the 1st year of college.

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 8.1A:** apply mathematics to problems arising in everyday life, society, and the workplace
- **Math 8.5D:** use a trend line that approximates the linear relationship between bivariate sets of data to make predictions
- **Math 8.5H:** identify examples of proportional and non-proportional functions that arise from mathematical and real-world problems

National Standards (Supporting standards)

- **CEE Savings 8.7:** The value of a person's savings in the future is determined by the amount saved and the interest rate. The earlier people begin to save, the more savings they will be able to accumulate, all other things equal, as a result of the power of compound interest.

CEE - Council for Economic Education

PFL Terms

- Occupation
- Earnings
- Savings
- Loan
- Inflation

Time Required

Two 45-minute class periods

Materials Required

- A copy of **Handout 8.5-1** and **8.5-2** for each student
- A copy of **Activity 8.5-1** for each student
- A computer and internet access for each student
- A calculator for each student

Procedure

Engage

1. Ask students to think about the college or career school they would like to attend. Allow the students 3 minutes to consider the college or career school of their choice and to share this with their neighbor.

2. Ask students to use their thumbs to show whether they know how much it costs to attend the college of their choice for one year.

   a. Thumbs up: I know how much it costs to attend the college of my choice for one year.

   b. Thumbs to the side: I can make an educated guess about how much it costs to attend the college of my choice for one year.

   c. Thumbs down: I have no idea how much it costs to attend the college of my choice for one year.

3. Ask students to use their thumbs to show whether they know what occupation they plan to pursue.

   a. Thumbs up: I know what occupation I want to pursue.

   b. Thumbs to the side: I have a few ideas of occupations I may want to pursue.

   c. Thumbs down: I have no idea what occupation I want to pursue.

Explore

4. Distribute **Handout 8.5-1** and a calculator to each student. Display Chart 1 of **Handout 8.5-1**. Tell students that the bar graph from the Bureau of Labor and Statistics compares the levels of education with the median weekly earnings for people 25 years and older for 2012. Earnings are for full-time wage and salary workers. Use the bottom portion of the handout to explain each level of education. Ask students the questions below.

   a. What is meant by median weekly earnings in this bar graph? ***(If you ordered all the weekly earnings from least to greatest for workers 25 years or older for the year 2012, it is the middle weekly earnings.)***
   b. What is the difference between the median weekly earnings of a worker with a Bachelor's degree and a worker with an Associate's degree? ***($1066 - $785 = $281 per week)***
   c. What is the difference between the median annual earnings of a worker with a Bachelor's degree and a worker with an Associate's degree? ***($281 x 52 weeks = $14,612)***
   d. Assuming that these workers work for 30 years and earn the same amount each year, how much more would a worker with a Bachelor's degree earn over a worker with an Associate's degree? ***($14,612 x 30 years = $438,360)***

5. Work with a partner to calculate the difference in earnings over 30 years for a worker with a Bachelor's degree and a worker with a high school diploma? ***($1066 - $652 = $414; $414 x 52 weeks = $21,528; $21,528 x 30 years = $645,840)***

6. Work with a partner to write a statement that summarizes the bar graph. ***(Sample response: The more education a person has the more that person will earn annually.)***

7. Display **Handout 8.5-2**. Tell students that the bar graph from the Bureau of Labor and Statistics compares the levels of education with the unemployment rate for people 25 years and older for 2012. Ask students the questions below.

   a. Which two groups of people had the lowest unemployment rate? (***People with a Doctoral degree and a Professional degree.)***
   b. Which group of people had the highest unemployment rate? ***(People with less than high school diploma.)***
   c. Work with a partner to summarize this bar graph. ***(Sample response: People with less education have a higher unemployment rate.)***

8. Take students to a computer lab with Internet connection. Distribute **Activity 8.5-1** to each student. *(Note to teacher: A key is not provided since college cost will change year to year. A 2013-2014 sample is provided.)*

9. Read the Notice of Privacy to students.

   You will not be asked to enter any personal information during this lesson. This activity is designed to show how to calculate the cost of college.

Explain

10. Read the types of financial aid on part A of **Activity 8.5-1** or show the video at http://studentaid.ed.gov/types.

11. Direct students' attention to part B of **Activity 8.5-1**. Explain to students that this part of the activity will demonstrate how to use online tools to estimate college cost.

12. Prepare students for a Think-Pair-Share activity. Ask: *What factors affect the cost of college?* Direct students to list these factors for number 1 of part B on **Activity 8.5-1**. Next have students explain the factors to a neighbor. Finally have a few students share one item on their list with the class. The teacher should write these factors on the board. ***(Sample responses: the length of time a student is in college, the number of classes a student takes, the amount of aid a student receives, the type of college a student attends, where the student lives during his or her college years)***

Explore

13. Read the explanation for the next section of Part B on **Activity 8.5-1.**

    Use the fictional character below to practice calculating the cost of college.

    Johnny lives in Alvin, Texas and is a senior at Alvin High School. He plans to get a Bachelor's degree at the University of Houston. To better plan for college, he would like to know the following.

    - What is the cost to attend 4 years at University of Houston?
    - What is the cost to attend Alvin Community College for the first 2 years of college then transfer to the University of Houston?
    - Is it more affordable to live at home, on campus?

14. Tell students to go to http://www.collegeforalltexans.com. Explain to students that they will use the *College for All Texans* website and the *bigfuture by The College Board* website to help Johnny answer these questions.

15. Direct students to follow steps 2-6 independently. For classes that need additional guidance, model each step for students.

16. Explain that the results will produce the cost for the upcoming school year. Below are the results for the 2013-2014 school year.

2013-2014 Estimated Costs and Aid Package:		
1. College:	University of Houston	Alvin Community College
2. Where you will live while attending college:	On campus	Live at home
3. Cost of Attending	**Total Cost $23638** Tuition & Fees $9888 Room & Board $8600 Books $1200 Other $3950	**Total Cost $10477** Tuition & Fees $1791 Room & Board $2686 Books $1710 Other $4290
4. Median Grant	$12000	$2350
5. Estimated grant and/or scholarship assistance:	$4000-$22000/year	$2300-$2400/year
6. Estimated net cost:	**$1638-19638/year**	**$8077-8177/year**
7. Estimated student loans and/or student work earnings:	$500-$7000/year	$0-$1750/year
8. Estimated net cost with self-help:	**$0-19138/year**	**$6327-8177/year**

Costs include tuition and fees, books and supplies, room and board, personal expenses, and transportation. Budget components are calculated based on average expenditures incurred by students. For tips on how to reduce your college costs go to www.collegeforalltexans.com

Explain

17. Use the descriptions below to help students understand the results.
Row 1 is the selected colleges.
Row 2 is where Johnny plans to live based on which college he chooses.
Row 3 shows the estimated cost for attending each college. The bold print on row 3 is the total cost. This includes the cost of tuition and fees, room and board, books and other expenses. Direct students to record total cost for each college on **Activity 8.5-1** for number 7.
Row 4 is the median grant that is awarded to students at each college.
Row 5 is the estimated financial assistance that Johnny may receive. This estimate is based on his family's income, family's size, and number of family members that will be enrolled in college for the upcoming school year.
Row 6 is the estimated net cost. Ask students to explain net cost. ***(It is the total cost minus the financial assistance.)*** For the University of Houston sample above, the maximum assistance of $22,000 was subtracted from the total cost of $23,638 to get the lowest value for the range. For the upper range, the minimum assistance of $4,000 was subtracted from the total cost of $23,638. Direct students to find the average of the

values in the given range for the estimated net cost of each college and record these values on **Activity 8.10-1** for number 8.
Row 7 is the estimated student loans and/or works earnings. Explain that college students often get student loans to help pay the cost of college. The Federal Student Aid program provides the following information about loans:

> Remember, federal student loans are real loans, just like car loans or mortgages. You must repay a student loan even if your financial circumstances become difficult. Your student loans cannot be canceled because you didn't get the education or job you expected, or because you didn't complete your education (unless you couldn't complete your education because your school closed). [Source: Federal Student Aid, http://studentaid.ed.gov/repay-loans]

Row 8 is the estimated net cost with self-help. This is the estimated net cost minus student loans and student work earnings.

18. Instruct students to discuss number 9 on **Activity 8.5-1** with a neighbor and write a plan for Johnny. Have a few students share their thoughts with the class. **(Sample response: Johnny will most likely receive more grant money annually if he attends the University of Houston; however the cost per year is still greater than the community college. The cost will depend on how much grant and scholarships Johnny receives for each college. Johnny should apply to both colleges and apply for financial aid to both colleges. He can then compare his financial responsibility for each college.)**

Explain

19. Read the statement below from **Activity 8.5-1** to the students.

> Notice the State Net Price Calculator estimated the cost for the upcoming year. Assuming Johnny is actually in 8th grade, he will need to estimate the cost for a college education in 4 years. Each year the cost of living and the cost of tuition increases due to inflation. According to Investopedia, as inflation rises, every dollar will buy a smaller percentage of a good. For example, if the inflation rate is 2%, then a $1 pack of gum will cost $1.02 in a year.
> [Source: http://www.investopedia.com/terms/i/inflation.asp]

Elaborate

20. To estimate the cost of college in four years, students will use the bigfuture by The College Board website. Direct students' attention to number 10 on part B of **Activity 8.5-1**. Direct them to go to https://bigfuture.collegeboard.org/.

21. Instruct students to complete numbers 10-12 on part B of **Activity 8.5-1**. The teacher should model each step.

22. For steps G and O, explain to students that the total cost is the black number in the upper left corner.

Explain

23. Read the Tips located on the results page of the College Cost Calculator.

- These cost numbers can be daunting, but don't let them throw you for a loop. Relatively few students pay the full "sticker price."
- There are resources available to help you reach your education goal, such as

scholarships, loans, grants, and other forms of financial aid.

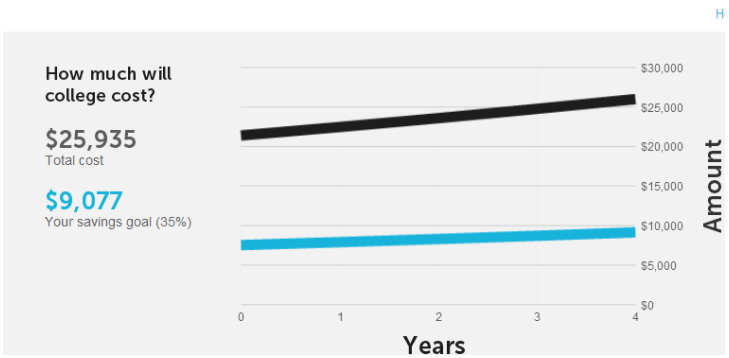
- There are more savings options than ever, too — from state "529" plans and prepaid tuition plans to tax-deferred accounts.
- College is a great investment. Did you know that people with a college degree earn over 80% more on average than those with a high school diploma? Over a lifetime, the gap in earnings potential between a h.s. diploma and a 4-year degree is more than a million dollars.

Explore

24. Have students read number 13 on part B of **Activity 8.5-1**. Instruct students to find the estimated totals for Sabrina as asked on number 13 by using http://www.collegeforalltexans.com and https://bigfuture.collegeboard.org/. Below are Sabrina's results based on the 2013-2014 school year.

2013-2014 Estimated Costs and Aid Package:	
1. College:	Texas State Technical College-West Texas
2. Where you will live while attending college:	Live at home
3. Cost of Attending	Total Cost $10408 Tuition & Fees $4290 Room & Board $2250 Books $1170 Other $2698
4. Median Grant	$750
5. Estimated grant and/or scholarship assistance:	$0-$1500/year
6. Estimated net cost:	**$8908-10408/year**
7. Estimated student loans and/or student work earnings:	$1334-$3667/year
8. Estimated net cost with self-help:	**$5241-9074/year**

Costs include tuition and fees, books and supplies, room and board, personal expenses, and transportation. Budget components are calculated based on average expenditures incurred by students. For tips on how to reduce your college costs go to www.collegeforalltexans.com



25. Direct students' attention to part C, devise a periodic savings plan. Explain that the current, low interest rates do not produce a significant growth in a savings account. However, any money you can save in a bank savings account now will get you that much closer to paying for a college degree or certification program. Save early and save often. A bank savings account keeps the money safe and separate from your checking account, making it more difficult to "dip into" those funds ahead of time. There are other opportunities for savings programs that you can discuss with your school counselor.

26. For question 1 on part C of **Activity 8.5-1**, "What are ways an 8th grader can start saving for college?" Have students work with a partner to develop a list.

27. Ask students to share their ideas. Write their ideas on the board. ***(Sample responses: Students can save their earnings from chores, babysitting, and mowing. Students can be smart shoppers and shop for economical deals. Students can save a portion of their allowance.)***

28. Explain that adults often make tradeoffs when trying to save for an expensive item such as a car or a house. A tradeoff is giving up of one thing for another. For example, if an adult is saving to purchase a car, he or she may give up eating out or reduce the amount of money that is spent on entertainment. The money that is saved will be used to purchase the car.

29. Have students complete Part C.

30. Tell students to go to the Texas Higher Education Coordinating Board, College for All Texans website at http://www.collegefortexans.com/. Select "students", then hover your mouse over "Helpful Info" and choose "Find Money for College." There will be four websites to choose from as the students investigate possible options for college funding.

31. Tell students to click on www.federalstudentaid.ed.gov, the U.S. Department of Education, Federal Student Aid Gateway. Click Who Gets Aid and investigate the eligibility criteria for the federal student aid programs. The goal for the students is to determine if they qualify for any aid to reduce their total cost to attend college. Encourage students to investigate this website with their parents.

32. Encourage students to complete Part D with their parents. Remind students that this activity will not be collected for a grade. The purpose of this activity is to give them the tools to begin planning for their post-secondary education.

Evaluate/End

33. To end the lesson, ask the questions below.

    a. What Internet tool can be used to compare cost of a college education at different colleges and universities? ***(http://www.collegeforalltexans.com)***

b. What Internet tool can be used to calculate the cost of college in the upcoming years? ***(https://bigfuture.collegeboard.org)***

c. What website will provide information about student financial aid? ***(http://studentaid.ed.gov)***

d. What financial application should be completed after January 1 of your senior year? ***(Free Application for Federal Student Aid (FAFSA))***

e. Why save for college? ***(Sample responses: The more you save now for college, the less you will need to borrow later. Students with college savings accounts are more likely to go to college.)***

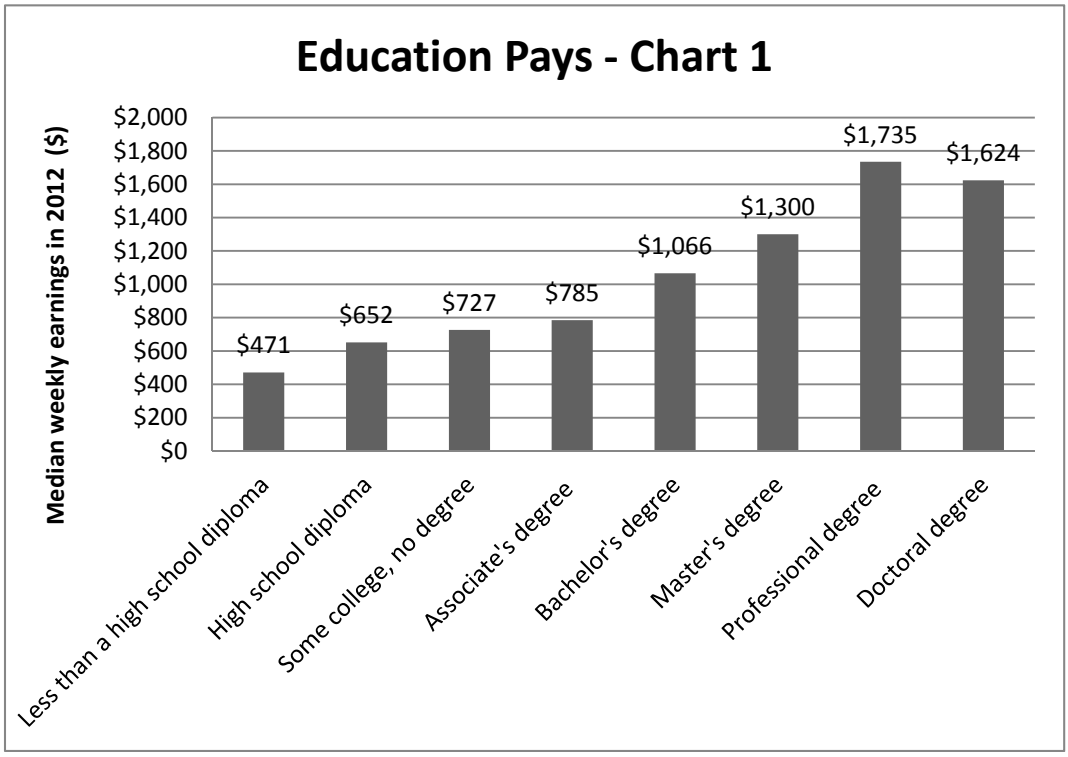
f. Why go to college? ***(Sample responses: The more education you obtain, the more money you are likely to make. The more education you get, the greater the opportunity for employment. The unemployment rate is higher for people without a college education.)***

Extension

- Invite a school counselor or a local college admissions counselor to share information about grants, scholarships, work study opportunities and loans. The class may want to set up a Parent/Student Night with a counselor presenting information on how to fund college or technical school attendance.

