Minnesota Council on
ECONOMIC
EDUCATION
Bringing Economics to Life

MAKING PERSONAL FINANCE DECISIONS

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Table of Contents

MAKING PERSONAL FINANCE DECISIONS
Unit One: Thinking Economically

Rule 1: Think before you act.

Personal finance is largely about making decisions. Making good decisions is a process involving determining what your options are, evaluating those options with respect to what is important to you, considering trade-offs ("weighing the gain and the pain"), and understanding that all decisions involve a cost. These lessons introduce this process which will be used in many of the following units.

A. THE WEALTH GAME: FACTORS FOR SUCCESS

Lesson Description

Students play "The Wealth Game" (based on "Market Exchange and Wealth Distribution: A Classroom Simulation" by Robert B. Williams, *Journal of Economic Education,* Fall, 1993). Students are given an initial endowment of colored beads with a defined value and are given the task of increasing the value of this endowment through trade with other students. Individual student outcomes of the game are discussed in terms of four primary factors: ability, effort, motivation, and luck.

Concept

Determinants of wealth

Objective

Students will be able to describe personal characteristics and skills which are important in their financial success and explain why they are important.

Materials

430 beads (for class of 30) in 5 different colors and amounts: 140, 120, 90, 50, and 30.
30 plastic sandwich/snack bags
Large (paper grocery) bag
Activity 1-1: The Wealth Game (a copy for each student)

Time Required

45 minutes

Procedure

1. Before class prepare initial endowments by placing colored beads into small plastic sandwich bags according to the table below (different colors can be substituted). Plastic bags allow the students to easily see what they have without spilling. Create "Poor" bags for one-third of the class, "Middle-class" bags for one-third of the class, and "Rich" bags

for one-third of the class. *(Teacher note: Other distributions could be used to demonstrate the effect of different wealth distributions.)* Place all the prepared plastic bags into a larger bag that students can not see through (such as a paper grocery bag).

Initial Endowments

Color	Poor	Middle-class	Rich
Orange	**5**	**5**	**4**
Blue	**2**	**5**	**5**
Yellow	**2**	**2**	**5**
Green	**1**	**2**	**2**
Red	**0**	**1**	**2**

2. Tell the class they are going to play a game where the goal is to increase the value of the bag of beads they will receive by trading with other students in the room.

3. Have students randomly select a plastic bag from the larger bag.

4. Hand out a copy of Activity 1-1 to each student.

5. Explain to the class that Activity 1-1 describes how to calculate the total value of their bag. Note that the value depends not only on the number of each color of bead they have, but also on the number of complete sets of three and the color. Use the following example to be sure students understand the scoring system:

Suppose you had 11 Blue and 2 Red beads. Then on the "Blue" line you would write 11 under "Number." Since you have three complete sets of three (one short of having four), you would circle the "1" and the "2" and the "3" under "Threes of a Kind." This would give you a "Bonus" of 6 (1+2+3). Adding the "Number" to the "Bonus" results in a "Total" of 17. Since the value of Blue beads is 2, your "Total Points" would be 34. For the Red beads you would write 2 under "Number." Since you don't have any complete sets of three, the "Bonus" would be 0 and the "Total" would be just 2 (2 + 0). Since the value of red beads is 10, your "Total Points" would be 20 (2 x 10). Adding up the total points from the Blue and Red beads would yield a "Total Value" of 54 (34 + 20). *(Teacher note: This system is a bit complicated by design to illustrate later the effect of abilities and effort.)*

6. Have students calculate the value of their initial endowment on Activity 1-1. Students should have one of three Total Values: 25, 50, or 75 points. Go around the room and quickly check. If a student has another value, help them recalculate. *(Some students will have trouble with the necessary calculations, but it is important to get them started with the correct value.)*

7. Explain to the class that their initial endowment was essentially based on luck (drawing their bag). Note that there are three levels of wealth: "poor" (25 points), "middle-class" (50 points), and "rich" (75 points). Explain that the goal of the game is to

increase their points by trading with other students in the room. Tell the students that they are only competing against students in their own wealth class, so there will be three winners. Remind the students of the scoring system and the importance of not only color, but getting sets of three. Also explain that they may make trades with anyone in the room and can make any type of trade they want (any number of beads for any number of other beads).

8. Allow students to trade for 5-10 minutes.

9. Stop trading and have students determine the intermediate value of their bag on Activity 1-1. Have students exchange their sheets and bags with another student to "audit" the results. Most students should have increased the value of their bag. If not, it means they made a trade which actually made them worse off. Note that since all trades are voluntary, both traders should be gaining from the trade.

10. Resume trading for another 5-10 minutes. *(Optional: Just have one trading round. The advantage of stopping in the middle is that it allows some students a moment to think about what they have done and need to do.]*

11. Stop trading and have students determine the final value of their bag on Activity 1-1. Again have students exchange sheets and bags to audit each others report.

12. Have each group (poor, middle-class, and rich) report their final positions. Determine who in each wealth class increased the value of their bag the most. *(Optional: Award prizes to those students. Most students will have increased the value of their bag, some to the next wealth level. The "rich" will have likely increased the value of their bag by both the largest absolute and relative amount, where the relative amount is the percentage change.)*

13. Discuss the factors that were most important in determining how much a student increased the value of his or her bag. *(Four factors are important here: (1) luck--both with respect to the initial endowment and to finding the right trading partners; (2) natural abilities--math skills to figure out which trades were beneficial and bargaining/negotiating skills; (3) effort—willingness to figure things out, find trades, keep playing; and (4) motivation--desire to improve their position, win a prize, succeed.)*

14. Closure: Explain that these exact same factors will be important in the students' financial lives. They are the basic **determinants of wealth**. While luck will play a role (being born into a wealthy family/nation or having the right connection to land a job), they can still be successful by acquiring education and training (which increases their skills), by putting forth their best efforts (study hard and work hard) and by staying motivated (not giving up and not settling for less than they want).

ACTIVITY 1-1: THE WEALTH GAME

Directions for determining the Total Value of Your Bag of Beads

For each color of bead do the following:
1. Count the total number and write that in the "Number" column
2. Count the number of complete sets of three and circle a number for each set (for example, if you have three complete sets, you would circle "1" and "2" and "3")
3. Add up the circled numbers and enter the sum in the "Bonus" column
4. Add "Number" and "Bonus" and enter the sum in "Total" column
5. Multiply "Total" by "Value" and enter the product in "Points" column
6. Finally, add all figures in "Points" column to get "Total Value"

Initial Endowment

Color	Number	Sets of Three	Bonus	Total	Value	Points
Orange	_____	1 2 3 4 5	_____	_____	X 1 =	_____
Blue	_____	1 2 3 4 5	_____	_____	X 2 =	_____
Yellow	_____	1 2 3 4 5	_____	_____	X 4 =	_____
Green	_____	1 2 3 4 5	_____	_____	X 7 =	_____
Red	_____	1 2 3 4 5	_____	_____	X 10 =	_____

TOTAL VALUE = _____

Intermediate Position

Color	Number	Sets of Three	Bonus	Total	Value	Points
Orange	_____	1 2 3 4 5	_____	_____	X 1 =	_____
Blue	_____	1 2 3 4 5	_____	_____	X 2 =	_____
Yellow	_____	1 2 3 4 5	_____	_____	X 4 =	_____
Green	_____	1 2 3 4 5	_____	_____	X 7 =	_____
Red	_____	1 2 3 4 5	_____	_____	X 10 =	_____

TOTAL VALUE = _____

Ending Position

Color	Number	Sets of Three	Bonus	Total	Value	Points
Orange	_____	1 2 3 4 5	_____	_____	X 1 =	_____
Blue	_____	1 2 3 4 5	_____	_____	X 2 =	_____
Yellow	_____	1 2 3 4 5	_____	_____	X 4 =	_____
Green	_____	1 2 3 4 5	_____	_____	X 7 =	_____
Red	_____	1 2 3 4 5	_____	_____	X 10 =	_____

TOTAL VALUE = _____

B. MAKING CHOICES AND IDENTIFYING COSTS

Lesson Description
Students are introduced to the PACED decision-making process and grid as a guide to making personal finance choices. This is illustrated with product choices and ratings from *Consumer Reports*® and then used to demonstrate trade-offs and opportunity costs.

Concepts
Alternatives
Criteria
Trade-offs
Opportunity Cost

Objectives
1. Students will be able to describe the five steps of the PACED decision-making process and illustrate it with a grid.
2. Students will be able to distinguish the trade-offs associated when making a choice from the opportunity cost of the choice.

Materials
Visual 1-1: "Smart" by Shel Silverstein (Shel Silverstein, *Where the Sidewalk Ends*, HarperCollins, 1974).
Visual 1-2: PACED Decision-making Process
Visual 1-3: PACED Decision-making Grid
Visual of a product rating table copied from *Consumer Reports*® or samples of such tables to be distributed as handouts to students
Visual 1-4: Smoke or Be a Millionaire?

Time Required
45 minutes

Procedure
1. Display Visual 1-1 and read the poem, "Smart," to the class. *(This short poem humorously shows how a boy turns a dollar given to him by his father into five pennies by making some questionable choices.)*

2. Ask: Did this boy make good decisions in his trading? *(Most students will recognize that he clearly did not.)*

3. Explain that making good decisions is not about the decision made, but the process used in making that decision.

4. Display Visual 1-2. Discuss each step of the PACED decision-making process as described on the visual. Note that PACED is an acronym for the steps: Problem, Alternatives, Criteria, Evaluation, and Decision. Define the following: **alternatives** are

all the possible choices that can be made, **criteria** are factors or reasons one may rank one alternative as being "better" than another.

5. Display Visual 1-3. Explain that this grid illustrates the general PACED process. The problem is stated at the top. The alternatives are the rows in the grid listed down the left side while the criteria are the columns in the grid listed across the top. Each cell in the grid (where a row intersects a column) is where one evaluates how well that particular alternative satisfies the stated criteria. Completing this grid will give a person making a decision the necessary information to decide which alternative is best for them.

6. Show a visual of a product rating from *Consumer Reports*® (or distribute cutouts or copies of such tables). Explain that these tables are examples of the PACED process. The problem for the consumer is to choose a particular model of a product. Along the left side of the table are listed the alternatives. These are typically the various models or brands of a type of product. Along the top side of the table are several criteria or factors consumers might feel are important in ranking the alternatives. In the body of the table is an evaluation of how well each alternative meets each of the criteria listed (some are done with colored circles, others simply list the relevant data: price, size, etc.). These evaluations are based on *Consumer Reports*® tests (which are described at the bottom of the table or in the accompanying article).

7. Ask: Given this table and all its information, does everyone make the same choice? *(Most students will realize that they do not.)* Continue: Why not? *(People do not necessarily weight all the criteria the same. Some may only be looking for the lowest price, others may be looking only at the quality rating, while others may consider two or more of the criteria).*

8. Explain what the PACED decision-making grid allows people to do is consider the trade-offs involved in their decisions. A **trade-off** exists when one alternative satisfies a particular criterion better than another alternative, while that other alternative satisfies some other criteria better. For example, in choosing a car, Model A might give you better gas mileage than Model B, but Model B might give you more horsepower or more room. The evaluation done in the body of the grid helps point out these trade-offs so that the decision comes down to which is more valuable to you: the better gas mileage or the greater horsepower/room? Clearly, this depends on each person's own tastes and preferences--some might value the gas mileage higher, while others might value the extra horsepower or room. So, people end up making different choices, even though they may be looking at the same trade-offs.

9. Explain that the PACED decision-making process identifies the relevant trade-offs that a person should consider in making their choice. Good decision making is not about finding the right choice for everyone, but identifying and considering the relevant trade-offs and making the right choice for you.

10. Explain that good decision making amounts to ranking the various alternatives available and choosing the one that offers the best trade-offs. However, in making this

choice, one is giving up the opportunity to choose the next best alternative. The lost benefits of this next best alternative are called the **opportunity cost** of the choice. In the earlier example, if one chooses the car with the better gas mileage, they give up the opportunity to enjoy the greater horsepower and room of the other model. It is important to realize that opportunity costs exist with respect to all choices.

11. Ask students: What is the opportunity cost of you being in school today? *(Because you are in school you must give up the opportunity to enjoy alternative activities for the day such as playing video games, hanging with your friends, going to a movie marathon, etc. Whichever one of these alternatives you would have chosen to do all day instead would be the opportunity cost of being in school. Remind students that the benefits of being in school--learning new things is hopefully worth this cost!)*

12. Ask students: What is the opportunity cost of a new video game? *(Because you used your money to buy the video game you must up the opportunity to purchase other valuable goods and services. The next most satisfying goods and/or services you could have spent the money you spent on the video game would be the opportunity cost of the game.)*

13. Ask students: What is the opportunity cost of not paying your bills on time? *(You lose the opportunity to have a good credit score and will end up paying higher interest rates on loans in the future.)*

14. Ask students: What is the opportunity cost of spending your money now instead of saving? *(You lose the opportunity to purchase even more goods and services later.)*

15. Explain that in each of these decisions something is gained (education, video game, more money from not paying bills, and goods and services now), but something is also lost. That loss is the opportunity cost and it is important to consider if it is worth the gain in each case.

16. Ask: What is the opportunity cost of smoking? *(Clearly there are the health consequences and a potentially shorter lifespan.)* Explain that one also gives up the opportunity to be a millionaire.

17. Display Visual 1-3. Explain that this table shows what would happen if someone that smoked one, $4.00 pack of cigarettes a day, instead took that money and invested it at 10% from age 18 to age 62. The person ends up being a millionaire at age 62 (and also more likely alive!). So another opportunity cost of smoking is that you lose the chance to be a millionaire. As one begins to consider all the opportunity costs, the benefits of smoking need to be larger and larger to make it a good choice. It might also be noted that the opportunity cost of a $4 latte every day is also being a millionaire at 62! *(Note that given the rising price of a pack of cigarettes, one would become a millionaire sooner than age 62 given a 10% return, or could reach a million dollars with a rate of return less than 10%!)*

18. Conclude by pointing out that making choices is a fundamental part of many aspects of personal finance by giving the following examples:
Choosing a car, bank, credit card, house, internet provider, etc. (consumer choices)
Choosing how to allocate your income (budgeting)
Choosing how to allocate your time (time management)
Choosing investments (portfolio management)
Choosing how to meet a savings goal such as retirement, college, starting a new business, or buying a house (financial planning)
Choosing insurance coverage or identity theft protections (risk management).
(Teacher note: All of these choices and others are included in the remaining Units of this curriculum.)

VISUAL 1-1: "Smart" (by Shel Silverstein)

SMART

My dad gave me one dollar bill
'Cause I'm his smartest son,
And I swapped it for two shiny quarters
'Cause two is more than one!

And then I took the quarters
And traded them to Lou
For three dimes—I guess he don't know
That three is more than two!

Just then, along came old blind Bates
And just 'cause he can't see
He gave me four nickels for my three dimes,
And four is more than three!

And I took the nickels to Hiram Coombs
Down at the seed-feed store,
And the fool gave me five pennies for them,
And five is more than four!

And then I went and showed my dad,
And he got red in the cheeks
And closed his eyes and shook his head—
Too proud of me to speak!

(<u>Where the Sidewalk Ends</u> by Shel Silverstein, Harper Collins, 1974)

VISUAL 1-2: PACED DECISION-MAKING PROCESS

Step 1: Define the Problem.

Why must you make a choice?

Step 2: List the Alternatives.

What are the possible options?

Step 3: Determine the Criteria.

What makes one option better than another?

Step 4: Evaluate the Alternatives.

How well does each option meet each criterion?

Step 5: Make the Decision.

Which option has the most favorable trade-offs?

VISUAL 1-3: PACED DECISION-MAKING GRID

Problem: _____

Criteria / Alternatives				
		Evaluation		

Decision: _____

VISUAL 1-4: SMOKE OR BE A MILLIONAIRE?

One pack a day @ $4 x 365 days per year = $1460 per year

Age	Annual Saving	Balance plus 10%	Year-end Balance
18	$1460	$ 0	$ 1460
19	1460	1606	3066
20	1460	3373	4833
21	1460	5316	6776
22	1460	7454	8914
23	1460	9805	11265
24	1460	12392	13852
25	1460	15237	16697
26	1460	18367	19827
27	1460	21810	23270
28	1460	25597	27057
29	1460	29763	31223
30	1460	34345	35805
31	1460	39386	40846
32	1460	44931	46391
33	1460	51030	52490
34	1460	57739	59199
35	1460	65119	66579
36	1460	73237	74697
37	1460	82167	83627
38	1460	91990	93450
39	1460	102795	104255
40	1460	114681	116141
41	1460	127755	129215
42	1460	142137	143597
43	1460	157957	159417
44	1460	175359	176819
45	1460	194501	195961
46	1460	215557	217017
47	1460	238719	240179
48	1460	264197	265657
49	1460	292223	293683
50	1460	323051	324511
51	1460	356962	358422
52	1460	394264	395724
53	1460	435296	436756
54	1460	480432	481892
55	1460	530081	531541
56	1460	584695	586155
57	1460	644771	646231
58	1460	710854	712314
59	1460	783545	785005
60	1460	863506	864966
61	1460	951463	952923
62	1460	**1048215**	**1049675**

MAKING PERSONAL FINANCE DECISIONS
Unit Two: Planning and Tracking

Rule 2: Have a plan.

Financial success depends primarily on two things: developing a plan to meet established goals and tracking one's progress with respect to that plan. Too often people set vague goals ("I want to be rich"), make unrealistic plans, or never bother to assess their progress towards their goals. These lessons look at important financial indicators one should understand and monitor both in setting goals and attaining them.

A. THE INVENTORY GAME: NET WORTH AND CASH FLOW

Lesson Description

Students physically move in to and out of a specified area and note the change in the number of students in the area over time, as well as, the inflow and outflow rates. This demonstration is then related to the stock (or amount at a point in time) concepts of assets and liabilities and the flow (or amount per unit of time) concepts of income and expenses. Students use this distinction to determine net worth, cash flow, and the relationship between them.

Concepts

Net worth
Assets
Liabilities
Cash flow
Income
Expenses

Objectives

1. Students will be able to distinguish between stock and flow concepts.
2. Students will be able to describe net worth as the value of an individual's assets minus the value of the individual's liabilities at a point in time.
3. Students will be able to provide examples of assets and liabilities.
4. Students will be able to describe cash flow as the difference between an individual's income and expenses over a given period of time.
5. Students can provide examples of income and expenses over a given period of time.

Materials

Time-keeping device (watch or classroom clock) which tracks seconds
Masking tape to mark off an area on the classroom floor
"IN" sign and "OUT" sign
Activity 2-1: Net Worth and Cash Flow (one copy for each student)
Visual 2-1: Net Worth and Cash Flow (Answers)

Time Required
45 minutes

Procedure
1. Have one-third to one-half of the total number of students in the class stand in a defined area that has been taped off in the front of the class. Mark an access on one side of this area "IN" and mark an access on the opposite side "OUT".

2. Assign one student with a watch (or view of a clock) to each access.
3. Have the remainder of the class form a single-file line along a side wall outside the "IN" access.

4. Explain that the class will be investigating the effect on the number of students in the area as a result of changing the rate at which students move in and out of the area. There will be five separate rounds of <u>two minutes</u> each. In each round the time keepers will have a student move into (or out of) the area at a designated interval of time by saying "Go." Once students move "out" of the area have them get back in the line outside the "IN" access. Have the same number of students in the area at the start of each round and record the number in the area at the end of each round on the board. Use the following time intervals in each round (the numbers in the parenthesis are the expected change in the number of students in the area during that round). *[Optional: Only do the first four rounds and have the students predict the results of the fifth round given the rates shown.]*

Round 1: IN: One every 12 seconds;
OUT: One every 12 seconds
(0)

Round 2: IN: One every 10 seconds;
OUT: One every 12 seconds
(+2)

Round 3: IN: One every 10 seconds;
OUT: One every 15 seconds
(+4)

Round 4: IN: One every 15 seconds;
OUT: One every 10 seconds
(-4)

Round 5: IN: One every 15 seconds;
OUT: One every 12 seconds
(-2)

5. Have students discuss the impact of changing the inflow and outflow rate of students on the number of students in the area. *(Clearly, if the inflow rate exceeds the outflow rate (Rounds 2 and 3), the number of students in the area grows while conversely, if the*

outflow rate exceeds the inflow rate, the number of students in the area falls (Rounds 4 and 5). When the inflow and outflow rates are equal, the number of students remains unchanged (Round 1).)

6. Explain that flows are based on units of time. For example, there was a given amount of students moving into the area *each minute*. Meanwhile, the amount of the students in the area at any given time is just a number, such as 20 or 24. It represents the inventory, or stock, of students at a given time.

7. Have the students imagine that each student in the demonstration was a dollar bill and the area represented someone's wallet or purse. Ask: What might be an example of an inflow? *(The person's income from working, for example, $500 per week, or the interest they earn on their savings account, for example, $50 per quarter. Emphasize the time element of these payments.)*

8. Ask: What might be some examples of an outflow? *(Expenditures that the person makes, for example, a cell phone bill of $40 per month, a rental payment of $400 per month, or an auto insurance payment of $300 every six months. Again, emphasize the time element involved in these payments.)*

9. Ask: What would the amount of students in the area represent? *(Since the students are dollars, they would represent the amount of dollars the person has in their wallet/purse, or the person's wealth).*

10. Ask: What does this demonstration suggest about how you might grow your wealth over time? *(Your inflows, or income, need to exceed your outflows, or expenditures.)*

11. Explain that a person's wealth is typically measured by their net worth. ***Net worth*** is defined as the value of a person's assets minus the value of their liabilities. A person's ***assets*** are things they *own* such as a house, stocks, jewelry, cash, savings account, car, coins, etc. A person's ***liabilities*** are things they *owe* such as unpaid bills, mortgage, car loan, unpaid taxes, etc. A person's net worth is like their inventory or stock of dollars. Meanwhile, their ***cash flow*** is defined as their ***income*** (dollars coming in, usually from working) minus their ***expenses*** (dollars going out, usually to buy goods and services). Since these are flows, they often have a time element associated with them. If a person's cash flow is *positive* (their income exceeds their expenses over a given period of time), then as in the earlier demonstration, their net worth will tend to rise. Conversely, if their cash flow is *negative*, their net worth tends to fall. An important element of financial planning is keeping track of these two things: your net worth (a statement of your assets and liabilities) and your cash flow (your monthly budget or flow of funds).

12. Distribute Activity 2.1 and have the students complete Part A in small groups.

13. Display Visual 2.1 (Part A only) and discuss the answers as necessary. *(Note that all the income or expense items have a time period associated with them, while the asset and liability items do not.)*

14. Have students complete Parts B and C (after correcting any errors in Part A).

15. Display Visual 2.1 (all Parts) and discuss the answers as necessary.
(Part B: Net Worth = Assets – Liabilities: $80,000, where:

Assets ($206,500) equal the sum of the value of all assets (all items marked with an "A"): House ($175,000), Television ($1300), Car ($9000), Coins ($2500), Cash ($500), Stocks ($10,500), Savings Account ($4000), and Other Personal Property ($3700).
Liabilities ($126,500) equal the sum of the value of all liabilities (all items marked with an "L"): Car loan balance ($4000), Credit card balance ($1500), Mortgage balance ($120,000), and Unpaid IOU ($1000).

Part C: Cash Flow Position = Monthly Income – Monthly Expenses: -$270, where:

Monthly Income ($2530) equals the sum of all income flows (all items marked with an "I") converted into monthly terms: Wages ($2500 = $30,000/year divided by 12 months per year), Interest ($10 = $30/quarter divided by 3 months per quarter), and Dividends ($20 = $60/quarter divided by 3 months per quarter).
Monthly Expenses ($2700) equals the sum of expense items (all items marked with an "E") converted into monthly terms: Electricity ($50), Property taxes ($100 = $300/quarter divided by 3 months per quarter), Mortgage ($1320), Grocery bill ($600 =$150/week times 4 weeks per month), Gasoline ($60), Car loan payment ($350), Doctor visits ($50), Cable ($160), Other Monthly Expenses ($110).

Since this person's monthly expenses (outflow) exceed their monthly income (inflow), their net worth will fall over time if nothing is changed. They will have to draw down their savings account, increase the balance on their credit card, or get a new loan if this cash flow situation isn't changed and each of these lowers their net worth. Note that if the value of this person's assets or liabilities change over time, for example, the value of their stocks rise, then it is possible that their net worth does not fall, however, this is still not a good cash flow situation if the person values growth in their net worth.)

16. Ask: Why would a person want their net worth to be larger? *(A larger net worth means greater financial security which most people desire. Should unexpected expenses occur it provides a means to pay them. A larger net worth also provides greater financial opportunities. One has the financial resources to take advantage of good deals, invest in new opportunities, or even lower their insurance premiums by raising their deductibles, that is, by partially self-insuring themselves.)*

17. Closure. In personal finance it is important to know your financial situation. The two basic measures of a person's financial situation are their net worth and cash flow. The first is a stock or inventory measure that tells you where you currently stand financially. The second is a flow measure that gives you a good indication of how the first measure is likely changing over time. If your income flows exceed your expense flows then your net worth is likely to rise over time. If, however, your expense flow exceeds your income flow then your net worth is likely to fall over time.

ACTIVITY 2-1: NET WORTH AND CASH FLOW

Part A. Classify each of the following as an Asset (write "A"), Liability ("L"), Income ("I") or Expense ("E"):

____ Electricity bill of $50/month
____ Car loan balance of $4000
____ Wages of $30,000/year (after income and payroll taxes)
____ House valued at $175,000
____ Doctor office visits costing $50/month (after insurance)
____ Interest payment on savings account of $30/quarter
____ Balance on credit card of $1500
____ High-definition television worth $1,300
____ Property taxes of $300/quarter
____ Mortgage balance of $120,000
____ 3-year-old car currently valued at $9000
____ Grocery bill of $150/week
____ Gold coins worth $2500
____ Mortgage payment of $1320/month
____ $500 in emergency cash in desk drawer
____ Gasoline purchases of $60/month
____ Stocks valued at $10,500
____ Car loan payment of $350/month
____ Unpaid IOU to brother of $1000
____ Savings account balance of $4000
____ Cable/Internet/Long distance telephone service for $160/month
____ Dividends on stocks of $60/quarter
____ Other personal property not listed above worth $3700
____ Other monthly expenses not listed above of $110/month

Part B. Given the information above in Part A, what is this person's net worth? _____ Explain.

Part C. Given the information above in Part A, explain whether this person's net worth is likely to grow or fall over time if things remain the same? (Hint: Convert all income and expense flows into monthly figures and compare them.)

VISUAL 2-1: NET WORTH AND CASH FLOW

Part A. Classify each of the following as an Asset (write "A"), Liability ("L"), Income ("I") or Expense ("E"):

E Electricity bill of $50/month
L Car loan balance of $4000
I Wages of $30,000/year (after income and payroll taxes)
A House valued at $175,000
E Doctor office visits costing $50/month (after insurance)
I Interest payment on savings account of $30/quarter
L Balance on credit card of $1500
A High-definition television worth $1,300
E Property taxes of $300/quarter
L Mortgage balance of $120,000
A 3-year-old car currently valued at $9000
E Grocery bill of $150/week
A Gold coins worth $2500
E Mortgage payment of $1320/month
A $500 in emergency cash in desk drawer
E Gasoline purchases of $60/month
A Stocks valued at $10,500
E Car loan payment of $350/month
L Unpaid IOU to brother of $1000
A Savings account balance of $4000
E Cable/Internet/Long distance telephone service for $160/month
I Dividends on stocks of $60/quarter
A Other personal property not listed above worth $3700
E Other monthly expenses not listed above of $110/month

Part B. Given the information above in Part A, what is this person's net worth? **$80,000** Explain. ***Net Worth equals Total Assets minus Total Liabilities = $206,500 - $126,500 = $80,000.***

Part C. Given the information above in Part A, explain whether this person's net worth is likely to grow or fall over time if things remain the same? (Hint: Convert all income and expense flows into monthly figures and compare them.) ***Since Total Monthly Expenses of $2800 exceed Total Monthly Income of $2530, this person's Net Worth is likely to fall.***

B. MEETING FINANCIAL GOALS: RATE OF RETURN

Lesson Description
Students are shown the two ways that investments can earn a return and then calculate the annual rate of return, the real rate of return, and the expected rate of return on various assets.

Concepts
Appreciation
Depreciation
Inflation
Return
Rate of return
Real rate of return
Expected rate of return

Objectives
Students will be able to describe two ways that an asset can earn a return.
Students will be able to determine and distinguish between the rate of return on an asset, its real rate of return, and its expected rate of return.

Materials
A small paper sack and four items that are identical expect for color: one red, one white, two blue (poker chips, pieces of paper, etc.) for each group of 3-5 students
Activity 2-2: Determining the Annual Rate of Return on an Asset (one copy for each student)
Visual 2-2: The Annual Rate of Return on an Investment
Visual 2-3: Determining the Annual Rate of Return on an Asset (Answers)
Visual 2-4: Expected Rate of Return

Time required
45 minutes

Procedure
1. Have students provide examples of assets. *(Houses, cars, stocks, bonds, collectibles, land, jewelry, savings account, certificates of deposit, cash, U.S. savings bonds, boats, electronics, etc.)*

2. Explain that assets such as these can increase your wealth in two ways. The market value or price of the asset itself can increase and/or the asset can generate income.

3. Have the students provide examples of assets whose market values can increase. *(Stocks, houses, collectibles, land, etc.)*

4. Explain that when the market value of an asset increases, it is said to be appreciating in value. Define **appreciation** as an increase in the market value of an asset.

5. Ask: Can the market value of an asset go down? *(Yes.)* Define **depreciation** as a decrease in the market value of an asset. Note that all the assets listed in Step 3 could also experience a fall in their price or market value. Ask: For what assets would you expect to see depreciation? *(Cars, electronics, boats, etc.)* Note that this makes these assets less desirable as investment choices.

6. Have students provide examples of assets that can generate income. *(Savings accounts, certificates of deposit, and bonds can generate interest income, stocks can generate dividends, and houses and land can generate rental income.)*

7. Summarize by noting that some assets can increase your wealth only by having their market value rise such as collectibles, some can increase your wealth only by generating income such as savings accounts or certificates of deposit, and some can increase your wealth both ways such as rented houses and stocks.

8. Explain that to compare the wealth-increasing impact of different assets a useful measure is the asset's rate of return.

9. Display Visual 2-2. Define the **return** on an asset as the income generated by the asset during a given period (such as a year), if any, plus any appreciation or depreciation in the market value of the asset during the period. Define **rate of return** as the return on the asset divided by the market value of the asset at the beginning of the period. Explain that this ratio is typically multiplied by 100 and expressed as a percentage. Give the following example: Suppose an asset had a market value of $200 a year ago, generated $5 in income, and is currently worth $205. The return would be the $5 in income generated plus the $5 appreciation in the market value of the asset, or $10. The rate of return would be $10 divided by $200, or .05. Expressed as a percentage this would be a 5% annual rate of return.

10. Have each student complete a copy of Activity 2-2 and then discuss their answers (using Visual 2.3). *(A. $16 and .02(2%); B. $1000 and .04(4%); C. $8400 and .07(7%); D. $300 and .03(3%); E. $80 and .10(10%); F. $0 and .00(0%); G. $800 ($2000-$1200) and .04(4%), H. a loss of $1(-$1) and -.02(-2%). Note in the last two cases, G and H, there was a depreciation in the market value of the assets. Also note that case H is an example of a negative return and rate of return which is possible for any asset which depreciates in market value.)*

11. Have students reconsider case F in Activity 2-2. Ask: Although the rate of return was 0%, was there really no change in the wealth of the person who placed the cash in the mattress? *(It depends. If the prices of goods and services that this person buys are rising during the year, then the $1000 buys less goods and services at the end of the year than it would have at the beginning making the person less wealthy.)*

12. Describe **inflation** as a general rise in the prices of goods and services over time. Explain that inflation is typically measured by the percentage increase in the cost of a given bundle of goods and services over time. This is called the inflation rate. Thus,

while investing can increase one's wealth, inflation tends to decrease it because the same amount of money buys less goods and services.

13. Define the **real rate of return** on an investment as the rate of return on the investment minus the inflation rate. Give the following example: Suppose you earn 4% on your savings account while the inflation rate is 3%. Your real rate of return would only be 1% (4% - 3%). For case F in Activity 2-2, the real rate of return would be a minus 3% if the inflation rate were 3% (0% - 3%).

14. Have students determine which of the assets in Activity 2-2 would have a positive real rate of return if the inflation rate was 3%. *(Only B, C, E, and G)* Next have them consider an inflation rate of 6%. *(Only C with a real rate of return of 1% = 7% - 6%, and E with a real return of 4% =10% - 6%)* Explain that an asset must have a rate of return greater than the inflation rate in order to increase one's wealth, in other words, its real rate of return must be positive.

15. Ask: Can the actual rate of return on an asset vary from year to year and if so, why? *(Yes. The change in the price or market value of the asset may vary from year to year. For example, a stock's price may rise by 20% one year, 10% the next, and may fall by 4% the year after that. It could also vary because the income generated by the asset changes. For example, a company may change the amount of the dividend it pays on each share of its stock or a bank may change the interest rate that it pays on savings accounts.)*

16. Explain that when people talk about the rate of return on various assets, they are usually talking about the expected rate of return since actual rates can vary considerably year-to-year for some assets. Define the **expected rate of return** on an asset as the weighted average of all the possible actual rates of return, where each possibility is weighted by its likelihood of happening (or probability). Reassure students that while this sounds very technical, it is really quite simple as will be demonstrated.

17. Organize the class into groups. Give each group four identical items (except for color) in a small paper bag. Each bag should have one red item, one white item, and two blue items.

18. Explain that each group will be drawing an item out of the bag each round to determine the rate of return they will earn that round. If they draw out the red item they will earn 4% for the round, if they draw out the white item they will earn 8%, and if they draw out either of the blue items, they will earn 12%. They are not to look in the bag, but instead randomly choose an item each round. Each group can decide who draws each round, but suggest that they take turns. After each round, each group should record their result (4%, 8%, or 12%).

19. Rounds 1-10: Have each group draw out an item and record their result.

20. Explain that each group now has ten rounds of various rates. Have each group add up the ten rates and then divide by ten to get an average rate. Have some groups report their average. *(While the values will vary, they will all be near 9%. Optional: All the group averages could also be averaged to get an overall average which would be even closer to 9%.)*

21. Explain that 9% is the expected rate of return in this case. Note that in this case, the expected rate of return does not equal any of the actual rates of return. It is also closer to 12% than to 4% because getting 12% was much more likely. Explain that earlier it was mentioned that the expected rate of return was based on the weighted average of the possibilities.

22. Display Visual 2-4. In this case, there were three possible rates of return: 4%, 8%, and 12%. The chance of getting 4% was equal to the chance of drawing the red item which was one out of four or 0.25 (=1/4). The chance of getting 8% was equal to the chance of drawing the white item which was also one out of four or 0.25. The chance of getting 12% was equal to the chance of drawing out a blue item which was 2 out of 4 or 0.50 (=2/4). Multiplying each of the possible rates of return by their chance of occurring yields an expected rate of return of 9% = (4% x 0.25) + (8% x 0.25) + (12% x 0.50).

23. Closure. Note that the expected rate of return is essentially the average rate of return a person would expect each period from the investment over many periods.

ACTIVITY 2-2: DETERMINING THE ANNUAL RATE OF RETURN ON AN ASSET

$$\text{Annual Rate of Return} = \frac{\text{Return (= Income Generated + Change in the Market Value of the Asset)}}{\text{Market Value of the Asset at the Beginning of the Year}}$$

A. **A one-ounce bar of gold that was purchased for $800 a year ago and is now valued at $816.**
Return:
Rate of return:

B. **A $25,000, one-year certificate of deposit which pays 4%.**
Return:
Rate of return:

C. **A house purchased for $120,000 a year ago is worth $123,000 today after generating net rental income of $5400.**
Return:
Rate of return:

D. **$10,000 placed in a savings account which pays 3% interest per year.**
Return:
Rate of return:

E. **Ten shares of a stock which had a price per share of $80 a year ago, a current price of $85, and paid a dividend of $3 per share.**
Return:
Rate of return:

F. **$1000 in cash placed in a mattress a year ago.**
Return:
Rate of return:

G. **A bond which has a face value of $20,000 and pays 10% interest was purchased a year ago for $20,000 and is currently selling for $18,800.**
Return:
Rate of return:

H. **A porcelain figurine was purchased for $50 a year ago and is now selling for $49.**
Return:
Rate of return:

VISUAL 2-3: DETERMINING THE ANNUAL RATE OF RETURN ON AN ASSET

$$\text{Annual Rate of Return} = \frac{\text{Return (= Income Generated + Change in the Market Value of the Asset)}}{\text{Market Value of the Asset at the Beginning of the Year}}$$

A. **A one-ounce bar of gold that was purchased for $800 a year ago and is now valued at $816.**
Return: **$16**
Rate of return: **$16/$800 = .02 → 2.0%**

B. **A $25,000, one-year certificate of deposit which pays 4%.**
Return: **$25,000 x .04 = $1000**
Rate of return: **$1000/$25,000 = .04 → 4.0%**

C. **A house purchased for $120,000 a year ago is worth $123,000 today after generating net rental income of $5400.**
Return: **$5400 + $3000 = $8400**
Rate of return: **$8400/$120,000 = .07 → 7.0%**

D. **$10,000 placed in a savings account which pays 3% interest per year.**
Return: **$10,000 x .03 = $300**
Rate of return: **$300/$10,000 = .03 → 3.0%**

E. **Ten shares of a stock which had a price per share of $80 a year ago, a current price of $85, and paid a dividend of $3 per share.**
Return: **($3 + $5) x 10 = $80**
Rate of return: **$80/($80 x 10) = .10 → 10.0%**

F. **$1000 in cash placed in a mattress a year ago.**
Return: **$0**
Rate of return: **$0/$1000 = .00 → 0.0%**

G. **A bond which has a face value of $20,000 and pays 10% interest was purchased a year ago for $20,000 and is currently selling for $18,800.**
Return: **$2000 - $1200 = $800**
Rate of return: **$800/$20,000 = .04 → 4.0%**

H. **A porcelain figurine was purchased for $50 a year ago and is now selling for $49.**
Return: **-$1**
Rate of return: **-$1/$50 = -.02 → -2.0%**

VISUAL 2-2: THE ANNUAL RATE OF RETURN ON AN INVESTMENT

$$\text{RETURN} = \text{Income Generated} + \text{Change in Market Value of the Asset During the Period}$$

$$\text{RATE OF RETURN} = \frac{\text{Return}}{\text{Market Value of the Asset at the Beginning of the Year}}$$

VISUAL 2-4: EXPECTED RATE OF RETURN

(1) POSSIBLE OUTCOMES (Rate of return)	(2) CHANCE OF HAPPENING (Probability)
4	1 out of 4 = 0.25
8	1 out of 4 = 0.25
12	2 out of 4 = 0.50

Expected Rate of Return = (4 x 0.25) + (8 x 0.25) + (12 x 0.50) = 9

MAKING PERSONAL FINANCE DECISIONS
Unit Three: Earning Income

Rule 3: Invest in yourself.