- Have students read and complete activities for My *Future, My Way: First Steps Toward College A Workbook for Middle and Junior High School Students* http://studentaid.ed.gov/sites/default/files/my-future-my-way.pdf. Then have each student create a poster that illustrates their college plan.

Handout 8.5-1



[Source: Bureau of Labor and Statistics http://www.bls.gov/emp/ep_chart_001.htm]

Technical certificate or diploma (at least one, but less than two, years): an award for completion of a program designed for at least one, but less than two, full academic years. It recognizes completion of competency in an occupational field and may be part of an A.A.S. curriculum or a stand-alone program.

Associate degree (two years or more): a degree granted upon completion of a program that requires at least two, but fewer than four, academic years of postsecondary education. It includes a level of general education necessary for growth as a lifelong learner and is comprised of 60-72 semester credit hours. **Bachelor's degree:** a degree granted upon completion of a program that requires four to five years of full-time college work and carries the title of bachelor.

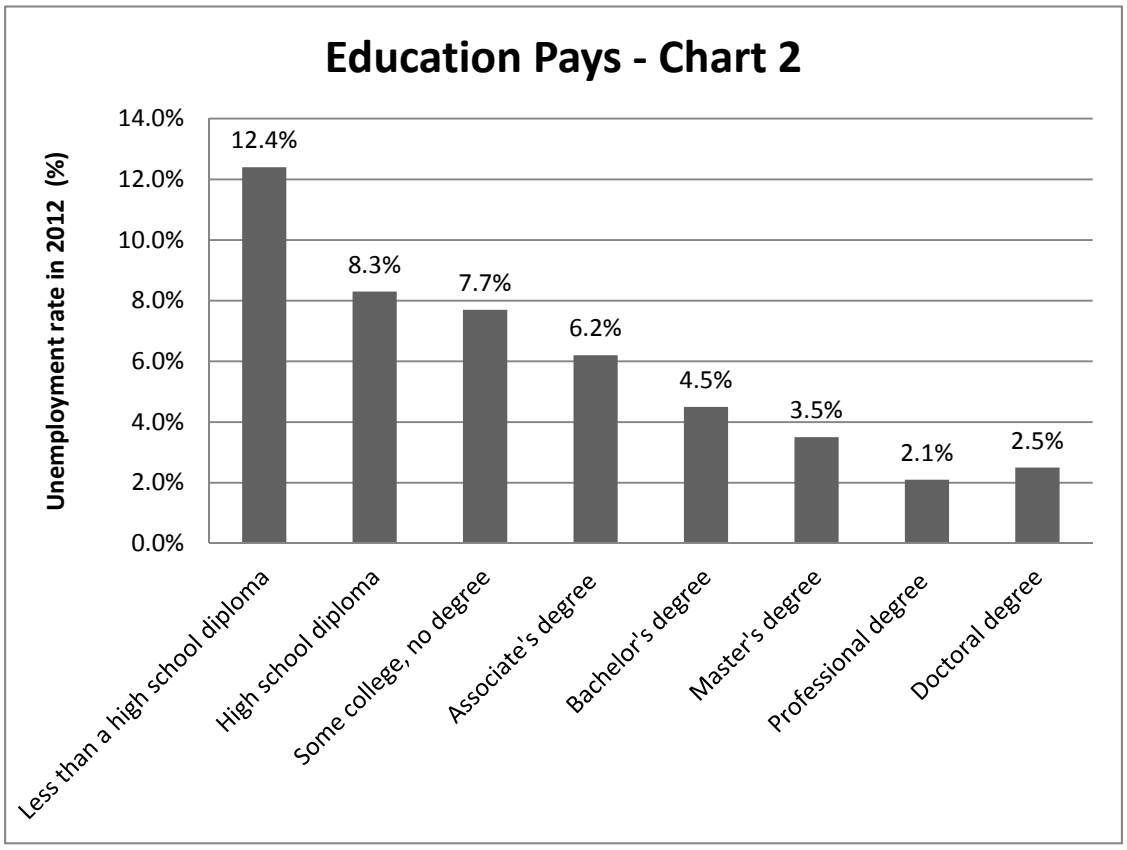
Master's Degree: a degree which requires at least one, but no more than two, full-time equivalent years of study beyond the bachelor's degree.

Professional Degree: a degree awarded upon completion of a program which meets all of these criteria: a) completion of academic requirements to begin practice in the profession; b) at least two years of college work before entering the program; and c) at least six academic years of college work to complete the degree program, including the prior required college work.

Doctoral Degree: a degree awarded upon completion of an educational program at the graduate level which terminates in a doctor's degree.

[Source: http://www.adhe.edu/divisions/researchandplanning/Pages/degreedefinitions.aspx]

Handout 8.5-2



[Source: Bureau of Labor and Statistics http://www.bls.gov/emp/ep_chart_001.htm]

Activity 8.5-1 Name _____ Class Period _____

The Cost of a College Education

Notice of Privacy

You will not be asked to enter any personal information during this lesson. This activity is designed to show how to estimate the cost of college and devise a savings plan.

A. Understand types of aid

- **Grants and scholarships** are often called "gift aid" because they are free money—financial aid that doesn't have to be repaid. Grants are often need-based, while scholarships are usually merit-based. [Source: http://studentaid.ed.gov/types/grants-scholarships]

- **Loan** - borrowed money for college or career school; you must repay your loans, with interest [Source: http://studentaid.ed.gov/types]

- **Work study** - a work program through which you earn money to help you pay for school [Source: http://studentaid.ed.gov/types]

After January 1 of your senior year of high school, complete the Free Application for Federal Student Aid by going to http://www.fafsa.ed.gov/. The office of Federal Student Aid provides grants, loans, and work-study funds for college or career school.

B. Calculate the cost of college

1. What factors affect the cost of college?

You will use the fictional character below to practice calculating the cost of college.

Johnny lives in Alvin, Texas and is a senior at Alvin High School. He plans to get a Bachelor's degree at the University of Houston. To better plan for college, he would like to know the following.

- What is the cost to attend 4 years at University of Houston?
- What is the cost to attend Alvin Community College for the first 2 years of college then transfer to the University of Houston?
- Is it more affordable to live at home, on campus or off campus?

Help Johnny examine his options by following the steps below.

2. Go to http://www.collegeforalltexans.com.
3. Click on *Students*.
4. Select State's Net Price Calculator (NPC) on the right column by clicking on the *Calculate* option.
5. Read the Disclaimer then select *I agree*.
6. Answer questions 1-14 using Johnny's personal information below.

1) *Select at least one school you may attend:*
   i. University of Houston
   ii. Alvin Community College (In-district tuition - yes)
2) *For each school above, where will you live?*
   i. On campus
   ii. Live at home
3) *What is your age?* 18
4) *Are you married?* no
5) *Do you have eligible dependents?* no
6) *Are you a U.S. citizen (or eligible non-citizen) and a resident of the state of Texas?* *Yes*
7) *What is your parents' marital status?* Single
8) *What was your parents' income in 20__ (use previous year)?* $38,000
9) *Was your parents' income (from the previous question) earned by one or two parents?* One Parent
10) *How much did your parents pay in income taxes in 20__(or previous year)?* $935
11) *What was your income in 20__ (use previous year)?* $1700
12) *How much did you pay in income taxes in 2012:* $0
13) *Including yourself and your parents, how many people will be considered part of your parents' household for 20__-20__ (use upcoming school year)?* 4
14) *Excluding your parents, how many people in your parents' household will be in college during 20__-20__ (use upcoming school year)?* 1

7. What is the total cost for each option?

   University of Houston _____

   Alvin Community College _____

8. What is the estimated net cost for each option?

   University of Houston _____

   Alvin Community College _____

9. What would be the most affordable option for Johnny?

Notice the State Net Price Calculator estimated the cost for the upcoming year. Assuming Johnny is actually in 8th grade, he will need to estimate the cost for a college education in 4 years. Each year the cost of living and the cost of tuition increases due to inflation. According to Investopedia, as inflation rises, every dollar will buy a smaller percentage of a good. For example, if the inflation rate is 2%, then a $1 pack of gum will cost $1.02 in a year. [http://www.investopedia.com/terms/i/inflation.asp] To estimate the cost of college in four years, use **the *bigfuture by The College Board*** website.

10. Go to https://bigfuture.collegeboard.org/.

11. Click on the drop down menu *Pay for College* and select *Tools & Calculators*.

12. Click on *College Cost Calculator*. Follow the steps below.

A. For *Annual college costs, in today's dollars*, enter Johnny's estimated net cost for Alvin Community College. This is the median cost you entered for number 8.

B. For *College cost inflation rate*, enter the recommended inflation. (Click on the "?" to find the recommended inflation rate.)

C. For *Expected years of attendance*, enter 2.

D. For *Percent of costs you plan to cover from savings*, enter any percent. (This number will not affect the cost.)

E. Years until college, enter 4.

F. Click on See Results.

G. How much will college cost for the 2 years at Alvin Community College?
_____

H. Click on Recalculate. (We will now use the College Cost Calculator to enter Johnny's last two years in college.)

I. For *Annual college costs, in today's dollars*, enter Johnny's estimated net cost for the University of Houston. This is the median cost you entered for number 8.

J. For *College cost inflation rate*, enter the recommended inflation. (Click on the "?" to find the recommended inflation rate.)

K. For *Expected years of attendance*, enter 2.

L. For *Percent of costs you plan to cover from savings*, enter any percent. (This number will not affect the cost.)

M. Years until college, enter 6. (If Johnny is in 8th grade, add the 4 years of high school and the 2 years at community college to determine the number of years before Johnny enters the University of Houston.)

N. Click on See Results.

O. How much will college cost for the 2 years at the University of Houston? _____

P. How much will college cost for the 2 years at Alvin Community College and the two years at the University of Houston? _____

13. Find the estimated cost of a college education for Sabrina based on the profile below.

Sabrina is an 8th grade student in Sweetwater, Texas. She plans to attend Texas State Technical College – West Texas to major in Digital Arts. This is a 2-year certification program. Sabrina will live at home with her parents and 2 younger brothers. Her parents combined income for the previous year was $96,000. They paid $5000 for income tax. Sabrina did not earn any money. She is not married. She does not have any dependents. She is a U.S. citizen.

Estimated total cost per year for the upcoming year? _____

What is the estimated grant and/or scholarship assistance that Sabrina might receive? _____ (range)

Assume Sabrina does not receive financial assistance. Estimated total cost of her 2 year education, including inflation, 4 years from now? _____

C. Devise a periodic savings plan

Students who have a savings account are 4 times more likely to go to college. If the savings account is in their name, they are 7 times more likely to go to college. [Source: Elliott and Beverly in the paper The Role of Savings and Wealth in Reducing "Wilt" Between Expectations And College Attendance (2010), http://csd.wustl.edu/Publications/Documents/WP10-01.pdf]

1. What are ways an 8th grader can start saving for college?

2. How much do you think you can save per month?

3. What tradeoffs will you need to meet this goal?

4. Go to http://www.bankrate.com/
5. Locate the list of calculators in the middle of the screen.
6. Click on the "Simple savings calculator" located at the bottom of the calculator list.
7. For Initial Amount, enter the amount you think you can save per month.
8. For Monthly Deposit, enter the same as above.
9. For Annual Interest (Compounded), enter Monthly
10. For Interest Rate, enter 1%.
11. For Number of Years, enter 4. (This is the number of years until you graduate.)
12. What is the Final Savings Balance? _____

The current, low interest rates do not produce a significant growth in a savings account. However, any money you can save in a bank savings account now will get you that much closer to paying for a college degree or certification program. A bank savings account keeps the money safe and separate from your checking account, making it more difficult to "dip into" those funds ahead of time. There are other opportunities for savings programs that you can discuss with your school counselor.

D. Plan with Your Parents

Savings accounts are not the only avenue for saving for college. Explore the websites below with your parents to find other opportunities to save and pay for college.

1. Learn what middle school students can do now to prepare for college. Learn the tax advantages of saving and find a link to a clearinghouse of state college savings plans. http://studentaid.ed.gov/prepare-for-college/checklists/middle-school

2. Use the FAFSA4caster to estimate your eligibility for financial assistance. http://studentaid.ed.gov/fafsa/estimate

3. Learn what financial aid is available. - http://studentaid.ed.gov/

4. Learn how to find a college, pay for college, and make a plan at bigfuture by The College Board. https://bigfuture.collegeboard.org/

5. Read about other ways to pay for college as well as how to plan for college - http://studentaid.ed.gov/sites/default/files/my-future-my-way.pdf

Lesson Description

Students will learn how financial institutions are able to pay savers interest while understanding the difference between interest earned and interest paid. Students will participate in a savings simulation to develop an understanding between simple and compound interest.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 8.12D** calculate and compare simple interest and compound interest earnings

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 8.1A:** apply mathematics to problems arising in everyday life, society, and the workplace

National Standards (Supporting standards)

CEE - Council for Economic Education

- **CEE Savings 8.6:** Compound interest is the interest that is earned not only on the principal but also on the interest already earned.
- **CEE Savings 8.5:** Principal is the initial amount of money upon which interest is paid.

PFL Terms

- Annual
- Simple interest
- Compound interest
- Principal

Time Required

60 minutes

Materials Required

- Three 24" strips of yarn
- A copy of **Sign 8.6-1**, **Sign 8.6-2** and **Sign 8.6-3** on cardstock (For each sign, staple each end of one piece of yarn to the top of the sign to create a loop to hang around the neck.)
- A copy of **Visual 8.6-1**
- $110 in play money (5 - $20s, 10 - $1s) for the engage activity
- One envelope, labeled SAVER, with six $100 bills in play money for each student minus the group leader (banker) for group activity
- One envelope, labeled BANK, for each group leader. Include in the envelope the play money listed below based on the number of students in the group minus on group leaders.

Paper Money	2 Savers	3 Savers	4 Savers
$20's	6	9	12
$10's	6	9	12
$5's	4	6	8
$1's	14	21	28

- A small box labeled "**Interest Earning Savings Account**" to hold money for each student minus the group leaders (banker)
- A small box labeled "**Non-interest Earning Savings Account**" to hold money for half of the students minus the group leader (banker)
- 2 sheets of blank paper for each student
- 10 pencil colors per group
- 2-3 pairs of scissors per group

Procedure

Engage

1. Write "Interest Earned" and "Interest Paid" on the board. Ask students what they think the differences are between these two terms. Have them write their answers on paper. Direct students to share their answers with a neighbor. Next have several students share their answers with the class. Do not comment on the answers.