The most important investment one will make in their life has nothing to do with buying a house, a share of stock, or even gold. The most important investment a person can make is in themself. Most people will earn income by working or running their own business. In either case, they will need education, training, skills, experience, determination, and a positive attitude on a continuing basis to earn a good wage or make a good profit. Without first investing in these things, one's ability to earn to income falls making budgeting harder, saving harder, investing harder, and reaching financial goals far more difficult. These lessons look the importance of building one's human capital and personal attributes in earning income.

A. INVESTING IN YOURSELF

Lesson Description
Students perform calculations given different information to demonstrate the importance of human capital in increasing a person's productivity. They then look at the wages of various occupations and consider the role of human capital in explaining the differences.

Concepts
Income
Wage
Human Capital
Productivity

Objectives
Students will be able to define human capital and describe ways to increase it.
Students will be able to explain the relationship between human capital, wages, and the likelihood of being unemployed.

Materials
Activity 3-1: Dividing by 9 (one copy for each student in half the class)
Activity 3-2: Dividing by 9 (one copy for each student in half the class)
Visual 3-1: Wages by Occupation
Visual 3-2: Wages and Unemployment by Level of Education

Time Required
45 minutes

Procedure

1. Ask students: Why do people work? *(Some will say to "get or earn money," but then ask "Why do they want money?").* Point out that people desire goods and services to satisfy their wants. Since these things are scarce, they have prices which mean it is necessary to earn income to pay for them. **Income** is the money payment for the use of productive resources.

2. Explain that most people earn income by selling the use of their human or labor resource. Income earned from selling the services of human resources is called **wages** (or salaries). Wages are the price paid by producers to use human resources. In the United States, 70-75% of all income earned is in the form of wages.

3. Display Visual 3-1. Note the wide range of wages for different occupations. Tell the class you are going to conduct a little competition which will help explain these differences.

4. Distribute face down a copy of Activity 3-1 to the back half of the class and a copy of Activity 3-2 to the front half of the class. While these two activities are different, act as if everyone in the class is getting the exact same activity. Tell the students that when you tell them to "Go" they are to turn over the activity, read the directions, and then answer as many of the questions as they can. When you say "Stop" they are to immediately turn their activity back over. Finally, tell them if they complete all of the problems before you say stop, they are to turn the activity over and stand up at their seat.

5. Say "Go" to start the activity. Allow the students to work until about one-half of the students with Activity 3-2 (those in the front of the class) are standing and then say "Stop." Have the class note which students are standing before having them sit down. *(Most of the students standing will be in the front half of the class, but there may also be some students in the back half of the class.)*

6. Ask the students why some students seem to be able to complete the questions faster than others. *(Responses will include that they have different math abilities or that some people might not have been very motivated to work hard.)*

7. Tell the students that they were actually given different information on the activity and, in particular, the students in the front half of the class were given information on how to answer the questions more easily. Read the directions on Activity 3-2 to the whole class.

8. Have students exchange activities with each other for grading (it is not important that they have the same activity or not). Announce the correct responses for each question *(1-Yes, 2-No, 3-Yes, 4-No, 5-No, 6-Yes, 7-Yes, 8-No, 9-No, 10-Yes),* tell the students to record the number correct, and then pass the activity back.

9. Have students with Activity 3-1 report their scores. Then have students with Activity 3-2 report their scores. Calculate an average score for both groups. *(The expected result*

is that those with Activity 3-2 will have completed more questions correctly (typical averages are around 8 correct for those with Activity 3-2 and 5 correct for those with Activity 3-1). It is also likely that those students with Activity 3-2 were the majority of the students who stood up. Note that it is possible that students <u>without</u> this information did as well because they either knew the information beforehand or were simply very good at long division. It is also possible that students <u>with</u> the information did not do as well because they had trouble understanding it or were not motivated to work quickly).

10. Explain that people's ability to perform a task depends on their **human capital** which is basically the set of skills and attitudes they have acquired. Human capital is based on one's natural talents, the education and training they have acquired, the practice they have done, the experience they have accumulated, the physical and mental shape they have kept their body and mind in, and the attitudes towards work they have developed.

11. Ask students: What effect does your human capital have on the wage you would be paid? *(They should recognize that better human capital will likely lead to a higher wage).*

12. Remind students that wages are the price of human resource (or labor) services. As a price, it is determined by demand and supply. As demonstrated by the activity, those students with more human capital (extra knowledge) were able to produce more correct calculations in the time allowed than those without. Thus, increases in people's human capital increase their **productivity**, or the amount of output that can be produced by their human resource.

13. Refer to the average number of correct responses for each group. Note that if correct answers could be sold for $10 each, each student in the group with greater human capital would have generated more correct answers and thus more revenue for the firm hiring them. *(Take $10 times each of the average numbers from Step 9 to show the revenue generated. For example, if the averages were 8 and 5 correct answers, the amount of revenue generated would be $80 and $50, respectively.)* Explain that firms would thus be willing and able to pay more for the more productive workers. Or, in other words, the demand for these workers would be greater.

14. Ask students: As you acquire more human capital, are there less or more other people who are able to offer similar abilities and skills? *(Less.)* Thus, the supply of such workers would be less. So, acquiring human capital not only increases the demand for such workers (since they are more productive), it also reduces the supply of similar workers—both leading to higher wages.

15. Return to Visual 3-1. Note that the human capital required to be a waitress or a garbage collector is not very great and so many people have these skills. This leads to a low wage. Meanwhile, the human capital required to be a physician or engineer is much greater and so fewer people have these skills. This leads to a high wage.

16. Display Visual 3-2. Explain that a principal component of human capital is one's education. So, as would be expected, higher levels of education lead to greater human capital and thus, higher wages. Note that it also leads to a lower likelihood of being unemployed. It is important to remember, however, that college education is only one way to increase one's human capital. Skills may also be acquired through specialized vocational training (plumbing, welding, computer programming, etc.), developing and practicing a skill (art, music, or sports), and/or acquiring work experience.

17. Closure. Tell students that personal finance is about making decisions. Most of those decisions have to do with deciding how much to save, how to budget spending, what investments to make, and what insurance to buy. But the starting point with all these decisions depends upon how much income you are able to earn. The most important decision is thus to decide how to invest in yourself by developing your human capital--"learn to earn."

ACTIVITY 3-1: DIVIDING BY 9

Determine whether or not each of the following numbers is **evenly divisible by 9**. It is if there is **no remainder** after doing long division by 9 (for example, 2349 divided by 9 is exactly 261 with no remainder).

Number	**Evenly divisible by 9?**	
1. 20,016	Yes ____	No ____
2. 52,333	Yes ____	No ____
3. 81,054	Yes ____	No ____
4. 100,232	Yes ____	No ____
5. 222,222	Yes ____	No ____
6. 693,693	Yes ____	No ____
7. 1,036,017	Yes ____	No ____
8. 4,444,444	Yes ____	No ____
9. 7,002,032	Yes ____	No ____
10. 10,555,848	Yes ____	No ____

ACTIVITY 3-2: DIVIDING BY 9

Determine whether or not each of the following numbers is **evenly divisible by 9**. It is if the **sum of its digits** is evenly divisible by 9 (for example, 2349 is evenly divisible by 9 since 2+3+4+9 = 18 and 18 is evenly divisible by 9).

Number	**Evenly divisible by 9?**	
1. 20,016	Yes ____	No ____
2. 52,333	Yes ____	No ____
3. 81,054	Yes ____	No ____
4. 100,232	Yes ____	No ____
5. 222,222	Yes ____	No ____
6. 693,693	Yes ____	No ____
7. 1,036,017	Yes ____	No ____
8. 4,444,444	Yes ____	No ____
9. 7,002,032	Yes ____	No ____
10. 10,555,848	Yes ____	No ____

VISUAL 3-1: WAGES BY OCCUPATION

OCCUPATION	MEDIAN HOURLY WAGE	ANNUAL INCOME*
PHYSICIAN	$64.90	$129,800
CHIEF EXECUTIVE	55.66	111,320
LAWYER	45.92	91,240
COLLEGE PROFESSOR	38.46	76,920
SECONDARY TEACHER	31.03	49,648*
MECHANICAL ENGINEER	30.79	61,580
PHYSICAL THERAPIST	30.00	60,000
COMPUTER PROGRAMMER	28.87	57,740
LIBRARIAN	26.43	52,860
ACTOR/DIRECTOR	25.51	51,020
ELECTRICIAN	24.41	48,820
ACCOUNTANT	24.24	48,480
BIOLOGIST	24.04	48,080
EDITOR/REPORTER	21.64	43,280
FIREFIGHTER	18.50	37,000
CARPENTER	18.05	36,100
AUTOMOBILE MECHANIC	18.00	36,000
SECRETARY	16.00	32,000
WELDER	15.09	30,180
TRUCK DRIVER	14.42	28,840
GRADER/DOZER OPERATOR	14.35	28,700
CONSTRUCTION LABORER	12.50	25,000
BANK TELLER	10.45	20,900
JANITOR	10.21	20,420
HAIRDRESSER	10.00	20,000
GARBAGE COLLECTOR	9.83	19,660
CASHIER	8.00	16,000
FOOD PREPARER	7.50	15,000
BARTENDER	6.75	13,500
WAITER/WAITRESS	3.85	7,700

Source: National Compensation Survey: Occupational Wages in the United States, June 2005 Supplementary Tables (www.bls.gov/ncs/ocs/sp/ncbl0831.pdf)
*Hourly wage multiplied by 2000 (50 weeks @ 40 hours/week), for secondary teacher multiplied by 1600 (40 weeks)

VISUAL 3-2: WAGES AND UNEMPLOYMENT BY LEVEL OF EDUCATION

Level of Education	2007 Median Weekly Pay	Unemployment Rate in 2007
Less than a high school diploma	$ 428	7.1%
High-school graduate	$ 604	4.4%
Some college, no degree	$ 683	3.8%
Associate degree	$ 740	3.0%
Bachelor's degree	$ 987	2.2%
Master's degree	$1165	1.8%
Professional degree	$1427	1.3%
Doctoral degree	$1497	1.4%

Note: Data are 2007 annual averages for persons age 25 and over. Earnings are for full-time wage and salary workers.

Source: Bureau of Labor Statistics, Current Population Survey

B. ENTERPRENEURSHIP: WORKING FOR YOURSELF

Lesson Description
Students are asked to volunteer for a potentially embarrassing task in return for a reward to demonstrate a characteristic of entrepreneurs. They then take a personal assessment to discover other important characteristics of entrepreneurs and determine how entrepreneurial they are based on these characteristics.

Concept
Entrepreneur

Objectives
Students will be able to define entrepreneurs and describe their role in the economy.
Students will be able to describe personal characteristics entrepreneurs are likely to possess.

Materials
Activity 3-3: My Personal Assessment
Visual 3-3: Scoring Your Personal Assessment
Visual 3-4: Characteristics of Entrepreneurs
Visual 3-5: What Does You Score Indicate?

Time Required
45 minutes

Procedure
1. Show the class a hat or box filled with slips of paper. Explain that each slip of paper describes something that the person drawing out the slip must perform or do in front of the entire class. Note further that some may be a bit embarrassing. However, explain that if a volunteer draws out a slip and does what it says, they will receive a prize (this could be extra credit points, a treat of some kind, or even a small monetary payment). In addition, they will be allowed to create a new slip with a new action to place in the hat.

2. Ask for volunteers to select slips. *(Usually there will be some, but certainly not all students.)* Have any volunteers come to the front of the class. *(Should no one volunteer, increase the prize.)* Reward each volunteer with the prize offered *without* having them draw any slips. Have them remain standing in front of the class.

3. Explain to the class that these students exhibit the behavior of people called entrepreneurs. **Entrepreneurs** are people who create new ideas, products, or businesses. This is risky because many new businesses fail, but it can also be very rewarding and exciting. Note that all the volunteers took the risk of embarrassing themselves either because they thought the reward was worth it and/or because they were intrigued by what they might have to do or excited to create a new slip of their own.

4. Thank the volunteers and have them return to their seats.

5. Distribute Activity 3-3 and have each student complete it by circling the response for each numbered set of sentences that best describes how they feel. Explain that there are no right or wrong answers.

6. Show Visual 3-3. Have students score Activity 3-3 by putting a "1", "2", or "3" in the first blank of each set of sentences depending on how they responded. *(For example, an answer of "B" to question #1 would result in 2 points.)*

7. Have students add up their points for all 17 questions and write their total at the top of Activity 3-3 where it says "Total Score."

8. Show Visual 3-4. Ask students either individually or in groups to match each characteristic shown to the question that appears to be addressing that characteristic. *(1. Competitive, 2. Desire to Achieve, 3. Willingness to Work Hard, 4. Self-motivating, 5. Willingness and Ability to Lead, 6. High Energy Level, 7. Positive Attitude, 8. Willingness to Take Risks, 9. Self-confident, 10. Sociable, 11. Creative, 12. No Fear of Failure, 13. Ability to Plan and Organize, 14. Willingness and Ability to Make Decisions, 15. Willingness and Ability to Solve Problems, 16. Willingness to Persevere, and 17. Self-reliant.)*

8. Show Visual 3-5. Explain that the higher one's score, the more traits of an entrepreneur they tend to have. Also point out that being an entrepreneur is not for everyone. People can be rewarded and satisfied as much or more by being successful managers or simply great employees.

9. Closure. Tell students that they can work for themselves or someone else. Either way they will need to develop skills and attitudes (i.e. human capital) to be successful.

ACTIVITY 3-3: MY PERSONAL ASSESSMENT

Circle the letter of the sentence that <u>best</u> describes <u>YOU</u> (the blanks will be filled in later). Total Score _____

1. ___ _____
A. I like playing and winning competitive games.
B. I like playing competitive games…win or lose.
C. I do not like playing competitive games.

2. ___ _____
A. Being rich and/or famous is not that important to me.
B. I am making plans to be rich and/or famous.
C. I would like to be rich and/or famous.

3. ___ _____
A. I will work hard if it will pay off for me right away.
B. I don't mind working hard even if the payoff is uncertain.
C. I do not like to work any harder than is necessary.

4. ___ _____
A. I like accomplishing goals others have set for me.
B. I am not goal-orientated and prefer to take things as they come.
C. I like setting and accomplishing my own goals.

5. ___ _____
A. I like to follow the lead of others.
B. I like to take charge of things and can usually get others to follow.
C. I like to take charge of things, but have trouble getting others to follow.

6. ___ _____
A. I have a high level of energy and enthusiasm.
B. I am usually attentive and interested in things.
C. I am often tired and bored.

7. ___ _____
A. I am optimistic about my future.
B. I am pessimistic about my future.
C. I have no strong feelings about my future.

8. ___ _____
A. I like taking risks when there is a chance of big rewards.
B. I like to weigh the risk of things against the potential rewards.
C. I like sure things even though the rewards may be smaller.

9. ___ _____
A. I feel somewhat powerless over my life.
B. I feel confident and in charge of my life.
C. I feel I can manage my life with some help from others.

10. ___ _____
A. I like and can get along with most people.
B. I feel people are often hard to get along with.
C. I like my friends, but do not like meeting new people.

11. ___ _____
A. I like creating new things and ideas.
B. I sometimes like adapting and modifying old things to make them better.
C. I usually like leaving things pretty much as they are, “if it ain’t broke, don’t fix it.”

12. ___ _____
A. I try to avoid making mistakes because of what others might think.
B. I am not afraid of making mistakes because I often learn a lot from them.
C. I prefer not to make mistakes because it sets me back.

13. ___ _____
A. I like to let things happen and then adjust accordingly.
B. I like when there is a plan, but I don’t like doing the planning.
C. I like making a plan, following it, and adjusting it as is necessary.

14. ___ _____
A. I like to make decisions and am willing to accept the consequences.
B. I like time to make decisions so I can get the opinion of others.
C. I would rather have others make decisions and not be responsible.

15. ___ _____
A. I only like solving problems which have simple answers.
B. I see problems as opportunities for coming up with creative solutions.
C. I like solving problems using methods I have learned in the past.

16. ___ _____
A. I usually finish things I start.
B. I tend to give up on things that aren’t working or become too difficult.
C. I will never give up accomplishing something that is important to me.

17. ___ _____
A. I have the skills and talent to do many things well.
B. I have the skills and talent to do some things.
C. I tend to rely on others to do a lot of things for me.

VISUAL 3-3: SCORING YOUR PERSONAL ASSESSMENT

1. A: 3 points
   B: 2 points
   C. 1 point

2. A: 1 point
   B: 3 points
   C: 2 points

3. A. 2 points
   B. 3 points
   C. 1 point

4. A. 2 points
   B. 1 point
   C. 3 points

5. A. 1 point
   B. 3 points
   C. 2 points

6. A. 3 points
   B. 2 points
   C. 1 point

7. A. 3 points
   B. 1 point
   C. 2 points

8. A. 3 points
   B. 2 points
   C. 1 point

9. A. 1 point
   B. 3 points
   C. 2 points

10. A: 3 points
    B: 1 point
    C: 2 points

11. A: 3 points
    B: 2 points
    C: 1 point

12. A: 1 point
    B: 3 points
    C: 2 points

13. A. 1 point
    B. 2 points
    C. 3 points

14. A. 3 points
    B. 2 points
    C. 1 point

15. A. 1 point
    B. 3 points
    C. 2 points

16. A. 2 points
    B. 1 point
    C. 3 points

17. A. 3 points
    B. 2 points
    C. 1 point

VISUAL 3-4: CHARACTERISTICS OF ENTREPRENEURS

Willingness to Take Risks
Willingness to Work Hard
Willingness to Persevere
Willingness and Ability to Lead
Willingness and Ability to Solve Problems
Willingness and Ability to Make Decisions
Ability to Plan and Organize
Self-reliant
Self-confident
Self-motivating
Competitive
Creativity
Positive Attitude
No Fear of Failure
High Energy Level
Sociable
Desire to Achieve

VISUAL 3-5: WHAT DOES YOUR SCORE INDICATE?

17-28

You would likely be most comfortable and productive in a position where you work for someone else and welcome being able to leave your work behind when you leave it each day.

29-39

If you desire to be an entrepreneur, there are some characteristics on which you will need to work, however, you would likely be very comfortable and productive as a manager or supervisor.

40-51

You have strong entrepreneurial tendencies and so would likely be most comfortable pursuing your own interests or running your own business whether you are successful or not.

MAKING PERSONAL FINANCE DECISIONS
Unit Four: Paying Taxes

Rule 4: Contribute your share.

The difference between one's gross income and net income is the amount of money they must pay in taxes to various levels of government. People choose the amount and nature of these taxes, as well as how they are spent, largely through their choice of elected representatives. These lessons look at what governments do with the taxes they collect (like all income, they spend it on goods and services) and how taxes are structured and collected.

A. WHAT ARE TAXES FOR?

Lesson Description

Students participate in an activity that demonstrates the difference between private and public goods to show why it is necessary for the government to provide some goods and services. They also participate in an activity to understand why the government may wish to redistribute income.

Concepts

Private goods (and services)
Public goods (and services)
Income distribution

Objectives

Students will be able to describe the characteristics of a public good or service and provide examples.
Students will be able to explain why public goods are often provided by government.
Students will be able to explain why governments may wish to redistribute income.
Students will be able to explain that taxes, like all income, are used to buy goods and services.

Materials

Classroom $10 bills (enough for each student to have two)
Visual 4-1: Two Boxes

Time required

45 minutes

Procedure

1. Show Visual 4-1 and tell each student to draw two similar boxes on a sheet of paper and label them "1" and "2."

2. Tell each of them to imagine that they have 10 tokens that can be placed into these boxes and turned into treats. All they have to decide is how many they wish to place in Box 1 and how many they wish to place in Box 2 (where clearly these amounts have to add up to ten).

3. Explain that each token they place into their Box 1 will earn them one treat. So, if they place seven of their ten tokens there, they would get seven treats. The number of treats they get from tokens they place in Box 2 depends on how many tokens are placed in Box 2 by the entire class. Explain that for every ____ tokens *(this number should be approximately HALF the class size)* placed in Box 2 by the entire class, each student in the class will receive one treat (regardless of how many they placed there on their own). *(For example, if the class has 24 students, then for every 12 tokens placed in Box 2 by the entire class, each student would receive one treat. So, if the sum of all the tokens placed in Box 2 were 64, then each student would receive 5 treats—note 64/12 = 5.33 and so there are only 5 complete sets of 12.)*

4. To better understand the situation, ask the students how many treats they would each get if they all put all of their tokens in Box 1. *(Since each student would put 10 tokens in Box 1, each student would get 10 treats.)*

5. Now ask how many treats they each would get if they put all of their tokens in Box 2. *(The total number of tokens placed in Box 2 would be 10 times the number of students in the class. For example, if the class has 24 students then 240 tokens would be in Box 2. 240/12 = 20 meaning that each student would get 20 treats—note that this is why the payoff in Box 2 is based on HALF the size of the class.)*

6. Explain that Box 2 pays off twice as well as Box 1—20 treats versus 10 treats. Ask the class if this means that Box 2 is the best choice for everyone. *(Typically a student will make the point that if s/he placed all her/his tokens in Box 1, while the remainder of the class placed all their tokens in Box 2, the student would not only get the 10 treats from Box 1, but also MORE than ten treats from the rest of the class putting their tokens in Box 2. In the example above 23 students would be putting 10 tokens each into Box 2 for a total of 230 tokens. 230/12 = 19.167, so each student would get 19 tokens. However, the student who put her/his tokens in Box 1 would end up with 10 + 19 = 29 tokens! If nobody mentions this, bring up the possibility yourself so students see that it isn't that clear how they should split their tokens between the two boxes.)*

7. Have the students decide and write the number of their ten tokens they wish to allocate to each Box. Have them fold up their papers so no one can see what they wrote and turn them in.

8. Go through all the papers and tally the total number of tokens allocated to Box 2. Divide this by half the class size and announce that each and every student has just earned X treats based on the number of tokens allocated to Box 2. To find their total treats, they just add this to the number they put in Box 1. *(Clearly, those students who put most of their tokens in Box 1 will end up with the most treats, however, because many*

chose to put their tokens in Box 1, the total number of treats they get is usually less than what they could have earned had everybody simply put their tokens in Box 2.)

9. Calculate the total number of treats earned by the class based on their allocations. *(This is relatively simple to do. First determine the number of treats generated from Box 2—this is X above times the number of students in the class. Then add to this the number of treats generated by Box 1, this is just the total number of tokens—10 times the number of students in the class—minus the number of tokens placed in Box 2 which you have already determined.)*

10. Compare the actual number of treats actually generated to what could have been generated had everyone simply put all their tokens in Box 2 (already determined in Step 5). *(The number is generally less, sometimes significantly less.)*

11. Explain that the class did not do a very good job of turning tokens into treats. They could have had more treats had they simply all put their tokens in Box 2. If they think of the tokens as "dollars" and the treats as "goods and services," then what just happened was not a very good deal--they could have gotten a lot more for their money.

12. Explain that the two boxes represent two different types of goods. Box 1 represents a **private** good or service while Box 2 represents a **public** good or service. A public good generally has two characteristics which make it different from a private good: (1) *non-rivalry* which means one person's consumption or use of the good does not diminish other people's ability to also consume and enjoy it and (2) *non-excludability* which means it is impossible or difficult to exclude people who did not pay for the good from being able to consume and enjoy it.

13. Provide some examples of public goods emphasizing the two characteristics above: national defense, public television, over-the-air radio/television broadcasts, natural environments (rainforests, parks, wildlife habitat, wilderness areas), a fireworks display, the services of a lighthouse, highways, police and fire protection, mosquito control, street-lighting, etc. *(For example, if someone decides to spray mosquito nesting areas to reduce mosquitoes in an area, no one in the area can be excluded from receiving the benefits even if they did not contribute to paying for the service.)*

14. Explain that people hope other people will buy these goods and services so they can spend their money on private goods and end up with <u>both</u> the public and private goods. Unfortunately, as demonstrated by this activity, since everybody has the same incentive, not much of the public good would be purchased or provided since suppliers could not exclude non-payers from getting the benefits. Thus, government typically steps in to provide these type of goods and pays for them by collecting taxes.

15. Explain that the government also takes taxes from one group of people and transfers those funds to another group. To understand why it does this, tell the class they are going to a pizza store.

16. Distribute two classroom $10 bills to each student in class.

17. Tell the students that they can buy either pepperoni or vegetarian pizzas and that the price for both kinds of pizza is $10 each. Tell the students that their $20 can only be used to buy pizzas and so they can each afford two pizzas.

18. Ask each student what they would like to buy: two pepperoni pizzas, two vegetarian pizzas, or one of each. Record a tally on the board. *(Note: remember those students who chose the vegetarian pizzas.)*

19. Report the results: ___ pepperoni and ___ vegetarian. *(Fill in the blanks with the total number chosen of each kind. The sum should be equal to the number of $10 bills distributed. It is likely that more pepperoni pizzas were chosen.)*

20. Pick up all the $10 bills and then redistribute them, giving those students who chose vegetarian pizzas 4-6 bills and giving the remaining students 0-1 bills.

21. Again, ask each student how many of each kind of pizza they would like to buy and record a tally on the board. *(Students with more dollars will be able to buy more pizzas—i.e. a student with six bills can choose to buy four vegetarian pizzas and two pepperoni pizzas, while a student with no bills could not afford to buy any pizzas.)*

22. Report the results: ___ pepperoni and ___ vegetarian. *(Given that the vegetarian lovers had more of the bills, there should be a greater amount of vegetarian and a lower amount of pepperoni, although the sum of both kinds should still be the same (and equal to the total number of $10 bills.)*

23. Have students comment on the different result. *(Most will say something about how those with the most money got more of what they wanted. Some might comment that the second distribution wasn't "fair" because some students got more money than others.)*

24. Explain that the activity shows the effect of **income distribution** (or the way income is distributed amongst individuals in a society) on the mix of goods produced and consumed in an economy. It illustrates that essentially each dollar of income or wealth a person has is like one vote on what gets produced and consumed.

25. Ask: Is this fair? *(Some students will say "yes" because they believe the rich may have earned their extra income or wealth through hard work or making good choices. Other students will say "no" because they perhaps believe everyone doesn't have the same opportunities to earn income or that each person's desires should count equally.)*

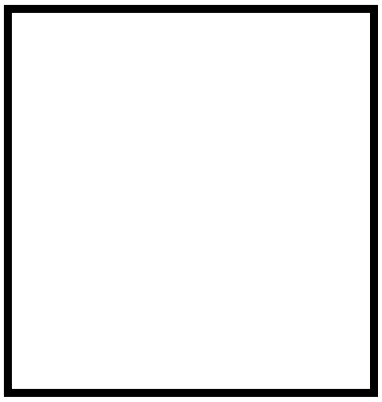
26. Remind students that one's income or wealth is based on the quality and quantity of resources they have to sell…most notably their labor services. However, a person might not be able to sell these services because they are too young or old to work or they may be disabled and unable to work. They might also be willing to work but cannot find a job and so are unemployed. In each of these cases they would not have any income and as

was demonstrated they would get no goods and services (no pizzas). Because of concern for these people, governments often tax those with more income and redistribute it to those who have very little or no income. For example, the U.S. government redistributes income to the poor through welfare programs, the unemployed through unemployment benefit programs, and the disabled and elderly through Social Security programs.

27. Closure. This lesson has focused on two reasons why governments collect taxes: to provide public goods and services and to redistribute income so those that may be disadvantaged so they are able to purchase private goods and services. In both cases, taxes end up being used to buy goods and services.

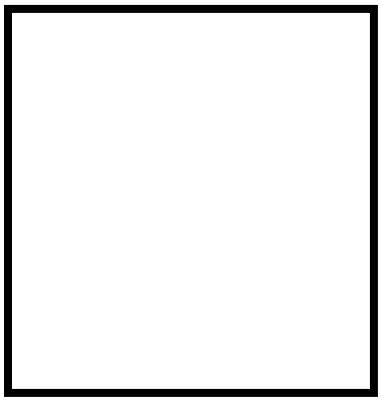
VISUAL 4-1: TWO BOXES

1



FOR EACH TOKEN PLACED HERE, YOU WILL RECEIVE ONE POINT.

2



FOR EVERY_____TOKENS PLACED HERE BY THE ENTIRE CLASS, YOU WILL RECEIVE ONE POINT.

B. UNDERSTANDING TAXES

Lesson Description

Students discuss factors that make various taxes different (different bases, rates, structures, methods of collection, and level of government imposing the tax) using a simple tax formula and information about four common types of taxes (income, payroll, sales, and property). Students apply this knowledge to calculate the total taxes paid and the net income of three households based on their gross income and expenditures.

Concepts

Tax base
Tax rate
Tax structure (progressive, proportional, and regressive)
Types of taxes (income, payroll, sales, and property)
Net income

Objectives

Students will be able to define and use a simple tax formula to determine the amount of taxes paid as the tax base times the tax rate.
Students will be able to explain and determine the structure of a tax.
Students will be able to describe the most common types of taxes.
Students will be able to determine a household's total taxes and net income based on its gross income and expenditures.

Materials

Activity 4.1: Calculating Taxes & Net Income (a copy for each student)
Visual 4.2: Tax Structures
Visual 4.3: Characteristics of Common Taxes
Visual 4.4: Answers to Activity 4.1 (Part B)

Time Required

45 minutes

Procedure

1. Ask students: "What taxes do people, including yourself, have to pay?" *(Answers will likely include income taxes and sales taxes, but could also include many others such as excise taxes, tariffs, property taxes, payroll taxes, etc.)*

2. Ask: "Are all these taxes the same?" *(No.)* "What makes them different from each other?" *(Answers will likely focus mostly on the tax rate or how they are paid.)* Explain that this lesson will look at the most common taxes people pay and characteristics that make them different.

3. Explain that the dollar amount of taxes paid for most taxes is determined by taking a percent of some base. Write "B x t = T" on the board and define B as the **tax base** (typically the dollar value of something such as income, property, or amount spent on

something), t as the **tax rate** (usually expressed as a percentage or decimal such as 6% or .06), and T as the amount of taxes paid. For example, if the tax base is $10,000, the tax rate is 5% (or .05), then the taxes paid would be $500 ($10,000 x .05--note that when using the formula, the decimal expression of the tax rate is used). So, two ways that taxes differ from one another would be to have different bases and/or different rates.

4. Explain that tax rates may be different not only in their magnitude (5% versus 10%), but also on how they may vary for different amounts of the tax base. This is called the **tax structure** of a tax.

5. Display Visual 4-2. Explain that if the tax rate is the same for all amounts of the tax base, then the tax structure is called **proportional** (or a "flat" tax). In this case, everyone pays the same percent regardless of the amount of their base. However, if the tax rate rises as the base rises, the tax structure is called **progressive**. In this case, those people with higher bases pay a larger percent than those with lower base amounts. If the tax rate falls as the base rises, the tax structure is called **regressive**. In this case, those people with higher bases pay a smaller percent than those with lower base amounts. Note that the structure of the tax does not depend on the amount of taxes paid (in the Visual 4-2 examples those with the higher base pay more taxes in each case), but on how the tax rate changes as the size of the tax base changes.

6. Display (or distribute as a handout) Visual 4-3. Explain that this summarizes the characteristics of four common taxes that people pay with respect to the tax base, the tax structure (as described in Step 5), how the tax is collected and which level of government is imposing the tax. Discuss the following:

Income tax

The base of income taxes is the income or money people earn from any source. Most people earn income by working (selling their human resource services) which is called wage or salary income. People also can earn income in the form of interest on their savings, dividends from their stocks, rents on property owned, royalties on copyrighted material, profits from a small business, and other ways. The federal personal income tax taxes all these types of income and has a progressive structure. This is also true for most states that have an income tax.

Payroll tax

The base of payroll taxes is NOT all income, but ONLY wage and salary income (so, for example, income earned from interest is not subject to payroll taxes). Typically, both the wage earner and their employer pay payroll taxes on the wages earned (and usually the tax rate for both is the same, although it doesn't have to be). So, for example, if a wage earner earned $400 during a pay period and the payroll tax was 6%, $24 ($400 x .06) would be deducted for payroll taxes from the earner's check and the employer would also have to pay $24. The government would thus receive $48 in taxes (which is 12% of the amount of wages). Another feature of payroll taxes is that they are may be capped at a certain income level. Beyond that amount, neither the wage earner nor the employer pays any additional payroll taxes. For example, in 2011, the income cap on the Social Security portion of payroll taxes was capped at $106,800. So, this tax would be proportional below $106,800, but regressive at wage levels above $106,800 (the tax rate would fall as

wages earned exceeded the cap). For example, a person with wages of $213,600, which is twice the cap, would be paying a tax rate half of the stated payroll tax rate since only half their income would be subject to the tax. In 2011, the Medicare portion of payroll taxes was uncapped and had a tax rate of 1.45% making it a proportional tax.

Sales tax

The base of sales taxes is purchases of goods and services. This is usually a fixed percent. So, with respect to purchases, it is a proportional tax. However, with respect to income this tax tends to be regressive because people with lower incomes spend a larger percent of their income on goods and services. For example, suppose the sales tax rate is 5%. A household with an income of $25,000 might spend 80% of their income ($20,000) on goods and services and thus pay $1000 ($20,000 x .05) in sales tax while a household with an income of $100,000 might spend 60% of their income ($60,000) on goods and services and pay $3000 ($60,000 x .05) in sales tax. With respect to their incomes, the lower-income household is paying 4% of their income ($1000/$25,000), while the higher-income household is paying only 3% ($3000/$100,000). Many states, recognizing that this is regressive, exclude some items (most often those items purchased by lower-income households such as food and clothing) from the tax to make it less regressive. The federal government also collects taxes on the purchase of certain items such as cigarettes, tires, and gasoline. These sales taxes on specific items are called *excise* taxes and have different tax rates for different items.

Property tax

The base of property taxes (also called real estate or personal property taxes) is typically the assessed value of the land and house(s) a household owns. The assessed value is often based on the "market value" or estimated price that the property would sell for if it was sold. These taxes are usually proportional.

7. Distribute a copy of Activity 4-1 to each student. Give the following example to show how to use the income tax table shown: Suppose a household has an income of $76,000. This amount is "over $40,000 but not over $100,000" so the tax should be calculated using line 3 of the table. The income tax owed would be $7000 plus 25% of $36,000 (which is the amount $76,000 is above $40,000), or $7000 + $9,000 = $16,000. Have students working in small groups complete Part A of Activity 4-1. *(1. The income tax is progressive, although technically it is proportional up to $10,000 and then progressive for all remaining income levels. 2. The payroll tax is proportional for wage/salary income up to $100,000 and then regressive for wage/salary above $100,000. 3. The payroll tax is regressive with respect to all income if the household has any non-wage income. 4. The sales tax is proportional with respect to purchases. 5. The sales tax is likely regressive with respect to income assuming lower income households spend a larger portion of their income on goods and services. 6. The property tax is proportional with respect to property values.)*

8. Define **net (or disposable) income** as income received (gross income) minus taxes. Explain that households can basically do two things with their net income: spend it on goods and services (including contributions to others to purchase goods and services) or save it. So, a household's gross income is the sum of the taxes it pays, the amount it spends, and the amount it saves.

9. Have students complete Part B. of Activity 4-1. *(Options: (1) Have students work in groups of three with one student assigned to each household…and assisting each other as necessary. Show Visual 4-4 and discuss answers. (2) Assign as homework for all students to complete and discuss answers the next day in class using Visual 4-4.)*

10. Closure. People face many different kinds of taxes. It is important to understand these various taxes because they determine the net income one has available to spend and/or save. Because of taxes this amount will generally be less than the income one receives from working and other sources. Changes in the kind of taxes that are collected, their base, their rate, their rate structure, etc. are made by the various levels of government. Thus, households choose the taxes they pay primarily through the people they elect to run their government.

ACTIVITY 4-1: CALCULATING TAXES & NET INCOME

Suppose the following describes the various taxes in an economy:

Income Tax

If income over…	but not over…	the **income tax** owed is…	of the amount over…
$0	$10,000	10%	$0.
$10,000	$40,000	$1,000 + 20%	$10,000.
$40,000	$100,000	$7,000 + 25%	$40,000.
$100,000	$300,000	$22,000 + 30%	$100,000.
$300,000	…	$82,000 + 40%	$300,000.