2. Prepare for a savings and loan simulation. You will need approximately $110 in paper money, yarn and **Sign 8.2-1**, **Sign 8.2-2** and **Sign 8.2-3**. For each sign, staple each end of one piece of yarn to the top of the sign to create a loop to hang around the neck. Then ask for 3 volunteers to stand in front of the room. Each participant will hang a sign around his/her neck. One participant will have the sign that reads "Saver"; one participant will have the sign that reads "Borrower"; and the third participant will have the sign that reads "Bank."

3. The teacher reads the non-bold print in the story below.

   a. *The Saver has $100 and wants to buy earphones that cost $150.* ***(Give the saver $100 in play money.)*** *She knows that the price will eventually go down. Therefore, she decides to deposit the $100 in a savings account until she is ready to buy the earphones.* ***(Direct the Saver to hand the $100 to the Bank.)*** *What are some good reasons to put money in a savings account?* ***(Sample responses: To keep it safe. To earn interest. If your money is in a savings account at the bank, you will be less likely to spend it.)***

   b. *The Borrower uses his car to drive to work and school. On the way to work, he gets a flat tire. He goes to the bank to borrow $100 so that he can replace the tire. He promises the bank that he will pay the money back in 6 months.* ***(Direct the Bank to hand the $100 to the Borrower.)*** *The Borrower is now able to purchase a tire for his car. Where did the Bank obtain the $100 to loan the Borrower?* ***(The Bank used the Saver's money.)*** *What if the saver decides to withdraw her money before the Borrower repays the loan?* ***(The bank is always required to keep a certain percentage of money available to cover customer's withdrawals).***

   c. *Six months have passed and the Borrower repays the Bank $100.* ***(Direct Borrower to hand the $100 back to the Bank.)*** *Is that all there is to repay a loan? (****No. The Borrower should pay an additional amount of money.)*** *What is this amount of money called?* ***(Interest.)***

d. *What is an appropriate amount of interest to pay for borrowing $100 for six months?* **(Help students determine a reasonable amount. Let's say, the bank charges 10% annually. 10% of $100 is $10. Since the Borrower repaid it in a half a year, the interest will be about half of $10. Hand the Borrower the money he needs to pay in interest to the Bank. Then direct the borrower to pay the Bank $5.)**

e. *The earphones the Saver wants to buy are now on sale for $91.99. She decides to withdraw the money she put in the savings account to purchase the earphones.* ***(Direct the Bank to hand the Saver $100)***

f. *Is this all the money in her savings account?* ***(No)*** *What else should she have?* ***(The interest she earned.)***

g. *How much do you think the bank will pay the Saver for keeping her $100 in the bank for six months?* ***(Help students understand that this amount must be less than the amount the Borrower paid to the bank as the bank must make money to pay its employees, pay for the building, pay for utilities, etc. Let's say the bank pays 2% interest per year. 2% of $100 is $2. Since the Saver kept her money in the bank for half a year the interest paid will be about half of $2. Direct the Bank to pay the Saver the interest agreed upon by the class.)***

h. *When someone borrows money from a bank and then he/she pays that back to the bank later, they must also pay a little more for borrowing the money. What is this called?* ***(Interest.)*** *The person who deposits money into a bank savings account also gets interest. What is this kind of interest?* ***(This is a lesser amount of money that the bank pays someone for letting the bank use their money while the bank keeps the money safe for him/her.)***

Explain

4. Place students into groups of 5 if possible. Give each student 2 sheets of paper. Distribute 10 pencil colors and 2-3 pairs of scissors to each group. Display **Visual 8.6-1**. Tell students that they are going to create an interactive notebook to keep their notes. Read the directions from the visual and model the process for creating the interactive notebook.

5. Instruct students to number the inside pages 1-6. Have students write their names on the upper right hand corner of the front cover and title the booklet: *How Does Money Grow*? Instruct students to create an illustration with the pencil colors on the front cover that depicts the title. The teacher should continue modeling each step of the way.

6. Instruct students to open their interactive notebook to page 1. Create two columns. Label column 1 "Interest Earned" and label column two "Interest Paid". A sample of page 1 is provided on the following page.

Interest Earned	Interest Paid

7. Tell students to discuss with their group and record what each phrase means in the appropriate column. Sample responses are provided below.

Interest Earned	Interest Paid
-The price a financial institution pays for using a saver's money. -Earned interest is lower than interest you pay for borrowing money.	-The price or fee a borrower pays a financial institution for loaning them money. -Interest paid is higher than interest earned. -Financial institutions use part of this money to pay savers' interest earned.

8. Have each group share their explanations. The teacher should continue modeling by recording the students' responses on the model interactive notebook.

9. Instruct students to open their interactive notebooks to page 2. Write the term "Principal" as the heading. Allow students to discuss their understanding of this term with their group. The students may or may not know the definition. Allow volunteers to explain their definitions. ***(The principal is the amount of money upon which interest is paid.)*** Then direct students to write the definition in their interactive notebook.

Explore

10. Prepare for a savings simulation. Each group will have 1 BANKER and the remaining group members will be SAVERS.

11. Tell the students that the BANKER will be the person whose birthdate is closest to today's date.

12. Distribute to the BANKER the envelope, labeled BANK. (See **Materials Required** for contents of the envelope.)

13. The remaining members of the group will be called SAVERS. Have these students count alternately 1, 2, 1, 2. Tell the students that we are going to simulate two types of earning methods for savings accounts. The "ones" will calculate "Simple Interest" and "twos" will calculate "Compound Interest."

14. Distribute to each SAVER a box labeled "**Interest Earning Savings Account**"; the envelope, labeled SAVER, with six $100 bills in play money; and a calculator. Additionally, distribute to the Simple Interest SAVERS the box labeled **Non-interest Earning Savings Account.**

15. Tell students that each time they make a deposit; the money will be placed in their **Interest Earning Savings Account** box. Write on the board "5% annual interest". Ask them what annual means. ***(Once a year.)*** Five percent annual interest means that each savings account will earn 5% of what is in their **Interest Earning Savings Account** each year.

16. Read the non-bold print for the simulation below and direct the students as indicated.

    a. *It is now the beginning of year 1; all SAVERS deposit $100 in your Interest Earning Savings Account.* ***(Savers will get a $100 bill from the envelope and place the money in their Interest Earning Savings Account box.)***

    b. *It is now the end of year 1 and it is time for the bank to pay you 5%. How much does the bank owe you?* ***($5. Remind students that they may use their calculator to calculate the interest earned. $100 x .05 = $5****)*

    c. *BANKERS, give each SAVER $5. Simple interest SAVERS, deposit the $5 interest in your Non-interest Earning Savings Account. Compound interest savers, deposit the $5 interest in your Interest Earning Savings Account box.*

    d. *It is now the beginning of year 2; all SAVERS deposit $100 in your Interest Earning Savings Account.* ***(Savers will get a $100 bill from the envelope and place the money in their Interest Earning Savings Account box.)***

    e. *It is now the end of year 2 and it is time for the bank to pay you 5% annual interest. Which account will earn interest?* ***(The Interest Earning Savings Account.)*** *How much does the bank owe you? Count the money in your Interest Earning Savings Account and multiply times 5%.* ***(Simple interest savers - $200 x .05 = $10. Compound interest savers - $205 x .05 = $10.25.)*** *For our purpose, we will round to the nearest dollar. BANKERS, give each SAVER his/her interest. Simple interest SAVERS, deposit the $10 in your Non-interest Earning Savings Account. Compound interest SAVERS, deposit the $10 interest in your Interest Earning Savings Account.*

    f. *It is now the beginning of year 3; all SAVERS deposit $100 in your Interest Earning Savings Account.* ***(Savers will get a $100 bill from the envelope and place the money in your savings account box.)***

    g. *It is now the end of year 3 and it is time for the bank to pay you 5% annual interest. How much does the bank owe you? Count the money in your Interest Earning Savings*

Account box and multiply times 5%. ***(Simple interest savers - $300 x .05 = $15. Compound interest savers - $315 x .05 = $15.75.)*** *Remember to round to the nearest dollar. Bankers, give each SAVER their interest. Simple Interest SAVERS deposit the $15 interest in your Non-interest Earning Savings Account. Compound interest SAVERS deposit the $16 interest in your Interest Earning Savings Account.*

17. Repeat steps (f) and (g) for years 4, 5, and 6. Use the table below to keep track of the totals and interest earned. This table is for the teacher's use only.

		Simple Interest Group			Compound Interest Group	
Deposit Cycle	Deposited Amount	Amount in Interest Earning Savings Account	Interest earned	Amount in Non-interest Earning Savings Account	Amount in Interest Earning Savings Account	Interest earned
1	$100	$100	$5	$5	$100	$5
2	$100	$200	$10	$15	$205	$10
3	$100	$300	$15	$30	$315	$16
4	$100	$400	$20	$50	$431	$22
5	$100	$500	$25	$75	$553	$28
6	$100	$600	$30	$105	$681	$34
					$715	

Explain

18. Ask the students to total the money in their Interest Earning Savings Account and the money in your Non-interest Earning Savings Account. Ask the questions below and record the values on the board.

    a. *How much did each person on the simple interest group have in Interest Earning Savings Account?* ***($600)***

    b. *How much did each person in the simple interest group earn in interest?* ***($105)***

    c. *What is the total amount saved for each person in the simple interest group after 6 years?* ***($600 + $105 = $705)***

    d. *What is the total amount saved for each person in the compound interest group?* ***($715)***

    e. *Why did the compound interest group save more?* ***(They earned interest on the principal and the interest earned. The simple interest group only earned interest on the principal.)***

19. Direct students to open the interactive notebook to page 3. Create two columns. Label column 1 "Simple Interest" and label column two "Compound Interest". Direct students to write the definitions for each type of interest in the appropriate column.

20. Explain that most savings accounts pay compound interest. The reason we study simple interest rate is because some people will set up an account in which the earned interest is withdrawn or deposited to another account. Therefore, these savers never earn

interest on the interest.

21. Collect interactive notebooks. These notebooks will be used in Grade 8 Lesson 7.

Evaluate/End

22. To end lesson, ask the following questions.

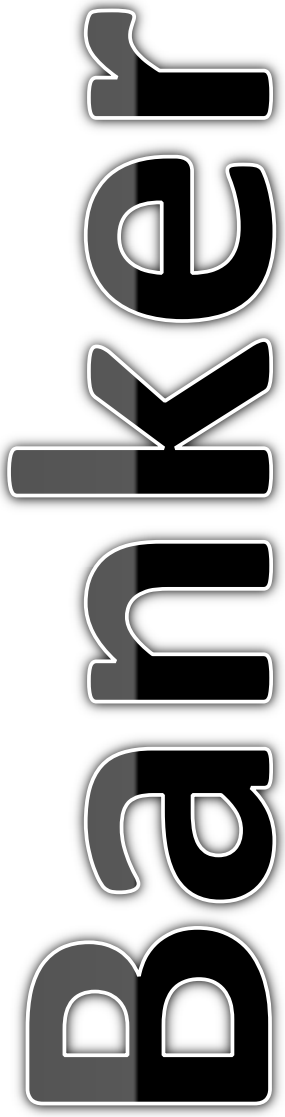
    a. What is interest earned? ***(It is the money the bank or credit union pays the customer for keeping his/her money in the savings plans.)***

    b. What is simple interest? ***(Simple interest is the amount of money the account earns on the money the saver deposits.)***

    c. What is compounded interest***? (Compounded interest is the interest earned on the money the saver deposits and interest already earned.)***

Sign 8.6-1

Sign 8.6-2



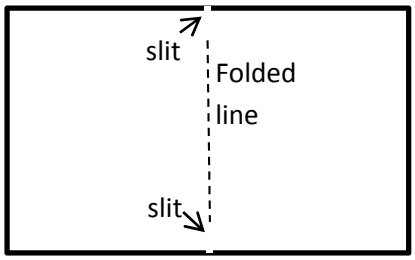
Sign 8.6-3

Visual 8.6-1

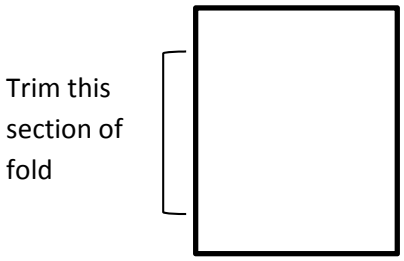
Steps to Create an Interactive Notebook

Materials: 2 sheets of paper and a pair of scissors.

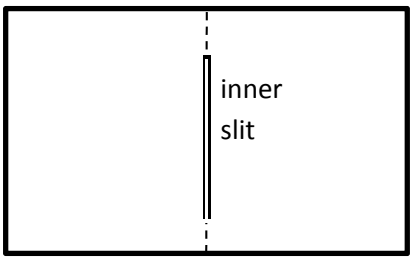
1. Stack two sheets of blank paper together and fold along the shortest line of symmetry.
2. Open one sheet of paper. Cut two 1 inch slits along the outer edge of the folded line as shown below.



3. Keep the second sheet folded. Using a pair of scissors, trim the fold starting 1 inch from the top and end 1 inch from the bottom. When the page is open, there will be a slit down the middle as shown below.



Second page
when folded



Second page
when opened

4. Open the first page with the outer slits. Roll this page around its longest line of symmetry. Slide rolled page through the slit of the second page. When the rolled paper is inserted halfway through the slit, open the page. The outer slits will be aligned with the fold of the second page to create a booklet.

Lesson Description

Students will consider the advantages of saving for a college education. Using an online savings calculator, students will explore how small amounts of money invested regularly, including money saved for college and retirement, grow over time.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 8.12C:** explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time
- **PFL Math 8.12D** calculate and compare simple interest and compound interest earnings

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 8.1A:** apply mathematics to problems arising in everyday life, society, and the workplace

National Standards (Supporting standards)

CEE - Council for Economic Education

- **CEE Earning Income 8.7:** People often use a portion of their savings to help themselves or their family members build human capital through education or job training.
- **CEE Savings 8.5:** Principal is the initial amount of money upon which interest is paid.
- **CEE Savings 8.6:** Compound interest is the interest that is earned not only on the principal but also on the interest already earned.
- **CEE Savings 8.7:** The value of a person's savings in the future is determined by the amount saved and the interest rate. The earlier people begin to save, the more savings they will be able to accumulate, all other things equal, as a result of the power of compound interest.
- **CEE Savings 8.8:** Different people save money for different reasons, including large purchases (such as higher education, autos, and homes), retirement, and unexpected events. People's choices about how much to save and for what to save change considerably over the course of their lives and are based on their tastes and preferences.

PFL Terms

- Annual
- Simple interest
- Compound interest
- Principal

Time Required

60 minutes

Materials Required

- A copy of **Activity 8.7-1** for each student
- A copy of **Visual 8.7-1** and **8.7-1**
- A pair of scissors for each student
- Glue for each student
- A calculator for each student
- Interactive notebooks from *Lesson 6 After School*
- A computer with Internet access for each student
- A computer with Internet access and projection capability for the teacher
- Brochure from a financial institution that explains savings plans (optional)

Procedure

Engage

1. Ask the question below. Have students write down their answer. After 1 minute, have students share their answer with a neighbor. Then have a few students share their answers with the class.

   a. What does "Invest in yourself" mean? ***(Invest in yourself means to increase your earning power. This can be done by studying hard, earning good grades now, and saving money to pay for college.)*** Explain that people who have a college degree or a certification from a career school earn more money than those without a degree or certificate. A college degree will increase their earning power. People often use a portion of their savings to help themselves or their family members build human capital through education or job training.