Payroll Tax

The **payroll tax** owed is 6% of wage/salary income earned up to $100,000 (wage/salary income earned in excess of $100,000 is taxed at 0%).

Sales Tax

The **sales tax** owed is 5% on all goods and services purchased.

Property Tax

The **property tax** owed is 1% of the assessed value of one's land and house.

Part A.

Progressive, Proportional, or Regressive?

1. _____ The income tax with respect to all income.
2. _____ The payroll tax with respect to wage and salary income.
3. _____ The payroll tax with respect to all income.
4. _____ The sales tax with respect to purchases on goods and services.
5. _____ The sales tax with respect to all income.
6. _____ The property tax with respect to property values.

ACTIVITY 4-1 (continued)

Part B.

Calculate the amount of each tax the following three households would owe, the total amount of taxes they would owe, their net income, and the total amount of their saving.

Hultstrom Household

Wage and Salary Income: $20,000
Other Income: $0
Purchases of Goods and Services: $15,000
Value of Land and House: $0 (They are renters.)

Income Tax: _____
Payroll Tax: _____
Sales Taxes: _____
Property Tax: _____
Total Taxes: _____
Net Income: _____
Saving: _____

Rodriguez Household

Wage and Salary Income: $60,000
Other Income: $0
Purchases of Goods and Services: $36,000
Value of Land and House: $100,000

Income Tax: _____
Payroll Tax: _____
Sales Taxes: _____
Property Tax: _____
Total Taxes: _____
Net Income: _____
Saving: _____

Jones Household

Wage and Salary Income: $200,000
Other Income: $50,000 (Interest and dividend income)
Purchases of Goods and Services: $140,000
Value of Land and House: $1,000,000

Income Tax: _____
Payroll Tax: _____
Sales Taxes: _____
Property Tax: _____
Total Taxes: _____
Net Income: _____
Saving: _____

VISUAL 4-2: TAX STRUCTURES

B x t = T
(Tax Base x Tax Rate = Taxes Paid)

PROGRESSIVE:

Rate rises as the amount of the Base rises

Tax Base	Tax Rate	Taxes Paid
$ 20,000	10% (0.10)	$ 2,000
$ 60,000	20% (0.20)	$12,000
$250,000	30% (0.30)	$75,000

PROPORTIONAL ("FLAT"):

Rate is the same for all amounts of the Base

Tax Base	Tax Rate	Taxes Paid
$ 20,000	10% (0.10)	$ 2,000
$ 60,000	10% (0.10)	$ 6,000
$250,000	10% (0.10)	$25,000

REGRESSIVE:

Rate falls as the amount of the Base rises

Tax Base	Tax Rate	Taxes Paid
$ 10,000	10% (0.10)	$ 1,000
$ 60,000	8% (0.08)	$ 4,800
$250,000	5% (0.05)	$ 7,500

VISUAL 4-3: CHARACTERISTICS OF COMMON TAXES

TAX	BASE	RATE STRUCTURE	HOW COLLECTED	GOVERNMENT LEVEL
INCOME TAX	**All Income**	**Progressive**	**Withheld over the year; file tax form once a year**	**Federal; Most States; Some Local**
PAYROLL TAX	**Wage Income**	**Social Security: Regressive due to income cap; Medicare: Proportional**	**Withheld from each paycheck**	**Federal**
SALES TAX	**Value of goods and services purchased**	**Proportional with respect to purchases; Regressive with respect to income**	**Paid at time of purchase**	**Most States; Some Local**
PROPERTY	**Value of Property (House/Land)**	**Proportional with respect to value of property**	**Assessment each year (often billed and paid in one or two payments during the year or as part of owner's mortgage payment)**	**Mostly Local**

VISUAL 4-4: ANSWERS TO ACTIVITY 4-1 (PART B)

Part B.

Calculate the amount of each tax the following three households would owe, the total amount of taxes they would owe, their net income, and the total amount of their saving.

Hultstrom Household

Wage and Salary Income: $20,000
Other Income: $0
Purchases of Goods and Services: $15,000
Value of Land and House: $0 (They are renters.)

Income Tax: **$1000 + ($10,000 x .20) = $3000**
Payroll Tax: **$20,000 x .06 = $1200**
Sales Taxes: **$15,000 x .05 = $750**
Property Tax: **$0 x .01 = $0**
Total Taxes: **$3000 + $1200 + $750 + $0 = $4950**
Net Income: **$20,000 - $4950 = $15,050**
Saving: **$15,050 - $15,000 = $50**

Rodriguez Household

Wage and Salary Income: $60,000
Other Income: $0
Purchases of Goods and Services: $36,000
Value of Land and House: $100,000

Income Tax: **$7000 + ($20,000 x .25) = $12,000**
Payroll Tax: **$60,000 x .06 = $3600**
Sales Taxes: **$36,000 x .05 = $1800**
Property Tax: **$100,000 x .01 = $1000**
Total Taxes: **$12,000 + $3600 + $1800 + $1000 = $18,400**
Net Income: **$60,000 - $18,400 = $41,600**
Saving: **$41,600 - $36,000 = $5600**

Jones Household

Wage and Salary Income: $200,000
Other Income: $50,000 (Interest and dividend income)
Purchases of Goods and Services: $140,000
Value of Land and House: $1,000,000

Income Tax: **$22,000 + ($150,000 x .30) = $67,000**
Payroll Tax: **$100,000 x .06 = $6000**
Sales Taxes: **$140,000 x .05 = $7000**
Property Tax: **$1,000,000 x .01 = $10,000**
Total Taxes: **$67,000 + $6000 + $7000 + $10,000 = $90,000**
Net Income: **$250,000 - $90,000 = $160,000**
Saving: **$160,000 - $140,000 = $20,000**

MAKING PERSONAL FINANCE DECISIONS
Unit Five: Budgeting

Rule 5: Live within your means.

People work to earn income. They earn income to purchase goods and services either now ("spending"), later ("saving"), or for someone else ("sharing"). So, all of one's income is used to buy goods and services and this income limits the amount of goods and services they can buy. These lessons look at how to allocate or budget one's income with respect to these various options without exceeding the income one earns.

A. MAKING A BUDGET: IT IS ALL SPENDING!

Lesson Description
Students discover that all elements of a budget are essentially spending on goods and services. They are shown a process that can be used to determine a budget.

Concepts
Spending
Saving
Budget
Gross income
Net income
Investing

Objectives
Students will be able to distinguish between various types of spending: regular (variable and fixed), irregular, and future.
Students will be able to follow a process in establishing a budget.

Materials
Visual 5-1: Elements of a Budget
Visual 5-2: The Budget Process

Time Required
30 minutes

Procedure
1. Ask: Why do people work? *(To earn income to buy goods and services they want.)*

2. Ask: Once you earn income, what are some of the things you can do with it? *(Spend it on goods and services you want, save it, invest it, pay taxes, share with others, etc.)*

3. Explain that while these all sound very different, they all have one thing in common: they ALL represent spending. ***Spending*** is the purchase of goods and services which give people satisfaction. Clearly, buying a video game, a pizza, or a new car are examples of what we generally think of as spending.

4. Ask: Why do people save? *(Usually so they can spend on goods and services later.)* Note that ***saving*** is really just setting aside part of your income today for future spending on goods and services. People invest part of their saving in hopes of growing their wealth over time so that they can spend it on goods and services later such as in their retirement years.

5. Ask: What do people get from paying taxes? *(They get government-provided goods and services such as roads, schools, police and fire protection, and national defense or the government transfers the funds collected to the unemployed, elderly, or disabled and they buy goods and services that they need. Emphasize that once again that someone is getting goods and services.)*

6. Ask: Why do people give to churches and charity organizations and why does the government provide help to the poor with some of their tax revenues? *(So that people who may be unable to buy goods and services are able to obtain them. Emphasize that essentially when people share their income they are spending on goods and services for others.)*

7. Explain that making a ***budget*** is basically making a plan on how to allocate one's income to all these various types of spending.

8. Display Visual 5-1. Explain that a person's monthly ***gross income*** is the total amount of income they earn. But before they can start making decisions about how to spend this income, they must subtract taxes (and possibly other deductions) to get their monthly ***net income*** (see Unit Four: Paying Taxes). There are basically three ways to allocate one's monthly net income, or three ways that one's monthly net income can be spent: regular spending, irregular spending, and future spending. *Regular spending* is for goods and services normally or regularly purchased during a month (Visual 5-1 provides examples). Regular spending can be broken down further into fixed and variable spending: an expense is considered *fixed* if the amount that must be spent on it is the same every month such as a car or house payment; an expense is considered *variable* if it can vary from month to month such as food, utilities, and entertainment. *Irregular spending* is for goods and services that are not normally purchased every month but on a different payment schedule (for example, annually or semi-annually) or on an irregular basis (again Visual 5-1 provides examples). *Future spending* is for the purchase of goods and services in the future, typically beyond one year. Note that regular spending is allocating income to what most people think of as "spending." Irregular spending is allocating income to what most people think of as "short-term (ST) saving." Finally, future spending is allocating income to what most people think of as "long-term (LT) saving" or "investing." So, the elements of a budget are all the ways one's income can be spent.

9. The next question is to decide how much to allocate to each type of spending. Display Visual 5-2.

10. Explain that this visual shows a four-step process to help in determining how to allocate one's income (or make a budget). Note that it is just one of many ways one might decide how to make a budget. *(Teacher note: the numbers used here assume a household with a gross annual income of $54,000--a bit more than the 2007 U.S. median household income of $50,232--and uses information from the 2002-2004 Consumer Expenditures Survey to approximate amounts allocated to each expenditure category).*

11. Discuss each step as follows:

Step 1: Determine how much money you have to allocate each month. This is your net income and it is determined by subtracting taxes and other deductions from your gross income (the actual amount you earned). Think of net income as your "take-home" pay, or the income that you have control over. In the example, the household's gross income is $4500 per month and it is assumed that taxes (withholding for income taxes, Social Security and Medicare taxes, and other deductions) are $1000 per month, leaving them a net income of $3500 to decide how to spend.

Step 2: "Pay yourself first" which means to set aside money to meet your long-term goals (such as a down payment on a house, retirement, college fund for your children, funds to start a business, etc.). Not spending part of your current income is called saving. If this money is to be used to meet long-term goals it is called long-term saving and is usually used to buy assets such as stocks, bonds, certificates of deposit, etc. The purchase of these assets is called ***investing***. How much you set aside to meet your long-term goals depends on your financial plan (see Unit Two: Planning and Tracking). In this example, the household is setting aside $500 to invest in meeting its long-term goals leaving them with $3000.

Step 3: Set aside money to meet your short-term irregular expenses. This is short-run saving and is based on your annual irregular expenses. This money is typically held in a savings account or other liquid asset to pay for irregular expenses as they come up during the year. How much you set aside each month is based on your annual irregular expenses divided by 12. Since this household is expecting irregular expenses totaling $6000 for the year, they need to set aside $500 each month to pay for these.

Step 4: The remaining money is what you have left to meet your regular monthly expenses (both fixed and variable). It is best to think of the fixed expenses much like taxes and deductions above in Step 1; they must be paid before you can make any discretionary choices on the variable expenses. For this household, housing and transportation are likely to be fixed expenses, but it could also include things like cable/internet/phone services. Fixed expenses are essentially commitments you have already made to pay for something.

12. Closure. Note that if after going through this budget process you find that you don't have as much to spend on variable expenses in Step 4 as you would like, this tells you that you need to reconsider each of the expenditures made before reaching this point. Perhaps your fixed expenses are too large because you purchased (or rented) too big of a house or too nice of a car. Perhaps there are some irregular expenses you could reduce (such as the amount allocated to vacations or gifts). Perhaps you need to rethink your long-term goals and decide if they are as valuable to you as current additional variable spending would be. The point is, you should consider the various trade-offs in your budget and adjust things until you have a budget that is in line both with your income and your spending desires (both short-term and long-term).

VISUAL 5-1: ELEMENTS OF A BUDGET

Gross Income - Deductions = Net Income

Net Income = Regular Spending + Irregular Spending (ST Saving) + Future Spending (LT Saving/ Investment)

Regular Monthly Spending (Fixed and Variable)

- Housing (Rent/Mortgage)
- Food (Groceries, Dining Out)
- Transportation (Car Payment, Gas, Maintenance)
- Utilities (Electric, Water/Sewer, Phone, Cable, Oil/Gas)
- Personal (Apparel, Personal Care Items)
- Entertainment (Movies, Hobbies, Sports)
- Miscellaneous

Irregular Yearly Spending

- Insurance (Life, Medical, Home, Auto)
- Taxes and Fees (Property Tax, Auto Registration)
- Expected Expenses (Medical, Education, Vacation, Holiday Gifts, Home Maintenance, Charity)
- Unexpected Expenses (Car Repair, Medical, Appliances)
- Near-term Goals (Car, New Addition, Education)

Future Spending

- Retirement/Bequest
- Start your own business/Other long-term goals

VISUAL 5-2: THE BUDGET PROCESS

Step 1. Determine Monthly Net Income

(= Gross Monthly Income - Deductions)

$54,000/yr. → $4500/mo. (gross)

$4500/mo. - $1000/mo. = $3500/mo. (net)

Step 2. Subtract Long-term Saving

(amount determined by financial plan)

$3500/mo. - $500/mo. = $3000/mo.

Step 3. Subtract Short-term Saving

(add up yearly requirement and divide by 12)

Insurance/Taxes	$1500/yr.
Expected Expenses	$2500/yr.
Charity	$1000/yr.
Unexpected Expenses	$ 500/yr.
Near-term Goals	$ 500/yr.
	$6000/yr. → $500/mo.

$3000/mo. - $500/mo. = $2500/mo.

Step 4. Budget Monthly Spending

Housing (Shelter)	$800/mo.
Transportation	$500/mo.
Food	$400/mo.
Utilities	$300/mo.
Personal/Healthcare	$200/mo.
Entertainment	$200/mo.
Miscellaneous	$100/mo.
	$2500/mo.

B. BUDGET TRADE-OFFS: A PENNY HERE AND A PENNY THERE

Lesson Description
Students are given descriptions of several goods and services they can buy with their monthly income. They are given pennies to allocate to the purchase of these goods to illustrate that budgeting is really an allocation problem involving trade-offs.

Concepts
Trade-offs
Budget

Objectives
Students will be able to describe the trade-offs involved in making a budget.
Students will be able to establish a budget and adjust to different income levels.

Materials
24 pennies for each student
Activity 5-1: Allocating Monthly Income

Time Required
30 minutes

Procedure
1. Remind students that trade-offs are always involved in making decisions. A **trade-off** means that getting more on one thing usually means getting less of something else. Explain this is especially true when making a **budget** which is a plan on how to allocate their income each month.

2. Distribute Activity 5-1 and 24 pennies to each student. *(Optional: Have students work as a pair representing a couple with 24 pennies.)*

3. Explain that each penny represents about $100 in monthly gross income.

4. Have each student set four pennies to the side. Explain that this represents the taxes they must pay on their income. Therefore, each of them has $2000 to spend after taxes. This is their net income. *(Teacher note: $2000 per month or $24,000 per year will sound like a lot of money to most students. The expenditure amounts listed in each category of Activity 5-1, however, are based on reasonably realistic real-world figures. They will quickly discover that they cannot live as well as they might think.)*

5. Explain that Activity 5-1 shows various categories of spending common to most consumers. It also shows that as you spend more in each category you generally get more or better quality items in that category.

6. Tell students they are to allocate their remaining 20 pennies to these various categories in such a way that they get as much satisfaction as they can given their limited income. Allow 5-10 minutes for the students to allocate their 20 pennies.

7. Explain that they have each just created a budget or a plan on how to spend their net income each month.

8. Have students share how they allocated their pennies and why. (*Note that there are many possible choices and the "right" allocation depends on how valuable each of these items is to the individual.)*

9. Tell the students that due to a loss of income, inflation, or an unexpected expense, they now have only 18 pennies to spend. Have them decide where to make cuts but tell them they must keep the number of pennies they devoted to housing the same since housing is difficult and often costly to change in the short run. Allow a few minutes for the students to make their decisions.

10. Have several students explain what they gave up and why.

11. Closure. Explain that when income is limited you can't have all the things you would like. This forces you to make a decision and consider the trade-offs. For example, while a nicer house now is great, it means you have less money to save or use to buy other things. Making a budget is thus really deciding what is most important to you given that your income does not allow you to have everything you would like.

ACTIVITY 5-1: ALLOCATING MONTHLY INCOME

HOUSING (INCLUDING UTILITIES, INSURANCE) _____

20	$300,000, newer, 3-4 bedrooms, 2+ baths house
15	$225,000, 10-yr-old, 3-4 bedrooms, 2+ baths house
10	$150,000, 20-yr-old, 2-bedroom, 2-bath house
7	$100,000, 30-yr-old, 2-bedroom, one-bath house
5	$75,000, 30-yr-old+, 1-bedroom house or Nice apartment
4	3-room apartment
3	2-room apartment
2	1-room, older apartment
1	Sharing room with others/living in a car
0	No shelter

TRANSPORTATION (INCLUDING FUEL, OIL, INSURANCE) _____

10	Luxury SUV or Two late-model vehicles
7	Luxury vehicle or Two older vehicles
5	Late-model, larger vehicle
4	Late-model, smaller vehicle
3	Older-model, dependable vehicle
2	Older-model, questionable vehicle
1	Unreliable vehicle/Mass transit
0	No vehicle

FOOD (DINING IN AND OUT) _____

10	Gourmet and specialty foods, upscale restaurants
7	Good assortment of grocery foods, chain restaurants
5	Grocery foods, fast-food restaurants
4	Basic grocery foods, very limited dining out
3	Staples plus some processed foods
2	Staples only (minimum nutritional requirements met)
1	Staples only (minimum nutritional requirements not met)
0	No food

CLOTHING AND PERSONAL CARE GOODS AND SERVICES _____

10	New wardrobe every year, complete selection of personal care items
7	Up-to-date wardrobe, many trendy items, most personal care items
5	Mostly up-to-date wardrobe, some trendy items, several personal care items
4	Good wardrobe turnover, limited trendy items, complete toiletries
3	Some wardrobe turnover, mostly department-store quality, most toiletries
2	Limited wardrobe turnover, mostly out-dated items, some toiletries
1	No real wardrobe turnover, "new" clothes are secondhand, basic toiletries
0	Clothes on your back, no toiletries.

ACTIVITY 5-1(cont.): ALLOCATING MONTHLY INCOME

HEALTH /DENTAL INSURANCE _____

10 Complete coverage
7 Low deductible, low co-pays, good prescription coverage
5 Medium deductible, low co-pays, some prescription coverage
4 Medium deductible, medium co-pays, limited prescription coverage
3 High deductible, medium co-pays, no prescription coverage
2 High deductible, high co-pays, no prescription coverage
1 Very high deductible, need to use free clinics, no prescription coverage
0 No coverage

ENTERTAINMENT (TECHNOLOGY, HOBBIES, VACATIONS) _____

5 Full-service technology, non-local/two-week vacation, $100/week "fun" money
4 Good-service technology, non-local/one-week vacation, $75/week "fun" money
3 Some-service technology, local/two-week vacation, $50/week "fun" money
2 Very-limited technology services, local/one-week vacation, $25/week "fun" money
1 No technology services, $25/week "fun" money
0 No entertainment

CONTRIBUTIONS (CHARITY, NON-PROFIT ORGANIZATIONS) _____

4 $400/month in contributions
3 $300/month in contributions
2 $200/month in contributions
1 $100/month in contributions
0 No contributions

SAVING _____

5 $500/month of saving
4 $400/month of saving
3 $300/month of saving
2 $200/month of saving
1 $100/month of saving
0 No saving

MAKING PERSONAL FINANCE DECISIONS
Unit Six: Saving

Rule 6: Pay yourself first.

Saving is actually just a decision to spend later rather than today. It is a decision to buy goods and services in the future as opposed to buying them now. It is a difficult choice to make because people naturally prefer to enjoy good things now and incur costly things later. To overcome this natural preference, people must be given an incentive to wait to spend. That incentive is interest. These lessons look at why it is hard to save (due to a preference to have goods and services now) and why it is great to save (due to earning compound interest).

A. TIME PREFERENCE: WHY IT IS HARD TO SAVE

Lesson Description

Students investigate the decision to save as a choice between spending now or spending later and how people's natural preference with respect to the timing of benefits and costs affects this.

Concepts

Income
Net Income
Saving
Interest

Objectives

Students will be able to describe how the timing of benefits and costs can affect their choices, especially with respect to saving.

Materials

Visual 6-1: The Timing of Benefits and Costs

Time Required

20 minutes

Procedure

1. Remind students that the main reason people work is to acquire the income that is necessary to buy the goods and services they desire. **Income** is the payment people receive for selling productive resources. Most people sell the services of their human resource (or labor).

2. Ask students: Once people receive income, what are the three basic things they end up allocating it to? *(Spend it, pay taxes with it, and save it.)* Explain that these are all actually just different ways of buying goods and services that satisfy people's wants. Obviously when they spend their income, they get goods and services they desire now. However, when people pay taxes, they are also getting goods and services--government-provided goods and services such as national defense, the legal system, highways, education, police and fire protection, libraries, parks, and many other goods and services provided by federal, state, and local governments. Lastly, if people decide to save some of their income, they are really just choosing to buy goods and services at a later time. Thus, all income is fundamentally allocated to the purchase of goods and services because that is what gives people satisfaction and provides the incentive to work.

3. Explain that people have only a limited amount of control over how much they pay in taxes (to the extent they can vote for different candidates), so the basic income allocation question people face is how much of their **net income** (income received minus taxes) they will spend now and how much they will save for spending later**. Saving** is the amount of income people put aside today to buy goods and services in the future.

4. Tell students that during 2005 households in the U.S. had a negative savings rate, which means they were not only not saving, but spending more than they were earning. Ask students: How could they have done this? *(By spending past savings or by borrowing)* Continue by asking: Why do you think people save so little of their income? *(Answers will vary.)*

5. Write "Option 1: $100 today" and "Option 2: $100 a year from today" on the board. Tell the students that they can have either of the two options. Ask them to raise their hands if they would like Option 2. *(None are likely to raise their hands.)*

6. Next change Option 2 to "$102 a year from today" and repeat the question above. *(Likely no one will raise their hand again.)*

7. Continue raising the amount of Option 2 ($105, $110, $120, $150, $200, $500, etc.) until everyone is raising their hand. *(Some students may never choose Option 2, but if they are pressed, most would admit they would wait for $1 million a year from today if this was seriously offered to them.)*

8. Explain that what is being demonstrated is people's natural preference with respect to the timing of receiving some benefit. Basically, people prefer getting a given benefit sooner rather than later. To persuade them to wait requires offering a greater benefit in the future.

9. Return to the board and write down the original options given in Step 5. Tell the students that these now refer to payments they must make. Ask them to raise their hands if they would like Option 2. *(Most of the students will likely raise their hands).*

10. Explain that just the opposite of benefits, people prefer to pay or incur costs later rather than sooner.

11. Display Visual 6-1. Ask students about the timing of the benefits and costs of these activities. *(Eating Junk Food, Staying Up Late, Smoking, and Borrowing Money: Benefits Now, Costs Later; Exercising, Practicing a Musical Instrument, Studying, and Saving: Benefits Later, Costs Now.)*

12. Closure. Explain that since people prefer benefits now and costs later, they prefer to do those things where that is true and prefer not to do those things where that is reversed. But as was illustrated earlier, this "natural" preference can be overcome if there is some extra reward or incentive to wait. For saving, that reward is called **interest**, a payment of income based on the amount you save.

VISUAL 6-1: THE TIMING OF BENEFITS AND COSTS

Activity	Now or Later?	
	Benefits	Costs
Eating Junk Food		
Exercising		
Staying Up Late		
Smoking		
Practicing a Music Instrument		
Studying		
Borrowing Money		
Saving		

B. SIMPLE AND COMPOUND INTEREST: WHY IT IS GREAT TO SAVE

Lesson Description
Formulas for simple and compound interest, as well as the Rule of 72, are developed and used to illustrate the benefit of saving in general, and the benefit of saving early in particular.

Concepts
Simple Interest
Annual Interest Rate
Principal
Compound Interest
Rule of 72

Objectives
Students will be able to calculate the change in the value of an asset with simple and compound interest.
Students will be able to estimate the change in the value of an asset using the Rule of 72.

Materials
Visual 6-2: Simple Interest
Visual 6-3: Compound Interest
Visual 6-4: Rule of 72
Visual 6-5: Jack and Jill

Time Required
45 minutes

Procedure
1. Write "$100" on the board. Explain that **simple interest** is an annual payment based on a percentage of the amount you save. The percentage is called the **annual interest rate**. Suppose the percentage or rate is 8%. Note that 8% written in decimal terms is .08 (instruct students to move the decimal point in the percentage figure two places to the left). Write "x .08" after "$100" and then write " = $8.00" (so that you have "$100 x .08 = $8.00"). Note that $8 is the interest earned. Adding that to the original amount saved of $100, would mean you would have $108.00 after one year. Note on the board that this is the original $100 plus the interest which is $100 x .08, or $100 + $100 (.08), which can be written as $100 (1 + .08). The original amount saved is called the **principal**.

2. Display Visual 6-2. This shows a general formula based on what was just presented. Illustrate the use of the formula with the information from Step 1.

3. Have the students practice using the formula with the problems below. Ask them both the amount of interest earned and the value of the savings after one year.
a. $50 at 5% *(Interest earned: $2.50, Value after one year: $52.50)*
b. $200 at 7% *(Interest earned: $14, Value after one year: $214)*

c. $60 at 10% *(Interest earned: $6, Value after one year: $66)*
d. $40 at 4% *(Interest earned: $1.60, Value after one year: $41.60)*

4. Ask students: What would happen if they left the $108 in savings for another year with the interest rate still at 8%? *(They should recognize it would make more interest.)* Have them use the simple interest formula to determine how much their savings would be at the end of the second year. *($108 x [1 + .08] = $116.64.)* Ask students: How much interest was earned the second year? *($8.64)* Ask students: Why is this greater than before? *(Because interest was earned not only on the original $100, but also on the previous interest of $8.)*

5. Define **compound interest** as interest earned on interest.

6. Display Visual 6-3. Continue the example above through the third year leading to the general formula for the value of the savings after N years. Based on this formula, ask students to predict the effect of the size of the annual interest rate and the number of years on the value of the savings at the end. *(Both the annual interest rate and the number of years are directly related to the ending value, that is, the larger r and N, the greater is V.)*

7. Have each of the students determine the ending value of savings in each of the following cases using the compound interest formula:
a. $50 at 12% for 6 years *($98.69)*
b. $200 at 8% for 9 years *($399.80)*
c. $100 at 6% for 12 years (*$201.22)*
d. $20 at 4% for 18 years *($40.52)*

8. Ask students what they notice about the ending value relative to the initial value. *(The ending values are about double the initial values.)* Tell the students there is a nice rule of thumb associated with the compound interest formula. It is called the **Rule of 72**.

9. Display Visual 6-4. Explain that the Rule of 72 tells you roughly how many years it will take to double your savings given different interest rates. The number of years to double is 72 divided by the annual rate of interest expressed as a whole number. Go through the examples on the visual and note that the more times the value is allowed the double the faster it grows.

10. Display Visual 6-5. Have students use the Rule of 72 to estimate the ending values for Jack and Jill. *(At 8% both their savings doubles every 9 years. However, since Jill leaves her savings in for 45 years, it doubles five times and she ends up with around $160,000. Jack only leaves his savings in for 27 years, so it doubles only three times and he ends up with $40,000.)* Note that they both saved the same amount ($5000) and are earning the same annual interest rate (8%), but Jill ends up with FOUR times more than Jack simply because she saved it earlier.

11. Closure. While it is difficult to put off spending to a later date, interest is the reward for doing so. In addition, given the power of compound interest, that reward can be very large. In the case of Jill, she gave up the opportunity to buy $5000 worth of goods and services today, but she will be able to buy $160,000 worth of goods and services when she is 65. While inflation will likely reduce the real value of her money, she will still be able to buy and enjoy significantly more goods and services in the future than she could have gotten with $5000 today. And, as was illustrated by Jack, the opportunity cost of waiting to save can be very large--he ended up able to buy only a fourth of what Jill could even though he saved the same amount. With compounding (at 8%), the choice is not between having a car now or a car later, it is the choice between having a car now or two cars nine years from now or four cars 18 years from now, or eight cars (or a house!) 27 years from now. American humorist, Will Rogers, summed this up with this saying: "The best way to double your money is to fold it in half and put it in your pocket."

VISUAL 6-2: SIMPLE INTEREST

Ending Value (Balance) with Simple Interest

$$V = P (1 + r)$$

V = Value (Balance) after one year
P = Principal (initial amount saved)
r = Annual Interest Rate

VISUAL 6-3: COMPOUND INTEREST

Compound Interest

Starting Principal: **$100**

After One Year: **$100 + $100 (0.08) = $100 (1 + 0.08) = $108.00**

= $100 (1 + 0.08)

After Two Years: **$108 + $108(0.08) = $108 (1 + 0.08) = $116.64**

= [$100 (1 + 0.08)](1 + 0.08)

= $100 (1 + 0.08)^2

After Three Years: **$116.64 + $116.64 (0.08) = $116.64 (1 + 0.08) = $125.97**

= [$100 (1 + 0.08)^2] (1 + 0.08)

= **$100 (1 + 0.08)^3**

After N Years: **= $100 (1 + 0.08)^N**

In general: $$V = P (1 + r)^N$$

where V is the Value after N years, P the Principal, and r is the *annual* rate of interest**.**

VISUAL 6-4: RULE OF 72

RULE OF 72:

Years to Double =
72 / Interest Rate

@ 4% → 72/4 = 18 years
@ 6% → 72/6 = 12 years
@ 9% → 72/9 = 8 years
@ 12% → 72/12 = 6 years

An example:

$1 @ 12%:			
Now	**$1**	**After 24 years**	**$16**
After 6 years	**$2**	**After 30 years**	**$32**
After 12 years	**$4**	**After 36 years**	**$64**
After 18 years	**$8**	**After 42 years**	**$128**
		After 48 years	**$256**

So, $4000 saved at age 17 makes one a millionaire at age 65! ($4000 x 256 = $1,024,000)

VISUAL 6-5: JACK AND JILL

Jack saves $5,000 when he is 38 years old and puts it in an account that earns him 8% annual interest.

Approximately how much will he have when he is 65 years old?

Jill saves $5,000 when she is 20 years old and puts it in an account that earns her 8% annual interest.

Approximately how much will she have when she is 65 years old?

MAKING PERSONAL FINANCE DECISIONS
Unit Seven: Spending

Rule 7: Spend wisely.

Since everyone's income is limited, people need to make decisions about what goods and services to buy in order to maximize the happiness or satisfaction they get from their income. These lessons look at what one should consider in making that choice (what does it mean to get a "good deal") and show that spending on saving may be one of the best ways to be an even bigger spender than one's limited income might indicate is possible.

A. THE SPENDING DECISION: COLAS AND HOT DOGS

Lesson Description

Students help Joe, a guy at a baseball game, decide how many colas and hot dogs to buy. Joe's "best" choice is shown to be dependent on not only what Joe likes, but also on the amount of money he has and the prices he faces.

Concepts

Budget (Income) Constraint
Satisfaction (Happiness)
Diminishing Returns

Objectives

Students will be able to describe a budget or income constraint.
Students will be able to determine which combination of goods provides the most satisfaction (happiness) given an income (or budget) constraint.
Students will be able to describe how changes in prices will change consumer choices.

Materials

Activity 7-1: How Many Colas and Hot Dogs Should Joe Buy?
Visual 7-1: The Amount of Satisfaction (Happiness) Joe Gets from Colas and Hot Dogs
Visual 7-2: The Spending Decision

Time Required

45 minutes

Procedure

1. Tell the students that they are going to help Joe during his day at a baseball game. Joe loves to watch the game, but he is also very thirsty and hungry. Fortunately, vendors are selling colas and hot dogs. Unfortunately, colas cost $2 each, hot dogs cost $1 each and Joe has only $8 to spend. When someone has only a limited amount of money to spend,

it is called a ***budget or income constraint***, because it constrains or limits the amount of things they can buy.

2. Ask: How should Joe decide how many colas and hot dogs to buy? *(Students will likely say that Joe should buy more of the good he likes the most.)*

3. Display Visual 7-1. Explain that this shows how much ***satisfaction***, or happiness, Joe gets from different amounts of colas and hot dogs. For example, three colas would give him 24 units of happiness, while two hot dogs would give him 21 units. Explain that the table illustrates a general assumption economists make about the happiness people get from goods: getting more of a good makes people happier (more is preferred). So, note that as the amount of each good rises, so does the total amount of happiness (for example, four colas gives Joe 28 units of happiness while three colas only gives him 24 units).

4. Distribute a copy of Activity 7-1 to each student.

5. Given the information on Activity 7-1, have students determine the combination of colas and hot dogs they believe is the "best" for Joe to choose. *(Most students, assuming that the goal is to maximize Joe's happiness, will say two colas and four hot dogs. Some may choose a combination which is not affordable—costs more than $8. Some will have trouble figuring out which combination Joe should choose.)*

6. Remind students of the PACED decision-making process (see Part B of Unit 1). The five steps are: (1) define the problem, (2) list the alternatives, (3) determine the criteria, (4) evaluate the alternatives, and (5) make the decision.

7. Ask: What is the basic problem here? *(Joe wants to enjoy lots of colas and hot dogs, but only has $8 to spend—a <u>limited budget</u>.)*

8. Ask: What combinations of colas and hot dogs could Joe buy with $8? *(The combinations of 0 colas and 8 hot dogs, 1 cola and 6 hot dogs, 2 colas and 4 hot dogs, 3 colas and 2 hotdogs, and 4 colas and 0 hot dogs all cost exactly $8. Any of these combinations with fewer colas and/or fewer hot dogs could also be bought with $8. Emphasize that these are the <u>possible alternatives</u> for Joe given his limited amount of money.)*

9. Ask: What is a reasonable <u>criterion</u> to use to rank these alternatives? *(The amount of satisfaction a combination of colas and hot dogs gives Joe, since we would assume Joe wishes to get the most satisfaction possible.)*

10. Ask: How much satisfaction does Joe get from each of the possible alternatives? *(Use Visual 7.1, for example, 3 colas and 2 hot dogs would give him 45 units of satisfaction since 3 colas give him 24 units and 2 hot dogs give him another 21 units. 8 hot dogs and no colas would give him 35.2 units. Emphasize that this is the <u>evaluation</u> step of the decision-making process.)*

11. So, given that Joe is trying to get the most happiness for his $8, which combination of colas and hot dogs should he buy? *(2 colas and 4 hot dogs since that combination yields Joe the most satisfaction, 49 units.)*

12. Display Visual 7-2. Explain that you are going to demonstrate another way of finding this combination. Note that you have added two additional columns. The first new column shows the amount of satisfaction added by each additional cola or hot dog. For example, since two colas gives Joe 18 units of satisfaction and one only gave him 10 units, the second cola added 8 units to his satisfaction. Note that the amount of satisfaction added by each additional cola or hot dog falls. This is based on a second common assumption made by economists about people's preferences: diminishing returns. **Diminishing returns** (with respect to satisfaction) means each additional unit of a good adds less satisfaction than the one before it. In this example, it makes sense that the first hot dog would make Joe the most happy because he is hungry. The second also makes him happy, but he is probably not as hungry since he has already had one hot dog. As he continues to eat more hot dogs, he is likely getting full and so they add even less satisfaction. Point out that this means the satisfaction Joe gets from each hot dog (or cola) is <u>not</u> the same—the first ones tend to give him more satisfaction than the later ones.

13. Explain that the last column is the amount of satisfaction each good adds divided by its price. This tells you how much satisfaction Joe is getting per dollar spent on each unit. For example, if he buys the first cola he will get 10 units of satisfaction, but since the first unit costs him $2, he is getting 5 units of satisfaction per dollar spent. If he buys the first hot dog he gets 12 units of satisfaction, but since it only costs him $1, he is getting 12 units of satisfaction per dollar spent. *(Provide additional examples as necessary.)* Note that Joe is not really buying colas and hot dogs with his money, but satisfaction. Thus, it is important to know how much satisfaction he gets from each dollar he spends.

14. Ask: Suppose Joe has just sat down at the game and he wants to get the most satisfaction for his $8. Which should he buy first, a cola or a hot dog? *(The first hot dog because he gets 12 units of satisfaction per dollar spent, while the first cola would only give him 5 units.)*

15. Ask: What should he buy next? *(The second hot dog because it gives him 9 units of satisfaction per dollar while the first cola would still only give him 5 units)*

16. Ask: What should he buy next? *(The third hot dog.)*

17. Ask: What should he buy next? *(The choice is now between the fourth hot dog or the first cola. Since the first cola gives him 5 units of satisfaction per dollar and the fourth hot dog only gives him 4, he should now buy the first cola.)*

18. Ask: How much has he spent so far? *($5, three $1 hotdogs and one $2 cola.)*

19. Ask: Since he still has money to spend, what should he buy next? *(Both the fourth hot dog and the second cola give him 4 units of satisfaction per dollar, so it doesn't matter which he chooses.)*

20. Ask: Suppose he chose the second cola, what would he buy next? *(The fourth hot dog—note that it is a better deal than the third cola, 4 units per dollar versus 3 units per dollar, but also note that he doesn't have enough money left to buy the third cola.)*

21. Note that all Joe's money has now been spent and that he ended up with the same combination as found before—2 colas and 4 hot dogs. Explain that this must be the combination that gives him the most satisfaction because at each step he bought the greatest amount of satisfaction he could with his dollars.