2. Tell students that saving can help people reach their financial goal. Saving takes discipline and commitment, but if you save early and save often you can reach your goal. Ask the questions below. Have students write down their answers. After 1 minute, have students share their answers with a neighbor. Then have a few students share their answers with the class.

   a. How can financial institutions help people save? ***(Financial institutions make it easy to save. Keeping your savings in a financial institutions removes the temptation to spend the money. Your money will be safe because financial institutions are insured. Money in savings earn interest.)*** Explain that different people save money for different reasons, including large purchases (such as higher education, autos, and homes), retirement, and unexpected events. People's choices about how much to save and for what to save change considerably over the course of their lives and are based on their tastes and preferences.

   b. What is compound interest? ***(Compound interest is the interest that is earned not only on the principal but also on the interest already earned.)***

Explain

3. Explain that in the examples on simple and compound interest in Lesson 6, we used annual interest. Many financial institutions pay interest by compounding monthly, quarterly or semiannually. If it is compound monthly, the saver will receive 1/12 of the annual interest that is calculated and deposited into accounts each month. Why do you think the interest is multiplied by 1/12 (or divided by 12)? ***(There are 12 months in a year. Dividing an annual payment by 12 equals the value for 1 month.)*** What do you think that will do to the savings balance? ***(It will increase faster since you are adding interest every month to your savings account and then compounding it the next month.)*** How often would interest be paid if the savings is compounded quarterly? ***(Quarterly means ¼ of a year. 12 months divided by 4 or multiplied by ¼ is every 3 months.)*** How often will interest be paid if the savings is compounded semiannually? ***(Semiannually means occurring twice a year.***

4. Distribute **Activity 8.7-1**, a pair of scissors, glue, a calculator, and the interactive notebooks created in *Lesson 6 After School* to each student. Display **Visual 8.7-1**. Have students cut out the tables on **Activity 8.7-1** and glue Table 1 to page 3, Table 2 to page 5 and Table 3 to page 6 of their interactive notebook. Tell students that **Visual 8.7-1**

illustrates the layout of the pages for the interactive notebook. Notice that page 4 is left blank for now.

5. Move students to a computer lab with Internet access. Direct them to bring their interactive notebook, calculator and a writing instrument.

6. Display Visual **8.7-2** or write the terms and definitions from the visual on the board. Tell students to turn to Table 1 on page 3 of their interactive notebook. Explain what each heading on the table means. If there is a term students are unfamiliar with, they should make a note above the term in their interactive notebook.

   a. **Initial Amount** – The amount of money deposited when the account is open.
   b. **Monthly Deposit** – This is the amount that is deposited every month.
   c. **Interest Rate** – For the saver, an interest rate is the price a financial institution pays for using a saver's money and is normally expressed as a percentage of the amount saved.
   d. **Number of Years** – The total time in years of the savings assuming no money has been withdrawn.
   e. **Financial Savings Balance** – The amount of money saved after the number of years indicated in column 4.

Explore

7. Explain that they will use an online tool to calculate the final balance of various savings accounts. Model and explain the steps below.

   1) *Go to http://www.bankrate.com/.*

   2) *Locate the list of calculators in the middle of the screen. Click on the Simple savings calculator located at the bottom of the calculator list.*

   3) *Look at the first column on the screen that has a drop down menu for Annual Interest (compounded) with options "monthly", "quarterly", "semiannually", and "annually". You will need to make sure the correct method of compounding is selected for each calculation.*

   4) *Enter the information on the first row of Table 1 into the Simple savings calculator. The term of 5 years was chosen to represent the number of years you have to save before starting college including this year.*

   5) *Once the data is entered, click on the Calculate button.*

   6) *A list of values will appear on the bottom of the screen. Each line represents the balance of the savings account after each year. The Final Savings Balance represents the amount of money in the savings account after 5 years. Enter this value in the fifth column of Table 1.*

8. Before completing the next rows, ask students what they think will be the Final Savings Balance if the monthly deposit is $25, $50, or $100. Instruct students to write their

predictions for the remaining rows to the right of column 5 in Table 1. Once the predictions have been recorded, direct students to enter the data for the remaining rows of Table 5 on the *Simple savings calculator* and record the Final Savings Balance. Have students evaluate their predictions. Allow a few students to comment on their evaluation.

9. Say: *Look at the last row of Table 1. If you continue saving $100 for the next 30 years, what do you think will be the Final Savings Balance?* Allow students to yell out predictions. Write these predictions on the board. Then have students make the calculation using the online calculator. ***($58,396.53)*** Ask: *Is this number close to your prediction? What does this last calculation tell us?* ***(Sample response: You can save a lot of money by saving for a long time.)***

Explore

10. Explain that they will now investigate why and how time affects the balance. Ask students to turn to page 4 of their interactive notebook. Create a table with two columns. Label the first column "Year" and the second column "Balance".

11. Reenter the data from the last row of the Table 1 into the *Simple savings calculator* with a monthly deposit of $100. Click on the Calculate button. Then copy the list on the bottom of the screen to the table on page 4 of their interactive notebook. The teacher should model this step.

Year	Balance
1	$1,268.16
2	$2,523.37
3	$3,816.76
4	$5149.49
5	$6,522.75

12. Ask the students to calculate how much the balance increased each year. The teacher should model the calculation for the first two years. ($2,523.37 - $1,268.16 = $1255.21)

Year	Balance	
1	$1,268.16	$2,523.37 - $1,268.16 = $1255.21
2	$2,523.37	$3816.76 - $2523.37 = $1293.93
3	$3,816.76	$5149.49 -$3816.76 = $1332.73
4	$5149.49	$6522.75 - $5149.49 = $1373.76
5	$6,522.75	

13. Direct students to complete the calculations.

14. Ask students to use these numbers to analyze the table with their group. Allow 2-3 minutes for group discussion.

15. Ask groups to share their analysis. ***(Sample response: Although the same amount was deposited each year, the increase in the balance is greater from year to year. This is because of the compounding. There is more money each year since the interest is included in the balance.)***

Elaborate

16. Tell student to look at Table 2 on page 5 of their interactive notebook. Notice that in this table the Final Savings Balance is given. They must use the *Simple savings calculator* to determine the missing information that will produce the given Final Savings Balance. Point out that they will need to use compound quarterly for this table. Direct them to raise their hands when they are complete. The teacher will come by to check each student's answers using **Key 8.7-1**. If their answers are correct, tell them to work the last problem on page 6 of their interactive notebook.

17. As each student completes page 6, check their answers.

Evaluate/End

18. For closure, ask the questions below.

    a. *In Table 3, Aniya is saving for her first year of college. Will Aniya have enough to pay for the first 2 semesters?* ***(Yes)*** *Have a student explain the process they used to make this determination.*

    b. *Other than savings accounts, what other savings plans do financial institutions offer?* ***(Certificates of Deposit and Money Markets.)*** Explain that Certificates of Deposits have a minimum deposit and a specific length of time for which the money must remain in the account. Money Markets typically have minimum deposits and restrict the number of withdrawals. Both of these options often pay a higher interest rate than a savings account.

    c. *What determines the value of a person's savings in the future?* ***(Sample response: The value of a person's savings in the future is determined by the amount saved, how long a person saves, and the interest rate. The earlier people begin to save, the more savings they will be able to accumulate, all other things equal, as a result of the power of compound interest.)***

    d. *Let's say your friend got a part-time job working at the gym on Saturdays. With this job, he plans to save part of his monthly paycheck to purchase an Ipad that costs $329. What advice can you give your friend to help him plan for this goal?* ***(Sample responses: Put your money in a savings account so you won't be tempted to spend the money. Put your money in a savings account so the money will be safe. Put your money in a savings account so you can earn interest. Save early and save often. Help him choose a savings that pays the highest interest and no fees. Once he chooses a savings plan, show him how to use bankrate.com to determine how long he will need to save.)***

Extension:

- Provide students with brochures from a financial institution that presents various savings plans.
- Invite a banker to talk about savings options.

Activity 8.7-1

Directions: Cut out tables below. Tape Table 1 to page 4, Table 2 to page 5 and Table 3 to page 6 of your interactive notebook.

Table 1 – Compound Monthly				
Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance
$50	$10	3%	5	
$50	$25	3%	5	
$50	$50	3%	5	
$50	$100	3%	5	

Table 2 – Compound Quarterly				
Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance
$50	$50	3%		$3900
$100	$25	3%		$1300
$150	$100	3%		$21,000
$200	$50	3%		$8000
$250		3%	9	$9600

Table 3 – Compound Monthly
Aniya is a high school junior. She has been saving for college since she was in 6th grade. Her plans are to become a paramedic. This certification requires 3 semesters at El Centro College. The cost for tuition and books will be about $2200 a semester. If Aniya qualifies for $400 in grants each semester, how much money does she need to save for her first year of college? To date, she has $450 in her college savings account. Now that she has a part-time job, she will deposit $200 every month in her savings account which pays 3% compound monthly. If Aniya has 2 more years to save, how much will she have saved? Will Aniya have enough to pay for the first 2 semesters of college?

Key 8.7-1

Directions: Cut out the tables below. Tape Table 1 to page 4, Table 2 to page 5 and Table 3 to page 6 of your interactive notebook.

Table 1 – Compound Monthly				
Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance
$50	$10	3%	5	**$704.55**
$50	$25	3%	5	**$1,674.25**
$50	$50	3%	5	**$3,290.42**
$50	$100	3%	5	**$6,522.75**

Table 2 – Compound Quarterly				
Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance
$50	$50	3%	**6**	$3900
$100	$25	3%	**4**	$1300
$150	$100	3%	**14**	$21,000
$200	$50	3%	**11**	$8000
$250	**$75**	3%	9	$9600

Table 3 – Compound Monthly
Aniya is a high school junior. She has been saving for college since she was in 6th grade. Her plans are to become a paramedic. This certification requires 3 semesters at El Centro College. The cost for tuition and books will be about $2200 a semester. If Aniya qualifies for $400 in grants each semester, how much money does she need to save for her first year of college? *2(2,200) – 2($400) = $3,600* To date, she has $450 in her college savings account. Now that she has a part-time job, she will deposit $200 every month in her savings account which pays 3% compound monthly. If Aniya has 2 more years to save, how much will she have saved? *$5,418.35* Will Aniya have enough to pay for the first 2 semesters of college? *Yes.*

Visual 8.7-1

Name

How Does My Money Grow?

Interest Earned	Interest Paid
-The price a financial institution pays for using a saver's money. -Earned interest is lower than interest you pay for borrowing money.	-The price or fee a borrower pays a financial institution for loaning them money. -Interest paid is higher than interest earned. -Financial institutions use part of this money to pay savers' interest earned.

Principal

The principal is the amount of money upon which interest is paid.

Page 2

Table 1 – Compounded Monthly				
Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance
$50	$10	3%	5	
$50	$25	3%	5	
$50	$50	3%	5	
$50	$100	3%	5	

Page 3

Page 4

Table 2 – Compounded Quarterly				
Initial Amount	Monthly Deposit	Interest Rate	Number of Years	Final Savings Balance
$50	$50	3%		$3900
$100	$25	3%		$1300
$150	$100	3%		$21,000
$200	$50	3%		$8000
$250		3%	9	$9600

Page 5

Table 3 – Compounded Monthly

Aniya is a high school junior. She has been saving for college since she was in 6th grade. Her plans are to become a paramedic. This certification requires 3 semesters at El Centro College.

The cost for tuition and books will be about $2200 a semester. If Aniya qualifies for $400 in grants each semester, how much money does she need to save for her first year of college?

To date, she has $450 in her college savings account. Now that she has a part-time job, she will deposit $200 every month in her savings account which pays 3% compounded monthly. If Aniya has 2 more years to save, how much will she have saved?

Will Aniya have enough to pay for college?

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Visual 8.7-2

a. **Initial Amount** – The amount of money deposited when the account is open.
b. **Monthly Deposit** – This is the amount that is deposited every month.
c. **Interest Rate** – For the saver, an interest rate is the price a financial institution pays for using a saver's money and is normally expressed as a percentage of the amount saved.
d. **Number of Years** – This is the total length of the savings assuming no money has been withdrawn.
e. **Financial Savings Balance** – The total of your savings after number of years indicated in column 4 is the financial savings balance.
f. **Amount Invested** – The total amount you contributed to the savings account is the amount invested or the principal.
g. **Total Interest** – Total interest is how much the bank paid you for lending them money.

Lesson Description

Students learn how to compare various small loans including easy access loans. Through the use of an online calculator, students determine the total repayment as well as the total interest that will be paid for loans and credit cards. They then create a human graph that reflects their knowledge of how the loan term and the Annual Percentage Rate (APR) affect the total repayment of the loan.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 8.12A:** solve real-world problems comparing how interest rate and loan length affect the cost of credit
- **PFL Math 8.12B:** calculate the total cost of repaying a loan, including credit cards and easy access loans, under various rates of interest and over different periods using an online calculator
- **PFL Math 8.12F** analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 8.1A:** apply mathematics to problems arising in everyday life, society, and the workplace

National Standards (Supporting standards)

CEE - Council for Economic Education

- **CEE Using Credit 8.2:** The longer the repayment period on a loan and the higher the interest rate on the loan, the larger is the total amount of interest charged on a loan.
- **CEE Using Credit 8.3:** A credit card purchase is a loan from the financial institution that issued the card. Credit card interest rates tend to be higher than rates for other loans. In addition, financial institutions may charge significant fees related to a credit card and its use.
- **CEE Using Credit 8.4:** Borrowers who use credit cards for purchases and who do not pay the full balance when it is due pay much higher costs for their purchases because interest is charged monthly. A credit card user can avoid interest charges by paying the entire balance within the grace period specified by the financial institution.
- **CEE Using Credit 8.5:** Various financial institutions and businesses make consumer loans and may charge different rates of interest.
- **CEE Using Credit 8.8:** People can use credit to finance investments in education and housing. The benefits of using credit in this way are spread out over a period of time and may be large. The large costs of acquiring the education or housing are spread out over time as well. The benefits of using credit to make daily purchases of food or clothing are short-lived and do not accumulate over time.

PFL Terms

- Loan
- Credit card
- Interest paid
- Compound interest
- Annual Percentage Rate (APR)
- Easy access loan

Time Required 60 minute class period

Materials Required

A copy of **Activity 8.8-1** for each student
Power Point 8.8-1
A set of **Signs 8.8-1** for every 8 students
A calculator for each student
A computer with Internet connection for each pair of students

Procedure

1. Take students to a computer lab with internet connection. Pair students two to a computer. Distribute **Activity 8.8-1** and a calculator to each student. Present **Power Point 8.8-1**. The student activity sheet parallels with **Power Point 8.8-1**. Tell students that through the power point they will be given instructions on how to complete the activity sheet. Use the script below to guide the students.

Engage

- **Slide 1:** For number 1 of **Activity 8.8-1**, have students talk to their neighbor about what this ad is advertising. Then write down the explanation in the space provided. ***(Sample response: Getting a loan from this company is easy even if you have bad credit. You can apply online. You can get a loan quickly.)*** After students have completed this task, allow a few students to share their answers.

- **Slide 2:** For number 2 of **Activity 8.8-1**, have students record why someone might need to borrow money. Then have students compare their answers with their partner. ***(Sample responses: to pay for emergencies, to pay for college, to buy a car, to buy a house.)*** After students have completed this task, allow a few students to share their answers.

- **Slide 3:** For number 3 of **Activity 8.8-1**, have students record their guess for each national debt listed. Then display the actual debt. Have students record this debt as it appears on the power point. Explain that many consumers live above their means. This means that they buy goods and services they want but can't afford. Therefore to make the purchase, they might get a loan. The consumer might not fully understand the terms of the loan. Consequently, they end up accumulating more debt than they can pay. Other consumers purchase their wants with their credit card. When the payment is due, some consumers can't pay the full amount of their purchases. If these individuals continue purchasing goods and services with their credit card, their debt continues to increase. With this activity, they will learn how to better understand loans and credit cards. Additionally, they will learn how to use an online calculator to determine the total amount that must be repaid and the total interest that will be paid. They will consider the financial responsibility of the borrower.

- **Slide 4:** For number 4 of **Activity 8.8-1**, have students list avenues to get a loan. Then have a few students share an item on their list.

Explain

- **Slide5:** For number 5 of **Activity 8.8-1** have students fill in the blanks as you explain. Say: *When a potential borrower applies for a loan, the financial institution will want to know the borrower's total debt and income. If the borrower has too much debt, he or she may*

not be able to pay back the loan. The financial institution will most likely check the borrower's credit history to determine his or her ability to pay back the loan. Knowing the borrower's income will tell the financial institution if he or she has the means to pay back the money. For large loans such as a loan for a house, the financial institution may want to know the borrower's net worth. This is the difference of what is owned minus what is owed.

- **Slide 6 & 7:** For numbers 6 and 7 of **Activity 8.8-1**, have students fill in the blanks as you explain the slides. Explain that to accurately compare interest rates, it is important to find out what is the APR (Annual Percentage Rate). Since each lender has different loan terms, the federal government requires lenders to disclose the APR. Bottom Line: Always ask for the APR when borrowing money.

- **Slide 8:** For number 8 of **Activity 8.8-1**, have students fill in the blanks as you explain about collateral and secure and unsecure loans.

- **Slide 9 & 10:** For number 9 of **Activity 8.8-1**, have students fill in the blanks as you explain about easy access loans. Read the slide then explain that since the 15% is due back in 14 days, this is actually a fee of 15% of $200. Have the students make the calculations. ***(.15 x $200 = $30)***

Explore

- **Slide 11-14:** For number 10 of **Activity 8.8-1** have students fill in the blanks as you explain the table using the following script.

  - *The second column is an example of a common small loan that a financial institution might offer. The third column is an example of an easy access loan.*

  - *Point out that both of these loans are for $500. The first loan will be paid back monthly over 12 months. The second one will be paid back in 14 days.*

  - *This particular common small loan charges 7% and this particular easy access loan charges a $50 fee. The APR for the common small loan is 7.22%. The calculation to get the APR is complicated, but the difference between these two percentages comes from the method of compounding. Which do you think would charge more interest: 7% compound monthly or 7% compound annually?* ***(Compound monthly, because interest is compounded every month. This means that interest is added monthly.)*** *To accurately compare these two compound methods, remember to ask for the APR.*

  - *What is the APR of the easy access loan?* ***(260.71%)*** *The high cost is due to the short time period of the loan and the fee. Again, this is a complicated calculation that you will not be required to learn. What is the bottom line?* ***(Ask for the APR when getting a loan.)*** [Teacher note: For easy access loan APR calculations go to http://www.csgnetwork.com/apr4calc.html]

  - *Another method to compare loans is to calculate the total amount to be repaid to the lender. Calculate the repayment for the common small loan if the monthly payment is $43.31.* ***(Common small loan = $43.31 x 12 = $519.72.)*** *What do you think is the payment for the easy access loan?* ***(The entire amount borrowed and the financial***

fee is due in 14 days. $50 + $500= $550.)

- *If the easy access loan cannot be paid back in 14 days, another $50 is charged.*

- **Slide 15:** Explain to students that they will now learn how to use an online calculator to determine the total amount to be repaid and the total interest to be paid. Remind them that when they calculated compound interest in the savings lesson, the savings grew faster than simple interest. Ask them if they remember why the savings grew so fast. ***(With compound interest, you earn interest on the principal and the interest earned.)*** Explain that loans also use compound interest. But the difference is that the annual percentage rate or the APR is greater than the interest rate for savings. Ask them how they think that this increase will affect what they owe. ***(A higher interest rate means the interest paid will be greater.)*** Instruct students to follow the directions on slide 15. Then for number 11 of **Activity 8.7-1**, have students fill in the monthly payment for row one.

- **Slide 16**: Ask students how they can use this information to calculate the total repayment. ***(Multiply the amount of the monthly payment times the number of monthly payments.)*** Instruct students to use their calculator to determine the total repayment***. ($5210.88)*** Have students fill in the Total Repayment on row 1. Ask how much of the total repayment will be interest. ***($5210.88 - $5000 = $210.88)*** Have students fill in the Total Interest Paid on row 1.

- **Slide 17:** Ask students what happens if you don't qualify for 4%. Explain to students that financial institutions typically run credit reports on people who apply for a loan. If the credit report has negative indicators such as frequent late payments or there is a large amount of debt, the financial institution might determine that it is a risk to lend you money. They will either not loan you the money or charge you a higher interest rate. For number 11 of **Activity 8.8-1,** instruct students to calculate rows 2 - 4 to determine how higher interest rates affect the total repayment and the amount of interest that you will pay. The teacher should check answers with the key as students are recording their answers. Then have the students compare the results for rows 1-3. Then have a few students share their responses. Instruct students to record their answer for question a. ***(As the interest rate increases, the total repayment increases.)***

- **Slide 18:** Ask students what happens if you increase the loan term. Explain that borrowers might request a longer loan term to reduce the monthly payments. Ask*: If the interest rate remains the same whereas the loan term increases, will the borrower pay the same?* Do not comment on students' prediction. For number 11 of **Activity 8.8-1**, instruct students to use the online calculator and the data in rows 5 and 6 to determine the missing values in the table. Then have the students compare the results to row 1. Have them discuss the questions below the table with their partner. Then have a few students share their responses. ***(As the loan term increases, the total repayment increases.)*** Instruct students to record their answer for question b.

- **Slide 19:** For numbers 12-15 of **Activity 8.8-1**, have students fill in the blanks as you explain about credit cards.

- **Slide 20:** For number 16 of **Activity 8.8-1**, have students follow the directions on slide 20.

Then have them enter the data for the number of months to payoff in row 1. Ask students how can they use this information to determine the total repayment? ***(monthly payments x number of months = total repayment = $6000)*** Ask how much of the total repayment is interest? ***($6000 - $5000 = $1000)***

- **Slide 21:** Ask students what happens if the borrower can't pay $300 per month? Then have students use the online calculator and the data in rows 2 and 3 to determine the number of months to pay off. Then use the hand held calculator to calculate the total repayment and the interest paid. The teacher should check individual data entry. Next, have students analyze the table; discuss the questions below the table with their partner; and record their findings. After all students have completed these tasks, have a few students share their conclusion. ***(If you decrease the monthly payment, the total repayment and interest increase.)***

- **Slide 22:** Ask students what happens if the interest rate changes. Have students use the online calculator and the data in rows 4 and 5 to determine the total repayment and the interest paid. The teacher should check individual data entry. After all students have made their calculations, ask students to discuss the questions below the table with their partner and then record their responses. Have a few students share their responses. ***(See key for sample responses.)***

- **Slide 23:** Explain to students that in addition to the possible interest that borrowers might pay, credit cards might have additional fees. Read the slide.

Elaborate

- **Slide 24:** Ask students to work with their partner to answer questions 17 – 21 on **Activity 8.8-1**. The teacher should use the key to check students' answers as they are completed. Allow students to share their responses for number 21. Sample responses can be found on the key.

2. Divide students into groups of 8. Shuffle each set of **Signs 8.8-1**. Then distribute one set of **Signs 8.8-1** to each group. Tell students to give each student in their group a sign. Then students should use what they have learned about interest rates for loans and loan terms to determine the order of the total repayment. Say: *You each have a sign in your hand. Hold the sign in front of your chest so that your group members can see your sign. Then based on the total repayment, create a human graph going from the least repayment to the greatest. When you think your team is in the correct order, raise your hand. I will check your order. If it is incorrect, you may try again.* ***(6%, 36 months; 10%, 24 months; 7%, 42 months; 15%, 24 months; 10%, 42 months; 15%, 36 months; 17%, 42 months; 17%, 48 months)***

Evaluate/End

3. To close the lesson, pose the following questions found on slides 25-26.

- *What questions do I need to ask when getting a loan?* ***(What is the APR? What additional fees are charged? How long is the loan term?)***

- What advice would you give a friend who is about to get a credit card? **(Sample responses: Only use your credit card if you know you can pay it off at the end of the month to avoid interest. Shop for a credit card that has low interest rates.)**

- What financial responsibilities are tied to borrowing?
    - If you borrow money, you are responsible for paying it back.
    - If you borrow money, you are responsible for making your payments on time.
    - It is not responsible to borrow money to purchase things you want. Borrow only if it is a necessity.
    - If you have to get a loan or you have to use a credit card for emergencies, pay off your debt quickly to reduce the paid interest.

Activity 8.8-1 Name _____ Class Period _____

Borrower Beware

1. Describe what the ad is advertising.

2. List reasons consumers borrow.

3. What's Your Guess?
   a. What was the average credit card debt in 2012?
      Your guess: _____ Actual:_____
   b. What was the average student loan debt?
      Your guess: _____ Actual:_____
   c. What was the total American consumers owed in debt in 2012?
      Your guess: _____ Actual:_____
   d. What was the total student loan debt in 2012?
      Your guess: _____ Actual:_____

4. Where can you get a loan?

5. How do you qualify for a loan?

   a. How much do you _____ in debt?
   b. Do you make regular payments on your existing debt?
   c. What is your _____?

6. The annual percentage rate (APR) is the _____ over the term of the loan.

7. How do I compare loans?
   _____

8. Understanding Loans
a. Collateral is a piece of property that can be sold by the lender to recover all or part of a _____.
b. Secure loan is secured with _____.
c. Unsecure loan is not secured with _____. These loans have a _____interest rate.

9. Easy Access loans are sometimes called _____ loans or_____ loans. They make it "_____" to get a loan.

10. Compare common loans

	Common Small Loan	**Easy Access Loan**
Loan Amount	$500	$500
Loan Term	12 months	14 days
Interest Rate	7%	n/a
Financial Fee	none	$50*
APR		
Payment		
Total Interest/Fees		

*1st 14 day fee is $50, if renewed an additional $50 fee is required.

11. Loan Calculations

Loan Amount	Loan Term	Interest Rate per year (APR)	Monthly Payment	Total Repayment	Total Interest Paid
$5,000	2 years	4%			
$5,000	2 years	6%			
$5,000	2 years	8%			
$5,000	2 years	10%			
$5,000	3 years	4%			
$5,000	4 years	4%			

Explain what happens to the total repayment as the interest rate increases

Explain what happens to the total repayment as the loan term increases.

Credit Cards

12. A credit card purchase is a _____ from the financial institution that issued the card.
13. Credit card interest rates tend to be _____ than rates for other _____.
14. Credit card companies may charge significant _____ related to a credit card and its use.
15. Borrowers who use credit cards for _____ and who do not pay the full balance when it is due, pay much _____ _____ for their purchases because interest is charged monthly.

16. Credit Card Payoff Calculations

Credit Card Balance	Interest Rate	Payment amount per month	Number of Months to payoff	Total Repayment	Total Interest Paid
$5,000	17%	$300			
$5,000	17%	$200			
$5,000	17%	$100			
$5,000	14%	$300			
$5,000	9%	$300			

Explain what happens to the total repayment as the interest rate increases and as the loan term increases.

What does this mean to you as a consumer?

17. Darnell has a credit card balance of $6877. The interest rate on this card is 16%. If he pays $100 per month, how long will it take him to pay off the balance?

18. What will be his total repayment?

19. Darnell spends $100 dollars a week eating out. His sister told him that if he would reduce this spending by $50 a week, he could increase his credit card payment to $300 per month. How much will he save if he takes his sister's advice?

20. How much will Darnell save by increasing his monthly payment by $200?

21. For each item listed below decide which is the best method to pay?

- Calvin's car broke down and needs a tow. He doesn't have enough money to cover the cost of the tow. How should he pay for this cost?

- Sabrina is hanging out at the mall with her friends. She sees a pair of jeans that she really likes. How should she pay?

- You've been saving for your college tuition, but this semester you are short $1200. How should you pay?

22. What questions do I need to ask when getting a loan?

23. What advice would you give a friend who is about to get a credit card?

24. What financial responsibilities are tied to borrowing?

Key 8.8-1 Name _____ Class Period _____

Borrower Beware

1. Describe what the ad is advertising.

Getting a loan from this company is easy even if you have bad credit. You can apply online. You will get loan quickly.

2. List reasons consumers borrow.
   - To pay for emergencies
   - To pay for college
   - To buy a car
   - To buy a house

3. What's Your Guess?
   e. What was the average credit card debt in 2012?
   Your guess: _____ Actual: $15,204

   f. What was the average student loan debt?
   Your guess: _____ Actual: $33,005

   g. What was the total American consumers owed in debt in 2012?
   Your guess: _____ Actual: $848 billion

   h. What was the total student loan debt in 2012?
   Your guess: _____ Actual: $1 trillion

4. Where can you get a loan?
   Bank
   Credit Union
   Credit Card
   Loan Companies

5. Financial institutions want to know your credit history and personal information such as:
   a. How much do you owe in debt?
   b. Do you make regular payments on your existing debt?
   c. What is your income?
   d. What is your net worth?

6. The annual percentage rate (APR) is the actual annual cost of the loan over the term of the loan.

7. How do you compare loans? Compare the APR.

8. Understanding Loans
a. Collateral is a piece of property that can be sold by the lender to recover all or part of a loan.
b. Secure loan is secured with collateral.
c. Unsecure loan is not secured with collateral. These loans have a higher interest rate.

9. Easy Access loans are sometimes called title loans or payday loans. They make it "easy" to get a loan.

10. Compare common loans

	Common Small Loan	**Easy Access Loan**
Loan Amount	$500	$500
Loan Term	12 months	14 days
Interest Rate	7%	n/a
Financial Fee	none	$50*
APR	**7.22%**	**260.71%**
Payment	$43.26 per month	$550 due in 14 days
Total Interest/Fees	$43.26 x 12 = **$519.12**	$500 + $50 = **$550**

*1st 14 day fee is $50, if renewed an additional $50 fee is required.

11. Loan Calculations

Loan Amount	Loan Term	Interest Rate per year (APR)	Monthly Payment	Total Repayment	Total Interest Paid
$5,000	2 years	4%	$217.12	$5,210.88	$210.88
$5,000	2 years	6%	$221.60	$5318.40	$318.40
$5,000	2 years	8%	$226.14.	$5427.36	$427.36
$5,000	2 years	10%	$230.72	$5537.28	$537.28
$5,000	3 years	4%	$147.62	$5314.32	$314.32
$5,000	4 years	4%	$112.90	$5419.20	$419.20

Explain what happens to the total repayment as the interest rate increases. As the interest rate increases, the total repayment increases.

Explain what happens to the total repayment as the loan term increases. As the loan term increases, the total repayment increases.

Credit Cards

12. A credit card purchase is a loan from the financial institution that issued the card.
13. Credit card interest rates tend to be higher than rates for other loans.
14. Credit card companies may charge significant fees related to a credit card and its use.
15. Borrowers who use credit cards for purchases and who do not pay the full balance when it is due, pay much higher costs for their purchases because interest is charged monthly.

16. Credit Card Payoff Calculations

Credit Card Balance	Interest Rate	Payment amount per month	Number of Months to payoff	Total Repayment	Total Interest Paid
$5,000	17%	$300	20	$6,000	$1,000
$5,000	17%	$200	31	$6,200	$1,200
$5,000	17%	$100	87	$8,700	$3,700
$5,000	14%	$300	19	$5,700	$700
$5,000	9%	$300	18	$5,400	$400

Explain what happens to the total repayment as the interest rate increases and as the loan term increases. As the interest rate increases, the total repayment increases. As the number of month to payoff increases, the total repayment increases.

What does this mean to you as a consumer? It is best not to use a credit card unless you can pay it off each month or if you have an emergency.

17. Darnell has a credit card balance of $6877. The interest rate on this card is 16%. If he pays $100 per month, how long will it take him to pay off the balance? 184 months

18. What will be his total repayment?
184 months x $100 = $18,400

19. Darnell spends $100 dollars a week eating out. His sister told him that if he would reduce this spending $50 a week he could increase his credit card payment to $300 per month. How much will he save if he takes his sister's advice?
28 months x $300 = $8400

20. How much will Darnell save by increasing his monthly payment by $200? $10,000

21. For each item listed below decide which is the best method to pay?

- Calvin's car broke down and needs a tow. He doesn't have enough money to cover the cost of the tow. How should he pay for this cost? Since this is an emergency, Calvin could use his credit card.