22. Looking back at Visual 7-2, draw students' attention to the fact that the amount of satisfaction generated by colas and hot dogs were fairly similar (i.e. 5 colas generated 31 units of satisfaction while 5 hot dogs generated 33 units). So, these numbers suggest that Joe likes colas and hot dogs roughly the same. Ask: Given this, why did Joe end up buying twice as many hot dogs as colas? *(The price of colas was twice the price of hot dogs and so not as good of a deal in terms of satisfaction per dollar spent.)*

23. Explain that hot dogs were "a better deal" because he could buy the same amount of satisfaction for half as much. This is a fundamental point of making good spending decision: you should consider the <u>amount of satisfaction you get per dollar spent</u> when making a choice.

24. Have students determine Joe's best spending choice if the price of hot dogs was $2 and the price of colas was $1. *(The "satisfaction per dollar" column for hot dogs would now be 6, 4.5, 3, 2, 1, and so on, while for colas it would be 10, 8, 6, 4, 3, and 2. In this case Joe would buy the first and second colas, then a cola and a hot dog, then a hot dog, and finally another cola. He would end up buying 4 colas and 2 hot dogs—just the opposite of what he did before!)*

25. Note that Joe now appears from his buying behavior to like colas more than hot dogs. He now is buying twice as many colas as hot dogs while before he bought twice as many hot dogs as colas. This change in behavior is <u>not</u> because his preferences have changed—he still gets the same amount of happiness from each cola and each hot dog as he did before. Hot dogs have simply become a relatively worse deal as their price rises and the price of colas falls.

26. Closure. In making spending decisions with a limited budget, consumers should consider the amount of satisfaction they get from each good per dollar spent on it if they wish to maximize the satisfaction they get from their budget. In other words, instead of thinking about buying particular goods like colas or hot dogs, they should instead think about buying units of satisfaction and buy those goods which would give them the most satisfaction per dollar. Clearly, as the price of a good goes down, it becomes a better buy because one would get the same amount of satisfaction for fewer dollars.

ACTIVITY 7-1: HOW MANY COLAS AND HOT DOGS SHOULD JOE BUY?

Joe's Problem:
He wants lots of colas and hot dogs at the baseball game but only has $8 to spend...what amounts of colas and hot dogs should he buy?

The Satisfaction (or Happiness) Joe Gets from Colas and Hot Dogs:

# of Colas	Units of ☺
1	10
2	18
3	24
4	28
5	31
6	33

# of Hot Dogs	Units of ☺
1	12
2	21
3	27
4	31
5	33
6	34
7	34.8
8	35.2

The Constraints Joe Faces:
Available to spend (size of his budget) = $8
Price of each cola = P_C = $2
Price of each hot dog = P_H = $1

The Best Choice for Joe:

_____ Colas and _____ Hot dogs

VISUAL 7-1: THE AMOUNT OF SATISFACTION (HAPPPINESS) JOE GETS FROM COLAS AND HOT DOGS

# of Colas	Units of ☺
1	10
2	18
3	24
4	28
5	31
6	33

# of Hot Dogs	Units of ☺
1	12
2	21
3	27
4	31
5	33
6	34
7	34.8
8	35.2

VISUAL 7-2: THE SPENDING DECISION

#C	☺	Δ☺	Δ☺/P_C=$2
1	10	10	5
2	18	8	4
3	24	6	3
4	28	4	2
5	31	3	1.5
6	33	2	1

#H	☺	Δ☺	Δ☺/P_H=$1
1	12	12	12
2	21	9	9
3	27	6	6
4	31	4	4
5	33	2	2
6	34	1	1
7	34.8	.8	.8
8	35.2	.4	.4

B. "HEY, BIG SPENDER, SPEND A LITTLE TIME WITH ME"

Lesson Description
Students compare the spending behavior of two families to see how a higher saving rate can lead to not only greater savings, but greater spending as well.

Concepts
Saving rate

Objectives
Students will be able to calculate how different saving rates affect not only one's savings balance, but also their ability to spend in the future.

Materials
Activity 7-2: Saving Rate (one copy for each student)
Visual 7-3: The Bigs versus The Littles

Time Required
30 minutes

Procedure
1. Explain to students that the preceding lessons have shown how the amount of savings one has depends on the rate of return or interest they earn and the amount of time they allow it to compound. But there is yet another important factor: one's saving rate. Your **saving rate** is the portion of your income that you save. For example, if you make $500 per week and save $50, your savings rate is $50/$500 or 10%.

2. Divide the class in half and then form groups of three or four within each half.

3. Distribute a copy of Activity 7-2 to each student.

4. Explain that each group represents a family. The families in one half will be called "The Bigs" and the families in the other half will be called "The Littles." The Bigs are families that are "big spenders." They have a saving rate of 5%. Meanwhile, the Littles are families that spend a smaller portion of their income and have a saving rate of 20%. Have students record this information on Activity 7-2.

5. Explain that each family is to keep track of their income, spending, saving, and savings balance over several years. Every family will start with an income of $40,000 and will be able to earn 8% per year on its savings. All interest earned each year will become an addition to their income for the next year. So in the first year, the Littles have an income of $40,000, saving of $8000 (20% of $40,000), spending of $32,000 (remaining income), and a savings balance of $8000 (the amount saved). The Bigs would have an income of $40,000, saving of $2000, spending of $38,000, and a savings balance of $2000. In Year 2, the Littles will have an income of $40,640 ($40,000 plus the interest

on their savings balance, $8000 x .08 = $640), while the Bigs will have an income of $40,160 ($40,000 plus the interest on their savings balance, $2000 x .08 = $160).
6. Have the groups complete Activity 7-2 by determining the amounts of income, saving, spending, and savings balance for Years 2 through 5 (remembering that the interest earned each year on their savings balance is added to their $40,000 income. *(Visual 7.3 shows the results for selected years.)*

7. Have groups report their Year 5 results. Note that after only five years, the spending done by the Littles is only $4514 less than that of the Bigs (it started $6000 apart) and the Littles have saved over 4 times as much as the Bigs ($41,300 versus $10,080).

8. Show Visual 7-3. Explain that this shows the impact of continuing the pattern of the first five years for 35 years. Allow each group five minutes to reflect on this and write one observation.

9. Have groups report their observations. *(Some noteworthy points: (1) the Littles have saved more by the 9th year than the Bigs save by the 35th year, (2) the Littles spending becomes greater than that of the Bigs by the 16th year and is more than $6000 higher by the 27th year, and (3) in the 35th year, the Littles' income is one and a half times that of the Bigs, their spending is 20% higher, and their savings balance is five times higher.)*

10. Closure. Explain that with their higher saving rate it is obvious that the Littles end up with more saving than the Bigs, but what is even more interesting is that they end up with more spending from the 16th year on—the Littles become the Big Spenders!

ACTIVITY 7-2: SAVING RATE

FAMILY: _____

SAVING RATE: _____ %

YEAR	INCOME PLUS INTEREST	SAVING	SPENDING	SAVINGS BALANCE	INTEREST
1	$40,000				
2					
3					
4					
5					

VISUAL 7-3: THE BIGS VERSUS THE LITTLES

THE BIGS

Year	Income	Saving	Spending	Savings Balance
1	$40000	$2000	$38000	$ 2000
2	40160	2008	38152	4008
3	40321	2016	38305	6024
4	40482	2024	38458	8048
5	40644	2032	38612	10080
9	41298	2065	39233	18291
16	42468	2123	40345	32978
27	44375	2219	42156	56904
35	45815	2291	43524	74976

THE LITTLES

Year	Income	Saving	Spending	Savings Balance
1	$40000	$8000	$32000	$ 8000
2	40640	8128	32512	16128
3	41290	8258	33032	24386
4	41951	8390	33561	32776
5	42622	8524	34098	41300
9	45416	9083	36333	76784
16	50753	10151	40602	144569
27	60436	12087	48349	267538
35	68619	13724	54895	371465

MAKING PERSONAL FINANCE DECISIONS
Unit Eight: Investing

Rule 8: Grow your wealth safely.

Investing requires three simple steps: (1) save a portion of your income each year to invest in some investment option, (2) let your investments grow (avoid making any withdrawals), and (3) manage your investment risk. These lessons look at investment alternatives and criteria (using the PACED decision-making grid) and illustrate ways to manage investment risk.

A. MANAGING RISK: TIME AND DIVERSIFICATION

Lesson Description

Students are introduced to investment risk as the variability in the actual rate of return on an investment. They investigate the trade-off between the expected rate of return on an investment and risk. Finally, they play the role of investors in a simulation which shows how time and diversification can lower risk.

Concepts

Expected rate of return
Risk
Range
Risk averse
Diversification

Objectives

Students will be able to define and measure risk as it applies to investment options.
Students will be able to describe ways of reducing risk with respect to investing.

Materials

Visual 8-1: Risk and Return
Visual 8-2: The Impact of Time on Risk
Card Set A: Five cards labeled "4%," "5%," "6%," "7%," and "8%."
Card Set B: Five cards labeled "-4%," "2%," "8%," "14%," and "20%."

Time required

45 minutes

Procedure

1. Review as necessary the definition and determination of an investment's rate or return. Explain that the actual rate of return earned each year by an investment can vary year to year. For example, house and commodity prices can vary, interest rates on savings accounts and bonds can vary, stock dividends can vary, etc.

2. Define the **expected rate of return** on an investment as the weighted average of all possible rates of return where each possibility is weighted by its chance or probability of occurring. Explain that if all possible rates of return that the investment can earn are equally likely, then this is just the average of all the possible rates of return.

3. Display Visual 8-1. Explain that this shows three investment options. Option A has only one possible outcome: a rate of return of 6%. Option B has three possible outcomes that are each equally likely to occur: rates of return of 5%, 6%, and 7%. Finally, Option C has five possible outcomes that again are equally likely to occur: rates of return of minus 4% (negative rate of return), 1%, 6%, 11%, and 16%. The expected rate of return on each of these options is the same: 6%. For example, for Option B, the average of the three possibilities is (5% + 6% + 7%)/3 = 18%/3 = 6%.

4. Ask: Since each of these options has the same expected rate of return, would an investor be just as happy with any of them? *(If an investor wants a 6% rate of return, it is possible with Options B and C that they end up with less than that, in fact, with Option C it is possible that they even lose money. Lead students towards the notion that Options B and C are riskier than Option A in that they may get less than a 6% rate of return.)*

5. Define the **risk** of an investment as the amount that an investment's actual rate of return can vary from its expected rate of return. Continue: The greater this variation, the greater the risk. One simple measure of this variation is the range (or spread) of the possible outcomes. The **range** is the difference between the largest possible value and the smallest possible value. For example, for Option B, the range would be 2% (7%-5%).

6. Ask: What is the range for Options A and C? *(For Option A it is zero, while for Option C it is 20%.)* Note that Option A has no risk or variation as a range value of zero would indicate. The investor is certain to earn a rate of return of 6%. However, with Option C the investor could earn as much as 16%, but could also lose as much as 4%. Thus, Option C is more risky (has a larger range) than Options A or B.

7. Ask each student to choose the option on Visual 8-1 they would most prefer. Get a tally with a show of hands. *(Answers will vary, however, students often select the more risky options because they tend to be greater risk-takers than the general population and because they realize it is a hypothetical situation so they will not actually suffer any losses.)* Explain that since these options all have the same expected return, but different amounts of risk, the option that would be chosen depends on how the investor feels about risk. Generally, investors tend to be **risk averse** which means they would rather avoid or lower the risks they take. Thus, most investors would choose Option A or B.

8. Ask: Since risk-averse investors would view risk as a negative aspect of an investment, what positive aspect of an investment could possibly offset this cost and make a risky investment more attractive for them to choose? *(A higher expected rate of return.)*

9. Explain that there is often a trade-off between risk and rate of return. Investments with greater risks usually earn higher expected rates of return. For example, as the risk a company will default on its bonds rises, it must pay higher rates on interest on its bonds to induce investors to buy them. On the other hand, U.S. Treasury and savings bonds tend to have lower interest rates because the federal government has never defaulted on any of its obligations. So, one way to reduce risk is to choose investments with smaller ranges, but it is important to realize that the cost of doing this is likely a lower expected rate of return.

10. Tell the class that there are two additional ways to reduce risk.

11. Display Visual 8-2. Explain that this shows two investment options. Option A has five possible outcomes each year: 4%, 5%, 6%, 7%, or 8%. Option B also has five possible outcomes each year: -4%, 2%, 8%, 14%, and 20%.

12. Ask: Which option has the greater expected rate of return? *(Since each outcome is equally likely, the expected rate of return for both options is determined by averaging the five rates. For Option A: (4% + 5% + 6% + 7% + 8%)/5 = 30%/5 = 6%, while for Option B: (-4% + 2% + 8% + 14% + 20%)/5 = 40%/5 = 8%. So, the expected rate of return for Option B is greater.)*

13. Ask: Which option is riskier? *(The range for Option 1 is 4%, a low of 4% to a high of 8%, while the range for Option B is 24%, a low of -4% to a high of 20%. Using range as a measure of risk, Option B is riskier because it has the greater range.)*

14. Divide the class in half and then divide each half into groups of two or more.

15. Explain that the groups in one half will invest in Option A, while the groups in the second half will invest in Option B. There will be several rounds. Each round represents one year. During the round each group will draw a card from a set of five cards that have the five possible outcomes for their option written on them. That will be the rate of return the group earns that year. These will be recorded on the board, as well as, a running average of the rate of return over the rounds (years).

16. Begin Round 1 by having each Option A group draw a card from Card Set A and each Option B group draw a card from Card Set B. Record results on the board.

17. Repeat Round 1. Record results on the board and also record the average for each group after two rounds. For example, if a group from Option A drew 5% in Round 1 and 8% in Round 2, their average after two rounds would be (5% + 8%)/2 = 6.5%.

18. Continue for 3-6 more rounds as time permits--the more rounds, the better the results of the simulation.

19. Upon ending the rounds, have students look at the average rate of returns recorded on the board and draw some conclusions. *(Two results should be evident: (1) for both*

options the average rate of return for all groups should be approaching or getting closer to the expected rate of return for that option and (2) while the average rate of return for groups playing Option B likely varied widely in the early rounds, they varied much less from each other towards the end as they all approached 8%.)

20. Explain that the point of the demonstration is to show how time reduces the variability of the actual rate of return from the expected rate of return. This reduction of variability is a reduction of risk. So, while in any one year the variability or risk may be great, if you hold an investment for a long time, it will be much smaller. This is why financial planners advise young investors to earn higher rates of return by investing in more risky investments—they have more time for the rate of return over time to approach the expected rate of return. Conversely, if one has a short investment horizon (i.e. you need the money sooner rather than later), such investments are probably too risky.

(Steps 21-23 are Optional)
21. Explain that as the demonstration showed, time tends to lower the difference between the actual rate of return and the expected rate of return. Technically, it lowers the spread by a factor of $1/\sqrt{n}$, where n is the number of years. Thus, for Option B, after 4 years (or rounds) the spread would only be $1/\sqrt{4} = ½$ of what it was for one year. That would be only 12% (24% x ½).

22. Ask: What would be the spread after 9 years? After 36 years? *(Since $1/\sqrt{9} = 1/3$, the spread would be 24% x 1/3 = 8% after nine years. Since $1/\sqrt{36} = 1/6$, the spread would be 24% x 1/6 = 4% after 36 years.)*

23. Note that this is exactly the same spread as Option A has in one year. Thus, holding on to investment B for 36 years has the same risk as holding investment A for one year, BUT it will have earned a higher rate of return for all those 36 years!

24. Continue: Suppose an investor only had one year to invest, but wanted the higher rates of return that are possible from Option B, but not all the risk. One final way the investor can reduce risk and yet still take advantage of investment options with higher rates of return is to diversify. Define **diversification** as spreading out one's investment funds over several investment options. In other words, instead of investing totally in Option A or Option B, the investor invests part of his funds in each.

25. Have students refer to Visual 8-2 and pose the following: If an investor invested half of her funds in Option A and half in Option B, what would be the range of possible rates of return in one year? *(If students are having trouble, tell them to imagine the worst case scenario for each case, 4% for Option A and -4% for Option B, and the best case, 8% for Option A and 20% for Option B. Next imagine that the investor invested $50 in each Option. In the worse case the return would ($50 x 4%) + ($50 x -4%) = $2 - $2 = $0 so that the rate of return would be $0/100 or 0%. In the best case the return would be ($50 x 8%) + ($50 x 20%) = $4 + $10 = $14 so that the rate of return would be $14/$100 or 14%. Thus, the range would 14% (14% - 0%).)*

26. Note that this range is less than the range of investing in Option B alone which was 20%. Thus, by diversifying the investor is able to lower the risk taken. It could be lowered further by putting more than half of the funds in Option A. So, an investor can control his/her risk by diversifying. However, note that by diversifying, it is not possible to get a rate of return higher than 14% (which was possible with Option B).

27. Closure. Risk is basically the degree to which the actual rate of return on an investment can vary from the expected rate of return on the investment. There are three ways an investor can lower the amount of risk on their investments: (1) choose investments with small ranges, (2) hold investments for longer periods of time, or (3) diversify by holding several different investments. Each of these, however, also comes with a cost. For (1) and (3) it is likely a lower rate of return, while for (2) it is not being able to access your investment funds in the short run. Investors have to weigh the benefits of less risk against these costs.

VISUAL 8-1: RISK AND RETURN

Option A: 1 Possible Outcome: 6%

Expected Rate of Return = 6%

Option B: 3 Possible Outcomes:
5%, 6%, and 7%
(all equally likely to occur)

Expected Rate of Return = 6%
(average of the rates above)

Option C: 5 Possible Outcomes:
-4%, 1%, 6%, 11%, and 16%
(all equally likely to occur)

Expected Rate of Return = 6%
(average of the rates above)

VISUAL 8-2: THE IMPACT OF TIME ON RISK

<u>Option A</u>: 5 Possible Outcomes:
4%, 5%, 6%, 7%, and 8%
(all equally likely to occur)

Expected Rate of Return = ?

Range (Risk) = ?

<u>Option B</u>: 5 Possible Outcomes:
-4%, 2%, 8%, 14%, and 20%
(all equally likely to occur)

Expected Rate of Return = ?

Range (Risk) = ?

B. EVALUATING INVESTMENT OPTIONS

Lesson Description
Students use the PACED decision-making process and grid to investigate the trade-offs involved in choosing an investment option.

Concepts
Rate of Return
Risk
Liquidity
Costs (related to investment options)
PACED Decision-making Grid

Objectives
Students will be able to identify and describe criteria that would be important in making investment choices.
Students will be able to apply the PACED decision-making process and grid to make investment choices.