- Sabrina is hanging out at the mall with her friends. She sees a pair of jeans that she really likes. How should she pay?
  She should examine her budget. If she has money remaining for clothes and she has the cash, then she can buy it. She should ask herself if she really needs the jeans. If she doesn't need them or she doesn't have the cash, she shouldn't buy them.

- You've been saving for your college tuition, but this semester you are short $1200. How should you pay? Getting a college education will help you invest in your future. Evaluate your debt and talk to your parents first. If there are no other avenues to pay, consider getting a student loan.

22. What questions do I need to ask when getting a loan? What is the APR? What additional fees are charged? How long is the loan term?

23. What advice would you give a friend who is about to get a credit card? Sample responses: Only use your credit card if you know you can pay it off at the end of the month to avoid interest. Shop for a credit card that has low interest rates.

24. What financial responsibilities are tied to borrowing?

- If you borrow money, you are responsible for paying it back.
- If you borrow money, you are responsible for making your payments on time.
- It is not responsible to borrow money to purchase things you want. Borrow only if it is a necessity.
- If you have to get a loan or you have to use a credit card for emergencies, pay off your debt quickly to reduce the paid interest.

Signs 8.8-1

Loan Amount: $2500

Loan Term: 48 months

Interest (APR): 17%

Loan Amount: $2500

Loan Term: 42 months

Interest (APR): 17%

Loan Amount: $2500

Loan Term: 36 months

Interest (APR): 15%

Loan Amount: $2500

Loan Term: 42 months

Interest (APR): 10%

Loan Amount: $2500

Loan Term: 24 months

Interest (APR): 15%

Loan Amount: $2500

Loan Term: 42 months

Interest (APR): 7%

Loan Amount: $2500

Loan Term: 24 months

Interest (APR): 10%

Loan Amount: $2500

Loan Term: 36 months

Interest (APR): 6%

Borrower Beware

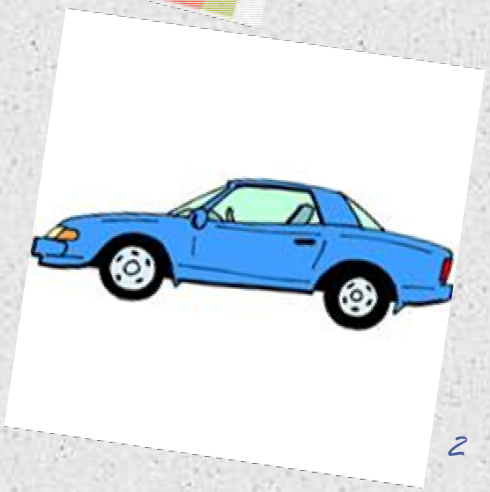
EASY Money
Loans Now

Request online

Approval within minutes

Bad Credit – Not a problem

Why Borrow?



Consumer Debt for 2012

Averages per US Household:

- Average credit card debt: **$15,204**
- Average mortgage debt: **$148,818**
- Average student loan debt: **$33,005**

Total American Consumers owe:

- $848 billion in credit card debt
- $7.93 trillion in mortgages
- $1 trillion in student loans
  - An increase of 11.9% from previous year

Source: http://www.nerdwallet.com/blog/credit-card-data/average-credit-card-debt-household/

Where can I get a loan?

- Bank
- Credit Union
- Credit Card
- Loan Companies

How do I qualify for a loan?

- Financial institutions want to know your credit history and personal information such as:
  - How much do you owe in debt?
  - Do you make regular payments on your existing debt?
  - What is your income?
  - What is your net worth?

What is APR?

- The annual percentage rate (APR) is the actual annual cost of the loan over the term of the loan.

- Since each lender has different loan terms, the federal government requires lenders to disclose the APR.

How do I compare loans?

Compare the APR.

Understanding Loans

- **Secure Loan:** Loan is secured with collateral. (Collateral is a piece of property that can be sold by the lender to recover all or part of a loan.)
- **Unsecure Loan:** Loan is not secured with collateral. These loans have a higher interest rate since there is no collateral.

What is a Payday or Title Loans?

- Easy access loans are sometimes called title loans or payday loans. They make it "easy" to get a loan. The high cost is due to the short time period of the loan and to the fee. When the interest rate or fee is calculated over the short time period, the Annual Percentage Rate (APR) will be huge.

How do payday loans work?

- A borrower signs over a personal check for collateral to get quick cash. The lender, who advertised 15% interest, agrees not to deposit the check until payday.
- Let's say you want to borrow $200 until you get your next paycheck in two weeks.
- Calculate the fee: 15% of $200 is $30.
- You write a check to a payday lender for $230
- The $30 fee you pay on the loan calculates to an Annual Percentage Rate (APR) of 391%.

Compare Small Loans

	Common Small Loan	**Easy Access Loan**
Loan Amount	$500	$500
Loan Term	12 months	14 days
Interest Rate	7%	n/a
Financial Fee	none	$50*
Annual Percentage Rate		
Payment		
Total Interest/Fees		

*1st 14 day fee is $50, if renewed an additional $50 fee is required.

Compare Small Loans

	Common Small Loan	**Easy Access Loan**
Loan Amount	$500	$500
Loan Term	12 months	14 days
Interest Rate	7%	n/a
Financial Fee	none	$50*
Annual Percentage Rate	**7.22%**	**260.71%**
Payment		
Total Interest/Fees		

*1st 14 day fee is $50, if renewed an additional $50 fee is required.

Compare Small Loans

	Common Small Loan	**Easy Access Loan**
Loan Amount	$500	$500
Loan Term	12 months	14 days
Interest Rate	7%	n/a
Financial Fee	none	$50*
Annual Percentage Rate	**7.22%**	**260.71%**
Payment	$43.26 per month	$550 due in 14 days
Total Interest/Fees		

*1st 14 day fee is $50, if renewed an additional $50 fee is required.

Compare Small Loans

	Common Small Loan	**Easy Access Loan**
Loan Amount	$500	$500
Loan Term	12 months	14 days
Interest Rate	7%	n/a
Financial Fee	none	$50*
Annual Percentage Rate	**7.22%**	**260.71%**
Payment	$43.26 per month	$550 due in 14 days
Total Interest/Fees	$43.26 x 12 = **$519.12**	$500 + $50 = **$550**

*1st 14 day fee is $50, if renewed an additional $50 fee is required.

How do I determine how much I will owe?

- Go to www.bankrate.com
- Choose Loan and amortization calculator
- Enter the following:
  - **Loan amount:** $5,000
  - **Loan term:** 2 years
  - **Interest rate:** 4%
  - **Loan start date:** Use today's date.

Monthly payment: $217.12

How do I determine how much I will owe?

- What is your total repayment?

  $217.12 x 24 months = $5210.88

- How much of the total repayment is interest?

  $5210.88 - $5000 = $210.88

What happens if you don't qualify for 4% interest?

- **Loan amount:** $5,000
- **Loan term:** 2 years
- **Interest rate:** 6%, 8%, or 10%
- **Loan start date:** Use today's date.

What happens if you increase the loan term?

- **Loan amount:** $5,000
- **Loan term:** 3 years or 4 years
- **Interest rate:** 4%
- **Loan start date:** Use today's date.

Credit Cards

- A credit card purchase is a loan from the financial institution that issued the card.
- Credit card interest rates tend to be higher than rates for other loans.
- Credit card companies may charge significant fees related to a credit card and its use.
- Borrowers who use credit cards for purchases and who do not pay the full balance when it is due, pay much higher costs for their purchases because interest is charged monthly.

How do I determine how much I will owe?

- Go to www.bankrate.com
- Choose Credit card payoff calculator
- Enter the following:
  - **Credit card balance:** $5,000
  - **Credit card interest rate:** 17%
  - **Payment amount per month:** $300

Number of months to payoff: 19 months

20 x $300 = $6000

What happens if you can't pay $300 per month?

- **Credit card balance:** $5,000
- **Credit card interest rate:** 17%
- **Payment amount per month:** $200 or $100

What happens if you change the interest rate?

- Credit card balance: $5,000
- Credit card interest rate: 9% or 14%
- Payment amount per month: $300

What are other fees that credit cards companies charge that are not calculated with the APR?

- A credit card company may charge an annual fee.
- A credit card company may charge a fee for each transaction.
- A credit card company will charge a late fee if the payment is not received by the due date.

Activity

- Use the online calculator to answer questions 17 – 21 on Activity 8.7-1.

What have you learned?

- *What questions do I need to ask when getting a loan?*
- What advice would you give a friend who is about to get a credit card?

What financial responsibilities are tied to borrowing?

- If you borrow money, you are responsible for paying it back.
- If you borrow money, you are responsible for making your payments on time.
- It is not responsible to borrow money to purchase things you want. Borrow only if it is a necessity.
- If you have to get a loan or you have to use a credit card for emergencies, pay off your debt quickly to reduce the paid interest.

Lesson Description

Students will learn the advantages and disadvantages of credit cards and debit cards. Students will analyze a credit card statement to better understand how quickly the fees and interest can accumulate and better understand the importance of keeping records. Students will use a random purchasing simulation to experience how overdraft fees with a bank account will accumulate.

Texas Essential Knowledge and Skills (Target standards)

PFL Math 8.12E identify and explain the advantages and disadvantages of different payment methods
PFL Math 8.12F analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility

Texas Essential Knowledge and Skills (Prerequisite standards)

Math 8.1: Mathematical Process Standards

National Standards (Supporting standards)

CEE - Council for Economic Education

CEE Buying 8.3: People choose from a variety of payment methods in order to buy goods and services.
CEE Credit 8.4: People often make a cash payment to the seller of a good—called a down payment—in order to reduce the amount they need to borrow. Lenders may consider loans made with a down payment to have less risk because the down payment gives the borrower some equity or ownership right away. As a result, these loans may carry a lower interest rate.

PFL Terms

- Credit card
- Debit card
- Online banking
- Bank transaction
- Withdraw
- Deposit
- Overdraft fee

Time Required

60 minutes

Materials Required

- A copy of **Activity 8.9-1a** and **Activity 8.9-1b** for each student
- A copy of **Visual 8.9-1**
- A copy of **Activity 8.9-2** for each student
- A copy of **Activity 8.9-3** for each student (copy one-sided)
- A blank sheet of paper for each student
- A pair of scissors for each student
- Tape for each group
- 2 index cards for each student
- A calculator for each student

Procedure

Engage

1. Place students in to groups of 4. Write the words "credit card" and "debit card" on the board. Instruct students to write down one thing that is the same and one thing that is different between the two cards. Direct students to share what they recorded with their group.

2. The teacher will write "same" and "different" on the board. Ask each group to contribute one similarity or one difference. The teacher will record the statement on the board. Once each group has contributed, ask the class if anyone has another similarity or difference that is not on the board. Record additional responses. Sample responses are listed below.

   Same: Both are small plastic cards. Both cards have a magnetic strip on the back. Both can be used to purchase goods or services. Both can be used to purchase goods online. The card owner for each card can monitor transactions online.

   Difference: The credit card owner is borrowing money from the financial company when a purchase is made, whereas the debit card owner is using funds from his or her account when making a purchase. With a credit card, the account owner may pay interest, whereas the owner of a debit card does not pay interest. Some credit cards offer reward incentives, whereas debit cards do not offer incentives.

Explain

3. Tell students that because of the differences, each card has its advantages and disadvantages. Say: *Understanding the advantages and disadvantages will help you as a consumer make better choices.* Explain to students that every consumer has a credit history that is maintained by credit bureaus in the form of a credit report. This credit report is a record of each consumer's credit use. Consumers who buy goods on credit; pay off the credit card bill each month; and pay on time can show lenders that they can be trusted to meet their financial obligations.

Explore

4. Distribute **Activity 8.9-1a**, a pair of scissors, 2 index cards, a blank sheet of paper and tape for each student. Ask students to write Credit Card on the top of the blank paper. Below the title make 2 columns. Label one column "Advantages" and the other column "Disadvantages." Cut out the cards on **Activity 8.9-1a**. With your group, read one card at a time. Decide if the card describes an advantage or disadvantage of a credit card. Tape each card in the appropriate column. If a card can be an advantage or a disadvantage, tape the card between the columns. Allow time for the students to complete this task.

Explain

5. Tell the students to write a large letter "D" on one of the index cards and a large letter "A" on the other of the card. The "D" will represent disadvantages and the "A" will represent advantages. As each credit card fact is read, have them respond by holding up the index card that corresponds with their work. If the credit card fact is both an advantage and a disadvantage, hold up both cards. After each student has responded, elaborate by using the red comments on the answer key. See the comments on **Key 8.9-**

1a.

6. Say: *For the next activity, you will investigate the advantages and disadvantages of debit cards issued with a bank account. An overdraft occurs when there is not enough money in a bank account to cover a withdrawal, purchase or electronic payment. Financial institutions offer an overdraft protection service. This means that if there is not enough money in the account, the bank will authorize the withdrawal, purchase or electronic payment for a fee. Suppose you have an electronic payment of $50 scheduled to pay your cell phone service for tomorrow and you have a $60 balance in your bank account. Before the bank transfers your money for payment, you make a $20 purchase with your debit card. Now your balance is $40. If you have overdraft protection service, the bank will authorize the electronic payment of $50. Now you have negative $10. Because you do not have the funds to cover the scheduled payment, the bank charges you an overdraft fee of $30. What is your balance?* ***(negative $40)***

7. *Consider the same scenario as above, but this time you do not have overdraft protection service. Since you do not have the money to cover the electronic payment, the bank denies the payment. The cell phone company does not receive your payment. Therefore, the cell phone company charges you a late fee and a negative report is sent to the credit bureau. Which scenario is more damaging? Consumers have to weigh the consequences and determine if the overdraft protection service is right for them. How can these fees be avoided?* ***(Keep track of your bank transactions.)***

Explore

8. Say: *Write Debit Card on the top back of your paper. Make 2 columns below the title and label one column "Advantages" and the other column "Disadvantages."* Distribute **Activity 8.9-1b** and a calculator. Cut out the cards on **Activity 8.9-1b**. With your group, read one card at a time. Decide with your group if the card describes an advantage or disadvantage of a debit card. Tape each card in the appropriate column of the paper. If a card can be an advantage or a disadvantage, tape the card between the columns. Allow time for the students to complete this task.

Explain

9. Tell students that you are going to read the debit card fact cards aloud. As each debit card fact is read, they are to respond by holding up the index card that corresponds with their work. If the debit card fact is both an advantage and a disadvantage, hold up both cards. After each student has responded, encourage elaboration by the students using the red comments on **Key 8.9-1b**.

10. Display **Visual 8.9-1**. Tell students these are important recommendations from the Federal Trade Commission for people who use a credit card. Read the recommendations.

Elaborate

11. Distribute **Activity 8.9-2**. Tell students that to better understand credit cards; they will examine a credit card statement. Ethan received his first credit card in the mail three months ago. When he applied for the card, he did not fully understand the terms of the card. Therefore he has made some poor choices while using the card. Examine the credit

card statement with your group then answer the questions that follow. Allow time for the groups to answer the questions.

12. Read the questions on **Activity 8.9-2**. Have students share their answers.

Elaborate

13. Distribute **Activity 8.9-3**. Tell students they will now examine Emily's spending habits with her new debit card. Read the story on the top of **Activity 8.9-3**.

    Emily is a freshman in college and lives in the dormitory. Her room and board have been paid with her college savings and a grant. She will be working 10-15 hours a week through the college work study program.

    She opened a student checking account with $150.00 check that her mom gave her. Emily was issued a debit card. The bank officer offered Emily an overdraft protection service. He explained that if there are insufficient funds to cover a purchase, the bank will pay for the purchase and charge an overdraft fee of $20 for each occurrence. If an attempt to withdraw funds from an ATM is made and there are insufficient funds in the account, the card will be denied. Emily decided to accept the overdraft protection service. The bank officer gave Emily a bank account register and explained that this will help her keep track of her money.

14. Explain that Emily did not keep track of her transactions as was recommended by the bank officer. The purpose of this exercise is to experience how easily it is to accumulate overdraft fees. Instruct students to cut out the cards, shuffle and stack face down. The cards represent Emily's purchases and one deposit. Tell students: *Turn one card over at a time. Record the transaction on the bank account register. After each entry calculate the balance. Each time the balance falls below $0, record an overdraft fee of $20.* Explain that each group member will enter the transaction in a different order due to the shuffling.

15. Before the students begin the activity, model how to use a bank account register. A sample is provided below.

Bank Account Register

Number or Code	Date	Description of Transaction	Withdrawal/ Payment/fee (-)			Deposit/ Credit (+)		Balance	
		Beginning balance						5	62
	3/12	Paycheck				82	00	87	62
	3/16	Go & Gas	33	15				54	47
	3/22	C&J Department Store	55	55				-1	08
		(work shoes)							
	3/22	Overdraft fee	20	00				-21	08

16. After all entries are made, instruct students to share with their group the number of overdraft fees they accumulated. Have them explain how it affected their final balance. Explain that financial institutions send out a notice either through mail or e-mail when an

account is charged an overdraft fee. It is the account owner's responsibility to read these notices.

Evaluate/End

17. To end the lesson, lead a classroom discussion by asking the questions below.

    a. For the bank register activity, who had a bank register that had one or more overdraft fees?

    b. How will these overdraft fees affect Emily? ***(She will have less money to spend. Emily is "throwing" money away.)***

    c. How could Emily have avoided the overdraft fees? ***(She could have kept track of her transactions.)***

    d. How much did Ethan have in fees and interest? ***($137.53)***

    e. How could Ethan have avoided the fees and interest? ***(Sample responses: He could have monitored his spending online. He could have paid his bill on time. He could have used his budget to determine how much he could afford to charge on the credit card.)***

    f. How would you describe the money Emily and Ethan spent on fees and/or interest? ***(Sample responses: It is money that was given away. It is money that could have been spent on expenses.)***

    g. What would be an example of responsible behavior when using a credit card? ***(Sample responses: Keep track of your spending. Don't spend more than you can pay. Monitor your account online. Don't give your account number to anyone.)***

    h. What would be an example of responsible behavior when using a debit card? ***(Sample responses: Keep track of your transactions. Monitor your account online. Don't give your account number or PIN to anyone. Read notices from the bank or credit union.)***

Activity 8.9-1a

Directions: On a blank sheet of paper, write Credit Card on the top of the page. Then draw two columns. Label the columns Disadvantages and Advantages. Cut out cards below. Tape each card in the column that best represents the card.

Credit Card

There are multiple ways a credit card account number can be stolen. Therefore credit card companies offer fraud protection for unauthorized charges.

Credit Card

Each month, the card holder receives a statement that lists all the purchases and credits for approximately a 30 day period.

Credit Card

With a credit card, the card holder can purchase goods and services needed even when the card holder does not have the cash.

Credit Card

With a credit card, it is easy for the card holder to spend beyond his or her means. Some college students get so far into debt that they ruin their credit history before they graduate.

Credit Card

Possible fees for credit cards include the following:

- fees for exceeding your credit limit
- annual fee to maintain credit card
- late fee for paying after the due date
- monthly fee for not using the card
- penalty for not paying the minimum amount owed

Credit Card

Credit card holders who pay on time will maintain or improve their credit history.

Credit Card

If the credit card owner does not pay off the credit card charges by the due date, interest charges for the unpaid balance will be added to the next statement.

Credit Card

Some credit cards offer rewards.

Activity 8.9-1b

Directions: On a blank sheet of paper, write Debit Card on the top of the page. Then draw two columns. Label the columns Disadvantages and Advantages. Cut out cards below. Tape each card in the column that best represents the card.

Debit Card The account owner may be responsible for up to $500 for fraudulent charges on the debit card.	Debit Card The account holder can monitor the transactions of the account online.
Debit Card To make a purchase with a debit card, the card holder swipes the card through a card reader and a Personal Identification Number (PIN) is entered.	Debit Card An overdraft fee is charged when the account owner does not have enough money to cover a transaction. Since purchases with a debit card transfers money out of the checking account, it is important to keep track of all payments, withdrawals, and deposits with this account.
Debit Card If you purchase an item that is damaged or defective, it is more difficult to dispute the purchase since the money has already been transferred from your account to the merchant's account.	Debit Card Consumers who use a debit card don't have to carry a checkbook or cash.
Debit Card If the account owner does not have enough money to cover a transaction, the bank may choose to deny the transaction.	

Key 8.9-1a

Credit Card

There are multiple ways a credit card account number can be stolen. Therefore credit card companies offer fraud protection for unauthorized charges.

Advantage – Keep the account number and the phone number of the credit card in a safe place. If your card is stolen or lost, call the company immediately. The maximum liability for the card holder is $50.

Credit Card

Each month, the card holder receives a statement that lists all the purchases and credits for approximately a 30 day period.

Advantage – Look over your statement carefully to make sure there are no unauthorized charges. Your statement can help you budget.

Credit Card

With a credit card, the card holder can purchase goods and services needed even when the card holder does not have the cash.

Advantage – Credit cards are very useful during emergencies. (Some may argue that this is a disadvantage. Since it is easy to use, it is also easy to overspend. Accept any reasonable argument.)

Credit Card

With a credit card, it is easy for the card holder to spend beyond his or her means. Some college students get so far into debt that they ruin their credit history before they graduate.

Disadvantage – Don't spend more than you can afford to pay. Make a budget and decide which items you will charge to you credit card. Or use your card for only emergencies.

Credit Card

Possible fees for credit cards include the following:

- fees for exceeding your credit limit
- annual fee to maintain credit card
- late fee for paying after the due date
- monthly fee for not using the card
- penalty for not paying the minimum amount owed

Disadvantage – Compare credit card fees when shopping for a card.

Credit Card

Credit card holders who pay on time will maintain or improve his or her credit history.

Advantage: The length you keep your credit card will also improve your credit. Late or missed payments will stay in your credit history for 7 years.

Credit Card

If the credit card owner does not pay off the credit card charges by the due date, interest charges for the unpaid balance will be added to the next statement.

Disadvantage - If interest is added to the purchase price of a good or a service, the price actually paid for the item will be more than the original purchase price.

Credit Card

Some credit cards offer rewards.

This can be an advantage or disadvantage. For consumers who pay off their credit card every month and pay no fees, the reward is free. For someone who uses the card frequently to earn reward points, but doesn't pay off the balance each month and or pays fees, these people are paying for the reward.

Key 8.9-1b

Debit Card The account owner may be responsible for up to $500 for fraudulent charges on the debit card. Disadvantage – Federal Trade Commission explains, "If you report an ATM or debit card missing before someone uses it, the EFTA says you are not responsible for any unauthorized transactions. If someone uses your ATM or debit card before you report it lost or stolen, your liability depends on how quickly you report it." [Source; http://www.consumer.ftc.gov/articles/0213-lost-or-stolen-credit-atm-and-debit-cards]	Debit Card The account holder can monitor the transactions of the account online. Advantage – Compare your bank account register to the online account often. It will help you identify transactions you forgot to record or any unauthorized transactions.
Debit Card To make a purchase with a debit card, the card holder swipes the card through a card reader and a Personal Identification Number (PIN) is entered. Advantage – If your card is lost or stolen, this feature will provide some protection. However, some debit cards can be used as a credit card. If the card is used as a credit card, the PIN will not be required. You will not get a statement showing you owe the bank. It only delays the transaction.	Debit Card An overdraft fee is charged when the account owner does not have enough money to cover a transaction. Since purchases with a debit card transfers money out of the checking account, it is important to keep track of all payments, withdrawals, and deposits with this account. Disadvantage –Bankrate.com reports the median fee for overdrafts is $27. [Source: http://www.bankrate.com/finance/investing/fdic-study-outrageous-overdraft-fees-1.aspx]
Debit Card If you purchase an item that is damaged or defective, it is more difficult to dispute the purchase since the money has already been transferred from your account to the merchant's account. Disadvantage – If the item is ordered online and does not arrive, the credit card must remove questionable charges while it investigates. With a debit card, the money is transferred out of the account immediately. The bank or credit union is not obligated to investigate.	Debit Card Consumers who use a debit card don't have to carry a checkbook or cash. Advantage – Remember to keep your receipt and use your bank account register to keep track of your transactions.

Debit Card	
If the account owner does not have enough money to cover a transaction, the bank may choose to deny the transaction. This can be an advantage or disadvantage. The advantage is that the account owner will not have to pay an overdraft fee. The disadvantage is that the account owner cannot make the purchase.	

Visual 8.9-1

Credit Card

Federal Trade Commission Recommendations:

- Don't give your account number to anyone on the phone unless you've made the call to a company you know to be reputable. If you've never done business with them before, do an online search first for reviews or complaints.
- Carry your cards separately from your wallet. It can minimize your losses if someone steals your wallet or purse. Carry only the card you need for that outing.
- During a transaction, keep your eye on your card. Make sure you get your card back before you walk away.
- Never sign a blank receipt. Draw a line through any blank spaces above the total.
- Save your receipts to compare with your statement.
- Open your bills promptly — or check them online often — and reconcile them with the purchases you've made.
- Report any questionable charges to the card issuer.
- Notify your card issuer if your address changes or if you will be traveling.
- Don't write your account number on the outside of an envelope.

Source: http://www.consumer.ftc.gov/articles/0216-protecting-against-credit-card-fraud

Activity 8.9-2 Name _____ Class Period _____

Directions: Ethan received his first credit card in the mail three months ago. When he applied for the card, he did not fully understand the terms of the card. Therefore he has made some poor choices while using the card. Examine the credit card statement with your group then answer the questions that follow.

Best Credit Card

Primary Account Number Ending in: 4322
Statement Billing Period: 03/03/2013 – 04/02/2013

Activity Summary

Previous Balance	$562.10
- Payments	$25.00
+ Purchases	$236.94
- Other Credits	$0.00
+ Cash Advances	
+ Late Fee	$35.00
+ Interest Charged	$102.53
Statement Balance	$911.57

Account Summary

Payment Due Date	May 1, 2013
Minimum Payment Due	$25.00
Previous Balance	$562.10
Statement Balance	**$911.57**

Date	Transaction Description	Amount
	Payment	
03/07	Electronic Payment	-$25.00
	Purchases	
03/05	A&C Gas Mart	$62.11
03/06	Red's Bistro	$12.80
03/15	Maia's Magic Flowers	$53.72
03/18	Suzie's Cafe	$21.72
03/25	Black and Gray Department Store	$86.59

If you make no additional charges using this card and each month you pay . . .	You will pay off the balance shown on this statement in about . . .	The estimated total you will pay is about . . .
Minimum payment due	4 ½ years	$1400.00
$60.00	1 ½ years	$1140.00

Directions: Use Ethan's credit card statement on the previous page to answer the questions below.

1. How much will Ethan pay in late fees this month? _____
2. How much will Ethan pay in interest this month? _____
3. How much of the previous balance was paid off last month? _____
4. Why was the last table included in the statement? _____

_____

_____

5. What is the total amount of purchases? _____
6. When is the payment for this statement due? _____
7. What recommendations would you offer Ethan to help him avoid additional debt?

_____

_____

_____

Key 8.9-2a

Directions: Use Ethan's credit card statement on the previous page to answer the questions below.

1. How much will Ethan pay in late fees this month? *$35.00*
2. How much will Ethan pay in interest this month? *$102.53*
3. How much of the previous balance was paid off last month? *$25.00*
4. Why was the last table included in the statement? *The credit card company wants to illustrate that the greater the monthly payment, the less the card owner will pay.*
5. What is the total amount of purchases? *$236.94*
6. When is the payment for this statement due? *May 1, 2013*
7. What recommendations would you offer Ethan to help him avoid additional debt? *Sample responses: If Ethan pays his bill on time, he can avoid the late fee. Ethan should pay as much above the minimum payment as possible to decrease the interest. Ethan should consider not using his credit card until the balance is paid off.*

Activity 8.8-3 Name _____ Class Period _____

Emily is a freshman in college and lives in the dormitory. Her room and board have been paid with her college savings and a grant. She will be working 10-15 hours a week through the college work study program.

She opened a student checking account with a $150.00 check that her mom gave her. Emily was issued a debit card. The bank officer offered Emily an overdraft protection service. He explained that if there are insufficient funds to cover a purchase, the bank will pay for the purchase and charge an overdraft fee of $20 for each occurrence. If an attempt to withdraw funds from an ATM is made and there are insufficient funds in the account, the card will be denied. Emily decided to accept the overdraft protection service. The bank officer gave Emily a bank account register and explained that this will help her keep track of her money.

Bank Account Register

Number or Code	Date	Description of Transaction	Withdrawal/ Payment/fee (-)			Deposit/ Credit (+)		Balance	
	9/1	Check from mom				150	00	150	00

Directions: Emily did not keep track of her transactions as the bank officer recommended. Below are her purchases and one deposit. Cut out the cards, shuffle and stack face down. Turn one over at a time and record on the bank account register. After each entry calculate the balance. Each time the balance falls below $0, record an overdraft fee of $20.

Debit Card Purchase Smoothie Place: $4.59	Electronic Payment Cell phone bill: $62.44
Debit Card Purchase Gasoline: $35.00	Debit Card Purchase Supermarket: $28.55
Debit Card Purchase Football tickets: $8.00	Debit Card Purchase Smoothie Place: $4.59
Debit Card Purchase Book store: $44.98	Debit Card Purchase Book store: $8.72
Debit Card Purchase Manicure: $25	Automatic Deposit Paycheck: $119.25
Debit Card Purchase Burger Place: $9.53	Debit Card Purchase Junior Line Clothing: $32.01

Lesson Description

The costs of college, costs of living, and demands for jobs are ever changing. Through this lesson, students will learn how to use Internet tools to access current information. With these Internet tools, students will learn how to plan for their post-secondary education. Students will learn how to estimate the cost of a two-year or four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the 1st year of college.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 8.12G:** Estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the 1st year of college.

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 8.1A:** Apply mathematics to problems arising in everyday life, society, and the workplace.
- **Math 8.1B:** Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
- **Math 8.1D:** Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.

National Standards (Supporting standards)

CEE - Council for Economic Education

- **CEE Savings 8.7:** The value of a person's savings in the future is determined by the amount saved and the interest rate. The earlier people begin to save, the more savings they will be able to accumulate, all other things equal, as a result of the power of compound interest.

PFL Terms

- Saving
- Contribution
- Occupation
- Earnings
- Financial aid

Time Required

60 minutes

Materials Required

- A copy of **Visual 8.10-1**
- A copy of **Activity 8.10-1** for each student and one for a visual
- Computer and Internet access for each student

Procedure

Engage

1. Ask students if they have thought about which occupation they would like to pursue. Ask students to respond to the statements below by standing if the statement applies to them or sitting down if the statement does not apply to them.

a. I know what occupation I would like to pursue after high school graduation.

b. I would like to pursue an occupation in public service, such as law enforcement.

c. I would like to pursue an occupation in education, such as teaching or school administration.

d. I would like to pursue an occupation in journalism.

e. I would like an occupation that uses science.

f. I would like an occupation that uses math.

g. I would like an occupation that uses social studies such as history, geography, government, archaeology, or anthropology.

h. I would like an occupation that uses reading and/or writing skills.

i. I would like an occupation that allows me to use my hands to build or develop products.

j. I would like to pursue an occupation in _____ (ask students for input).

k. I know what type of education I will need to achieve my occupational goal.

l. I know if my occupational goal will require either a two-year or four-year college degree.

m. I know if my occupational goal will require technical or trade training after high school.

n. I can estimate the cost of the education required to achieve my occupational goal.

Explain

2. Tell students that choosing an occupation now will help them set goals. They will most likely change their occupational goals several times before completing college. Many people choose several occupations in their lifetime. As the economy and the world change, so will their choices for occupations change.

3. Display **Visual 8.10-1**. Tell the students to look at the table of information about various occupations, including the preferred education to obtain each occupation as well as the estimated hourly wage. Use the explanation below for OJT.

   On-the-Job Training (OJT) provides opportunities for employees to "learn as they earn". OJT provides knowledge or skills essential to the full and adequate performance of the job. The employer benefits by being reimbursed for part of the participant's wages during the training period, while having the services of a full-time employee.

4. With a partner, study the table on **Visual 8.10-1**. Then identify 4 important points that this table conveys. ***(Sample responses include: The average hourly wage is higher for those occupations requiring a degree. A fast growing occupation is medical secretary. The demand for some occupations is growing faster than others. The data is specific to Texas.)*** Tell students that as they consider future occupations, they should consider the future outlook. *Will there be jobs available for the occupation you plan to pursue? Will your occupational plan provide for your lifestyle and/or future family? How much will you need to invest in yourself to reach this goal? How will you obtain funding to pay for the post-secondary education that you will need?*

Explore

5. Take students to a computer lab with Internet access. Distribute **Activity 8.10-1**. Tell students the purpose of this activity is to help them estimate the cost of college and devise a savings plan that will help them contribute to the cost of attendance for at least the first year. Before they can do this, the students will take time to explore occupations and colleges that offer training for their occupational choice or offer degree options that will prepare them for the occupation of their choice. Part 1 is a self-directed lesson. Instruct the students to follow the directions on **Activity 8.10-1** for part 1.

6. If neither Occupation 1 nor Occupation 2 provided for all expenses for a particular student, encourage them to repeat the process a third time. Each student will need an occupation in mind that will provide for all of their expenses in order to move on with the lesson.

7. Tell students that now that they have an idea about an occupation they would like to pursue, they can focus on a post-secondary school at which to prepare.

8. Directions for part 2: Instruct students to go to the U.S. Department of Education's College Affordability and Transparency Center, College Scorecard website: http://collegecost.ed.gov/scorecard/index.aspx.

Explain

9. Direct student's attention to the row above the scorecard. Read these criteria: *College Locations, Types of College, My Area of Interest, and Popular Criteria.* Ask them to rank these criteria in the order of what is most important to them when selecting a college. Write these criteria on the board. Then ask students to raise their hand if the criterion you call out was selected as their top criterion. Record the number of students that choose each criterion as their top selection. Then allow a few students to share why each criterion is important to them.

10. Click on one of the criterion (College Locations, Types of College, My Area of Interest, and Popular Criteria). Then ask students to identify which cards in the top row of the scorecard are descriptions of the item selected. ***(Sample response: When selecting college locations, zip code, state and region are 3 cards on the top row that describe a way to select a college by location.)***

11. Tell the students you will model how to use the scorecard by investigating possible colleges in Texas to study to become an electrician. Follow the steps below:

    a. Tell students that because location is an important criteria for me, I will choose

begin with College Location. Click on *College Location*.

b. Click on *State*.

c. From the drop down menu, select *Texas*.

d. Then, click the Add Criteria button to include this in the search.

e. Notice that *College Location: Texas* is added to the left bar in the white space on the web site.

f. Click on the *Occupation card*.

g. Click in the checkbox beside Electricians

h. Then, click the *Add Criteria* button to include this in the search.

i. Notice that *My Area of Interest: Electricians* is added to the left bar in the white space on the website.

j. On the left, click on *Search Institution*.

k. Notice there are 11 institutions listed that fit both criteria, in Texas, and electrician.

l. Click on *Brazosport College in Lake Jackson, Texas*.

m. Notice the average net price for undergraduate in-state students is $5,068 per year at Brazosport College. The net price includes tuition, fees, and living costs.

n. Click *Back to Search* to return to the list of institutions to investigate the remaining 10.

o. To remove a certain criterion, hover your mouse over the one to remove, for example, Texas, and click on the x to remove.

Explore

12. Tell students to use the website to find the scorecard for a college of interest to them (one that includes a certain program or major, in a desired location, or of a particular enrollment size). Tell students that if their search returns the message below, it may be that they chose an occupation that requires no college education.

"Your search option returned no results."

13. Instruct students to complete the remaining portion of Part 2.

Explain

14. Use the following questions to promote class discussion:

a. What factors may decrease the total amount of money you will need your first year of college? ***(whether the student qualifies for grants, scholarships, work-***

study, or student loans)

b. If you know the remaining amount of money you will need your first year of college, not including amounts gained through grants, scholarships, work study, or student loans, how can you determine how much you should save each year of high school? ***(Divide the remaining amount needed by 4 to determine the savings goal per year of high school.)***

c. What factors may influence the amount you are able to save each year? ***(Possible response: Whether I can get a job; whether I can reduce my expenses; whether I have financial obligations.)***

15. Directions for Part 3: Explain that current interest rates for savings accounts, money markets and Certificates of Deposits are at an all-time low. Regardless of the low rates, a post-secondary education will foster a secure prosperous future. The more money saved now, the less money a student will borrow for an education. Students who have access to a savings account are 4 times more likely to go to college. If the savings account is in their name, they are 7 times more likely to go to college. [Source: Elliott and Beverly in the paper The Role of Savings and Wealth in Reducing "Wilt" Between Expectations And College Attendance (2010), http://csd.wustl.edu/Publications/Documents/WP10-01.pdf]

16. Direct students' attention to Part 3, question 1. Ask: *What are ways an 8th grader can start saving for college?* Have students work with a partner to develop a list.

17. Ask students to share their ideas. Write their ideas on the board. ***(Sample responses: Students can save their earnings from chores, babysitting, and mowing. Students can be smart shoppers and shop for economical deals.)***

18. Explain that adults often make tradeoffs when trying to save for an expensive item such as a car or a house. A tradeoff is giving up of one thing for another. For example, if an adult is saving to purchase a car, he or she may give up eating out or reduce the amount of money that is spent on entertainment. The money that is saved will be used to purchase the car. Ask what tradeoff might a student make to save money? ***(Sample response: A student who spends $5 per week buying sodas out of the coke machine might choose to only spend $2 per week on sodas and save $3.)***

Explore

19. Instruct students to complete number 2 and 3 on Part 3.

20. Read number 4 to students.

    Anthony and his parents devised the college savings plan using the worksheet below. Calculate each of Anthony's savings ideas for column 2. Record the total for each savings idea in column 3. For the last row, calculate the total of Anthony's savings goal.

Explain

21. After students have completed Anthony's College Savings Worksheet, use key to go over calculations.

22. Direct students attention to Part 4 of **Activity 8.10-1**. Explain that the cost of college is expensive. However many students will qualify for financial aid. Read the financial aid

options on Part 4 or show video at http://studentaid.ed.gov/types.

23. Directions for Part 5: Encourage students to complete Part 5 with their parents. Explain that this activity will not be collected for a grade. Remind students that the purpose of this activity is to give them the tools to begin planning for their post-secondary education.

End/Evaluate

24. To end the lesson, ask the questions below.

    a. What Internet tool can be used to select a career? ***(http://www.texasrealitycheck.com/)***

    b. What Internet tool can be used to select a college? ***(http://collegecost.ed.gov/scorecard/index.aspx, http://www.collegefortexans.com/)***

    c. Why save for college? ***(Sample responses: The more you save now for college, the less you will need to borrow later. Students with college savings accounts are more likely to go to college.)***

    d. Why go to college? ***(Sample responses: The more education you obtain, the more money you are likely to make. The more education you have, the greater the opportunity for employment.)***

Extension

Next, paraphrase the statement below and discuss the information with the students. The Bureau of Labor and Statistics (BLS) reports that total employment is expected to increase by 20.5 million jobs from 2010 to 2020, with 88 percent of detailed occupations projected to experience employment growth. Industries and occupations related to health care, personal care and social assistance, and construction are projected to have the fastest job growth between 2010 and 2020. Jobs requiring a master's degree are expected to grow the fastest, while those requiring a high school diploma will experience the slowest growth over the 2010–20 timeframe. Slower population growth and a decreasing overall labor force participation rate are expected to lead to slower civilian labor force growth. [Source: http://bls.gov/ooh/about/projections-overview.htm]

After reading this, ask students how their ideas of new and different careers/occupations fit with the above statement. Have students share answers with a partner and then have several students share with the class.

Visual 8.10-1

Occupational Information for Texas

Occupational Title	Preferred education	Average Hourly Wage in 2011 for Texas	Projected Employment Change from 2010 to 2020
Medical Secretary	Moderate OJT	$14.23	43.20%
Registered Nurse	Associate's/Bachelors	$32.49	33.10%
Manager of Food Prep Workers	Related Work Experience	$14.12	27.10%
Pharmacist	Master's degree	$54.60	25.10%
Welder	Post-secondary Vocational Training	$18.05	23.70%
Accountant	Bachelor's degree	$33.71	22.60%
Hair Dresser	Post-secondary Vocational Training	$12.20	20.70%
Civil Engineer	Bachelor's degree	$43.15	20.50%
Customer Service Representative	Moderate OJT	$14.61	20.00%
Truck Driver (heavy/tractor trailer)	Short term OJT	$17.89	19.40%
Retail Salesperson	Short term OJT	$11.62	16.90%
Non-technical Sales Rep, WH & Man	Related Work Experience	$30.22	15.10%
Manager of Retail Workers	Related Work Experience	$19.53	14.60%
Automotive Mechanic	Post-secondary Vocational Training	$17.78	13.70%
Switchboard Operator	Short term OJT	$12.07	-20.50%

OJT – On the job training

Source: Texas Workforce Commission, http://www.texascaresonline.com/

Activity 8.10-1 Name _____ Class Period _____

Part I: Choose an Occupation

a. Go to http://www.texasrealitycheck.com/; choose *Occupation Direct.*
b. Choose an occupation.
c. Record your results under Occupation 1 in the table below.
d. Click on the arrow (How much can you purchase with this Monthly Income?).
e. Choose where you would like to live after graduation.
f. Then choose your expenses (savings, housing, utilities, food, transportation, clothing, health care, personal, entertainment, miscellaneous, student loan debt).
g. Determine if this occupation will provide for all of your expenses. Record the answer (yes or no) in the space on the table below.
h. Go back to http://www.texasrealitycheck.com/ and repeat the above steps for Occupation 2

Occupation	**Occupation 1:**	**Occupation 2:**
Annual Salary (Income earned each year)		
Taxes (Federal income taxes based on annual salary)		
Remaining Annual Income (Annual salary, decreased by taxes)		
Monthly Income Remaining Annual Income divided by 12 months		
Will this occupation provide for all of my expenses?		

Part 2: Choose a College

1. Go to http://collegecost.ed.gov/scorecard/index.aspx.
2. Rank the importance of the following criterion: *College Locations, Types of College, My Area of Interest, and Popular Criteria.*
   1)
   2)
   3)
   4)
3. STOP. Your teacher will model how to use this tool based on his or her criterion.
4. Use your preferred occupation to explore 3 colleges.
   Occupation: _____

	College 1	College 2	College 3
Name of College			
Net Price*			

* Net price is what undergraduate students pay after grants and scholarships (financial aid you don't have to pay back) are subtracted from the institution's cost of attendance.

Part 3: Devise a Savings Plan

Students who have access to a savings account are 4 times more likely to go to college. If the savings account is in their name, they are 7 times more likely to go to college. [Source: Elliott and Beverly in the paper The Role of Savings and Wealth in Reducing "Wilt" Between Expectations And College Attendance (2010), http://csd.wustl.edu/Publications/Documents/WP10-01.pdf]

1. What are ways an 8th grader can start saving for college?

2. How much do you think you can save per month? _____

3. What tradeoffs will you need to meet this goal?

4. Anthony, who is currently in 8th grade and his parents, devised a college savings plan using the worksheet below. First Anthony determined the number of months till he begins college is 52. Next, Anthony and his parents listed savings ideas in column 1.

   Complete this worksheet by completing the calculations in column 2 for each of Anthony's savings ideas. Then record the total for each savings idea in column 3. For the last row, calculate Anthony's savings goal.

Anthony's College Savings Worksheet
Number of months till college: 52

Savings Ideas	Calculations	Savings
My current college savings: *$233.00*		$233.00
My weekly savings contribution: *I receive $10.00 allowance. I will save $2.00 per week.*	Weekly savings x 4 weeks per month x number of months till graduation $2.00 x 4 weeks x 52 months =	
My parent's monthly savings contribution: *$25.00 monthly*	Monthly savings x number of months till college $25 x 52 months =	
My estimated summer job contribution: *Grade 8 – 9: $0* *Grade 10: $100 (babysitting)* *Grade 11: $200 (employment)* *Grade 12: $400 (employment)*	Estimated contribution from summer earnings $100 + $200 + $400 =	
Other: *Birthday money*	*I receive about $50 each birthday. I will deposit half into my college savings.* $25 x 4 years =	
	My college savings goal:	

Part 4: Understand Financial Aid

- **Grants and scholarships** are often called "gift aid" because they are free money—financial aid that doesn't have to be repaid. Grants are often need-based, while scholarships are usually merit-based. [Source: http://studentaid.ed.gov/types/grants-scholarships]

- **Loan** - borrowed money for college or career school; you must repay your loans, with interest [Source: http://studentaid.ed.gov/types]

- **Work study** - a work program through which you earn money to help you pay for school [Source: http://studentaid.ed.gov/types]

After January 1 of your senior year of high school, complete the Free Application for Federal Student Aid by going to http://www.fafsa.ed.gov/. The office of Federal Student Aid provides grants, loans, and work-study funds for college or career school.

Part 5: Plan with Your Parents

Savings accounts are not the only avenue for saving for college. Explore the websites below with your parents to find other opportunities to save and pay for college.

1. Learn what middle school students can do now to prepare for college. Learn the tax advantages of saving and find a link to a clearinghouse of state college savings plans. http://studentaid.ed.gov/prepare-for-college/checklists/middle-school
2. Use the FAFSA4caster to estimate your eligibility for financial assistance. http://studentaid.ed.gov/fafsa/estimate
3. Consider using the worksheet below with your parents to devise a college savings plan. Use Anthony's College Savings Worksheet on previous page as a guide.

My College Savings Worksheet

Number of months till college: _____

Savings Ideas	Calculations	Savings
My current college savings:		
My weekly savings contribution:	Weekly savings x 4 weeks per month x number of months till college	
My parent's monthly savings contribution:	Monthly savings x number of months till college	
My estimated summer job contribution:	Estimated contribution from summer earnings	
Other:		
	My college savings goal:	

Key

4. Anthony, who is currently in 8th grade, and his parents devised a college savings plan using the worksheet below. First Anthony determined the number of months till he begins college is 52. Next, Anthony and his parents listed savings ideas in column 1.

   Complete this worksheet by calculating Anthony's savings ideas. Then record the total for each savings idea in column 3. For the last row, calculate Anthony's savings goal.

Anthony's College Savings Worksheet
Number of months till college: 52

Savings Ideas	Calculations	Savings
My current college savings: *$233.00*		$233.00
My weekly savings contribution: *I receive $10.00 allowance. I will save $2.00 per week.*	Weekly savings x 4 weeks per month x number of months till graduation $2.00 x 4 weeks x 52 months = *$416*	*$416.00*
My parent's monthly savings contribution: *$25.00 monthly*	Monthly savings x number of months till college $25 x 52 months = *$1300*	*$1300.00*
My estimated summer job contribution: *Grade 8 – 9: $0* *Grade 10: $100 (babysitting)* *Grade 11: $200 (employment)* *Grade 12: $400 (employment)*	Estimated contribution from summer earnings $100 + $200 + $400 = *$700*	*$700.00*
Other: *Birthday money*	*I receive about $50 each birthday. I will deposit half into my college savings.* $25 x 4 years = *$100*	*$100.00*
	My college savings goal:	*$2749.00*