Materials
Activity 8-1: Evaluation of an Investment Alternative (one copy for each student)
Visual 8-3: PACED Decision-making Grid for Choosing Investments
Visual 8-4: Evaluation of Investment Alternatives

Time Required
Over several class periods

Procedure
1. Review the PACED decision-making process as necessary (see Part B of Unit 1). Remind students of the five basic steps: (1) Define the problem, (2) List the alternatives, (3) Determine the criteria, (4) Evaluate the alternatives, and (5) Make the decision.

2. Ask: Once people have saved part of their income, what is the next question or problem that they will likely need to address? *(How should I invest my savings or, in other words, what investment option should I choose?)* So, this will be the problem, or Step 1 of the process.

3. Ask: What is Step 2? *(List the alternatives.)*

4. Ask: What are the alternatives here? *(List alternatives on the board--see alternatives listed on Visual 8-3. Briefly describe each alternative as is needed, however, students will be asked to research these more fully below.)*

5. Remind students that the third step is to determine the criteria. Basically, these are factors that could be used to rank one alternative as being "better" than another. Ask: What criteria do you believe are important to people when they are choosing an

investment option? *(List the criteria on the board--answers will vary, but expected rate of return and amount of risk are likely responses.)*

6. Discuss each of the following criteria:
Rate of Return (ROR): The expected percentage increase in the value of the investment each year (see a full definition and explanation of this concept in Unit Two).
Risk: The amount the actual rate of return may vary from the expected rate of return (see a full definition and explanation of this concept in Part A of this Unit).
Liquidity: The ease of turning the investment into cash (i.e. how easy is it to liquidate the investment). For example, a savings account balance can easily be transferred to a checking account and used as cash, but a house may take some time to find a buyer and get the paperwork completed to close the deal and get a check from the buyer.
Costs: These are charges, fees, or other inconveniences associated with buying, selling, or holding the investment. For example, account maintenance fees, broker charges for buying and selling stocks, closing costs for buying or selling a house, minimum balance requirements, mutual fund management fees, etc.

7. Display Visual 8-3. Explain that this shows the **PACED decision-making grid** with the alternatives listed down the left side and the criteria listed along the top line. Remind the class that they are now at Step 4 of the process--evaluating the alternatives. Each of the cells of this grid is to be filled in with an evaluation of how well each alternative meets each criterion.

8. Form 15 groups of students and assign each of them one of the 15 alternatives listed on Visual 8-3 (if the students came up with additional alternatives, these could also be included).

9. Assign each group the following task: They are to evaluate their alternative with respect to each of the four criteria given on Visual 8-3 (rate of return, risk, liquidity, and costs).

10. Distribute Activity 8-1. Explain that to help make their results comparable, they are to use the evaluation measures described on the activity sheet.

11. Give groups the necessary time to do the research to complete Activity 8-1 (one day should be sufficient).

12. Have groups report their results and rationale, discuss any differences, and fill in the cells on Visual 8-3. *(A sample evaluation is given in Visual 8-4. These evaluations are dated and subjective, so it is not expected students will have the exact numbers shown. What is important is that they provide a reasonable rationale for their evaluation.)*

13. Point out that the class is now at Step 5 in the process--making a decision. Ask: Given the information shown on Visual 8-4, which is the "right" alternative to choose? *(Students should recognize that the "right" choice depends on which of the criteria are most important to the person choosing. For example, if the person really is*

uncomfortable with risk, they would not want to choose any of the alternatives with high risk. On the other hand, a person interested only in getting a high rate of return would likely choose one of the more risky alternatives.)

14. Ask: Why might an investor wish to choose more than one investment alternative? *(The investor may have multiple needs: high liquidity to meet short-term goals, high rate of return to meet long-term goals, lower risk through diversification.)*

15. Closure. Explain that most financial planners will ask their clients questions about how they feel about these various criteria in order to help them select the investment alternatives that best suits their desires and needs. They are really just applying the same PACED decision-making process used in this exercise.

ACTIVITY 8-1: EVALUATION OF AN INVESTMENT ALTERNATIVE

INVESTMENT ALTERNATIVE: _____

CRITERIA:

_____ **Rate of return (ROR):** Find the current rate or expected range of rates for your investment alternative.

_____ **Risk:** Rate this on a scale from 1 (virtually no risk) to 5 (high degree of risk). Keep in mind that risk can come from many sources: market fluctuations which affect the market value of the investment, having funds that are not insured, bankruptcy of companies, default by borrowers, inflation, theft, fraud, etc.

_____ **Liquidity:** Rate this on a scale from 1 (low degree of liquidity--very difficult to convert into cash) to 5 (high degree of liquidity--very easy to convert into cash). Consider how difficult, costly, or time-consuming it would be to sell the alternative and get your money back.

_____ **Costs:** Rate this on a scale from 1 (no or very low costs) to 5 (high costs). Consider all fees, charges, or other inconveniences associated with buying, selling, or holding the investment (such as maintenance fees, broker charges, transactions fees, minimum balance requirements, etc.).

VISUAL 8-3: PACED DECISION-MAKING GRID FOR CHOOSING INVESTMENTS

INVESTMENT ALTERNATIVES	CRITERIA			
	ROR	RISK	LIQUIDITY	COSTS
Cash				
Checking Accounts				
Savings Accounts				
Money Market Deposit Accounts				
Certificates of Deposit				
U.S. Savings Bonds				
Money Market Mutual Funds				
U.S. Treasury Bonds				
Corporate Bonds				
Income Stocks				
Growth Stocks				
Real Estate				
Commodities				
Collectibles				
Mutual Funds				

VISUAL 8-4: EVALUATION OF INVESTMENT ALTERNATIVES

INVESTMENT ALTERNATIVES	CRITERIA* ROR**		RISK		LIQUIDITY	COSTS
Cash	1	0%	2	Theft/Inflation	5	1	None
Checking Accounts	1	0-0.25%	1	Insured/Inflation	5	1	Fees
Savings Accounts	2	0.25-1%	1	Insured/Inflation	4	1	Maintain fees
Money Mkt. Deposit Accounts	2	2.5-3.5%	1	Insured/Inflation	4	2	Min Bal Reqt
Certificates of Deposit	3	4-5%	1	Insured	3	2	Trans/Access
U.S. Savings Bonds	3	3.4%	1	Govt. guaranteed	3	2	Trans/Access
Money Market Mutual Funds	3	4.5-5%	2	Not insured	3	2	Trans/Fees
U.S. Treasury Notes/Bonds	3	5%	1	Govt. guaranteed	3	3	Trans/Access
Corporate Bonds	3-4	6-10%	2-4	Company rating	3	3	Broker/Trans
Income Stocks	4	9-11%	3-4	Co. rating/Market	3	3	Broker/Trans
Growth Stocks	4-5	12-15%	4-5	Co. rating/Market	3	3	Broker/Trans
Real Estate	4-5	?	3-4	Market	2	4	Agent/Trans
Commodities	4	?	4-5	Market	3	3	Broker/Trans
Collectibles	1-5	?	4-5	Market	1	4	Trans
Mutual Funds	2-4	Depends	2-4	Mix dependent	3	3-5	Mgmt fees

***1 = Very Low, 2 = Low, 3 = Medium, 4 = High, 5 = Very High**
****As of June 2007**

MAKING PERSONAL FINANCE DECISIONS
Unit 9: Borrowing

Rule 9: Pay on time and in full.

While there are benefits and costs associated with borrowing, more often than not, it is an indication that something has gone wrong in one's financial planning (spending too much and/or saving too little relative to one's income). These lessons look at the borrowing decision from both sides, the lender and the borrower, and discuss why it is wise to minimize and manage one's use of credit.

A. THE THREE C'S OF CREDIT

Lesson Description

Students play the role of credit providers in assessing the credit worthiness of an individual with randomly-created characteristics and a loan request. They classify individual characteristics based on the three C's of credit (capacity, character, and collateral), assess the riskiness of lending to this individual in each of these categories, and then decide whether or not to approve or deny the loan request.

Concepts

"Three C's of Credit":
- Capacity
- Character
- Collateral

Objectives

Students will be able to describe the "Three C's of Credit" (capacity, character, and collateral) and factors used to measure or assess them.

Students will be able to evaluate the riskiness of lending to an individual in each of the three categories (capacity, character, and collateral).

Students will be able to weigh the benefits and costs of approving a loan and make a decision to approve or deny the loan.

Materials

13 standard envelopes
Activity 9-1 through Activity 9-12 (one copy each)
Activity 9-13: Loan Requests (two copies)
Activity 9-14: Approve or Deny Credit? (one copy for each student)
Visual 9-1: The Three C's of Credit

Time Required

45 minutes

Procedure

Preparation:

a. Make one copy of Activities 9-1 through 9-12 and cut into cards (keeping the cards from each Activity separate).

b. Place the ten cards from each Activity into a separate standard envelope so that there are 12 envelopes each representing various levels of some "individual characteristic."

c. Set up envelope stations around the room depending on the number of students on each team (see Step 9 below).

d. Make two copies of Activity 9-13 and cut each of the copies into strips.

e. Place all these strips into an envelope labeled "Loan Requests" which the teacher keeps.

1. Explain to the class that they will be playing the role of credit providers and more specifically they will be deciding to approve or deny an individual's loan request.

2. Ask for an example of a credit or loan provider. *(Bank, credit union, car dealer, credit-card company, department store, etc.)*

3. Ask for examples of things an individual might wish to get a loan to purchase. *(A house, a car, education tuition and fees, medical expenses, new electronics, etc.)*

4. Explain that credit providers (or lenders) expect that all the money they lend to anyone will be fully repaid (plus interest). Thus, in deciding to lend to an individual they would want to know how likely it is that the individual will repay the loan. Ask: What information about an individual would you like to know before lending them money? *(Answers will vary, but should include factors such as those listed on Visual 9-1.)*

5. Display Visual 9-1. Explain that this shows the three questions lenders are generally interested in asking before granting someone a loan: (1) What is the individual's <u>ability</u> to repay the loan? (2) What is the individual's <u>reliability</u> to repay the loan? and (3) What <u>assets</u> does the individual own that could be sold to repay the loan? As shown on the visual, these questions are often summarized as the "Three C's of Credit": Capacity, Character, and Collateral.

6. Discuss the factors listed which might be helpful in determining the answer to each of the three questions. Explain that each of these factors may be very different for different individuals. Each factor attempts to provide a measure to help answer each question. For example, FICO (or credit) scores generally range from 350 to 850, with 350 indicating low reliability and 850 indicating high reliability. Similarly, an individual whose current debt payments are a large percent of their monthly income would have less ability to take on more debt payments than someone whose debt payments are a small percent of their income. Discuss the impact of other characteristics as is necessary. *(Note that for each factor or "individual characteristic" there is a range of possibilities. See Step 13 for more information.)*

7. Tell the class that they will now use this background to make some lending decisions.

8. Divide the class into 10 teams as evenly as possible (it is not necessary that teams be of equal size).

9. Have each team randomly select a card from one of the 12 "individual characteristic" envelopes. *(Note: Having multiple stations around the room helps speed up this step and reduces classroom congestion. For example, with a class of 30 there would be three students on each team. In this case it is helpful to set up three stations with four envelopes at each one and have each member of each team go to one of these stations to select cards. So, each member of a team would be selecting four cards at a station and then returning to their seats.)*

10. After all teams have selected their 12 "individual characteristic" cards, have one member of each team come to the front of the room and randomly select a card from the "Loan Requests" envelope held by the teacher.

11. Have each team spread out all the cards they have collected.

12. Distribute a copy of Activity 9-14 to each student.

13. Tell each team to complete Part 1 and 2 of Activity 9-14. *(The "Capacity" characteristics are Annual Household Income, Years Working for Current Employer, Education, and Monthly Debt Payments as a % of Monthly Income or Activities 9-1 through 9-4. The "Character" characteristics are FICO Score, Years Living at Current Address, Criminal Record, and Length of Credit History or Activities 9-5 through 9-8. The "Collateral" characteristics are Short-term Financial Assets, Long-term Financial Assets, Equity in Home, and Market Value of Other Real Assets or Activities 9-9 through 9-12.)*

14. Tell each member of each team to individually complete Part 3 of Activity 9-14. After a few minutes have the members of each team compare their answers, discuss any differences, and come to an agreement on the rating given for each of the three C's. *(Note that each individual characteristic given in Activities 9-1 through 9-12 has five levels of risk that decrease as one moves down the list in the original, uncut Activity pages. The first entry is "high risk," the second is "high-medium risk," the third is "medium risk," the fourth is "medium-low risk," and the fifth is "low risk." To get an overall rating for each "C," students should be thinking about how they would rate each of the four individual characteristics that make up the information they have about that "C" and how important they believe each characteristic is relative to the others in that category.)*

15. Have each team discuss and complete Part 4. *(It is likely that all three C's are not "low risk" or "high risk" which would make the decision fairly easy. Instead, teams will be faced with a mix of risk levels and will have to weigh lower risk factors against higher risk factors. They should also consider the size and nature of the loan…lending someone*

$2000 is very different than lending them $150,000. Finally, should a team ask for more information about the individual such as their age, character references, past loans, etc. explain that while this might very well be useful to know, getting complete information about anyone is not possible so they have to work with the information they have.)

16. Select teams to report on the situation they had and the decision they made and why.

17. Closure. Ask students what they have learned that would be useful from the perspective of them as borrowers. *(They should recognize that they are in control of their own "individual characteristics" and that it will be easier for them to get credit if they work to keep their characteristics at lower risk levels.)*

VISUAL 9-1: THE THREE C's OF CREDIT

The Three C's of Credit

CAPACITY

What is the individual's ability to repay the loan?

Factors include: Amount and sources of income, steadiness of income (e.g. years with same employer, stable dividend income), amount of monthly living expenses (including any debt, alimony, or child-support payments), number of dependents, and level of education and training.

CHARACTER

What is the individual's reliability to repay the loan?

Factors include: FICO score (which looks at whether an individual pays their bills on time, their length of time using credit, their credit balances as a percent of their credit limits and other measures), years living at same address, criminal record, and quality of character references.

COLLATERAL

What assets does the individual own that could be sold to repay the loan?

Factors include: Amount of financial assets (such as a savings account balance, stock and bond holdings, and a 401k account balance) and market value of real assets (such as land, a house, a car, a boat, electronics, jewelry, antiques, precious metals, and other personal property).

ACTIVITY 9-1: ANNUAL HOUSEHOLD INCOME CARDS

Annual Household Income: **Wages/salary: $10,000** **Other: $0**	**Annual Household Income:** **Wages/salary: $10,000** **Other: $0**
Annual Household Income: **Wages/salary: $25,000** **Other: $100 interest**	**Annual Household Income:** **Wages/salary: $25,000** **Other: $100 interest**
Annual Household Income: **Wages/salary: $50,000** **Other: $3000 rental income**	**Annual Household Income:** **Wages/salary: $50,000** **Other: $3000 rental income**
Annual Household Income: **Wages/salary: $75,000** **Other: $6000 alimony**	**Annual Household Income:** **Wages/salary: $75,000** **Other: $6000 alimony**
Annual Household Income: **Wages/salary: $125,000** **Other: $20,000 dividends**	**Annual Household Income:** **Wages/salary: $125,000** **Other: $20,000 dividends**

ACTIVITY 9-2: YEARS WORKING FOR CURRENT EMPLOYER CARDS

Years Working for Current Employer: **0.5 years (six months)**	**Years Working for Current Employer:** **0.5 years (six months)**
Years Working for Current Employer: **2 years**	**Years Working for Current Employer:** **2 years**
Years Working for Current Employer: **4 years**	**Years Working for Current Employer:** **4 years**
Years Working for Current Employer: **8 years**	**Years Working for Current Employer:** **8 years**
Years Working for Current Employer: **15 years**	**Years Working for Current Employer:** **15 years**

ACTIVITY 9-3: EDUCATION CARDS

Education: **No high school diploma**	**Education:** **No high school diploma**
Education: **High school graduate**	**Education:** **High school graduate**
Education: **Some college or vocational training**	**Education:** **Some college or vocational training**
Education: **College graduate or occupation licensure**	**Education:** **College graduate or occupation licensure**
Education: **Professional degree (MBA, PHD, CPA, MD, etc.)**	**Education:** **Professional degree (MBA, PHD, CPA, MD, etc.)**

ACTIVITY 9-4: MONTHLY DEBT PAYMENT CARDS

Monthly Debt Payments (as a % of Monthly Income): **70%**	**Monthly Debt Payments (as a % of Monthly Income):** **70%**
Monthly Debt Payments (as a % of Monthly Income): **50%**	**Monthly Debt Payments (as a % of Monthly Income):** **50%**
Monthly Debt Payments (as a % of Monthly Income): **30%**	**Monthly Debt Payments (as a % of Monthly Income):** **30%**
Monthly Debt Payments (as a % of Monthly Income): **20%**	**Monthly Debt Payments (as a % of Monthly Income):** **20%**
Monthly Debt Payments (as a % of Monthly Income): **0%**	**Monthly Debt Payments (as a % of Monthly Income):** **0%**

ACTIVITY 9-5: FICO SCORE CARDS

FICO Score: **450**	**FICO Score:** **450**
FICO Score: **550**	**FICO Score:** **550**
FICO Score: **650**	**FICO Score:** **650**
FICO Score: **750**	**FICO Score:** **750**
FICO Score: **800**	**FICO Score:** **800**

ACTIVITY 9-6: YEARS LIVING AT CURRENT ADDRESS CARDS

Years Living at Current Address: **0.5 years (six months)**	**Years Living at Current Address:** **0.5 years (six months)**
Years Living at Current Address: **2 years**	**Years Living at Current Address:** **2 years**
Years Living at Current Address: **4 years**	**Years Living at Current Address:** **4 years**
Years Living at Current Address: **8 years**	**Years Living at Current Address:** **8 years**
Years Living at Current Address: **15 years**	**Years Living at Current Address:** **15 years**

ACTIVITY 9-7: CRIMINAL RECORD CARDS

Criminal Record: **One felony**	**Criminal Record:** **One felony**
Criminal Record: **One major misdemeanor**	**Criminal Record:** **One major misdemeanor**
Criminal Record: **Two minor misdemeanors**	**Criminal Record:** **Two minor misdemeanors**
Criminal Record: **One minor traffic violation**	**Criminal Record:** **One minor traffic violation**
Criminal Record: **None**	**Criminal Record:** **None**

ACTIVITY 9-8: LENGTH OF CREDIT HISTORY CARDS

Length of Credit History: **No credit history**	**Length of Credit History:** **No credit history**
Length of Credit History: **1 year using a store credit card**	**Length of Credit History:** **1 year using a store credit card**
Length of Credit History: **3 years using a major credit card**	**Length of Credit History:** **3 years using a major credit card**
Length of Credit History: **6 years using a major credit card and paying a car loan**	**Length of Credit History:** **6 years using a major credit card and paying a car loan**
Length of Credit History: **12 years using a major credit card and paying a mortgage**	**Length of Credit History:** **12 years using a major credit card and paying a mortgage**

ACTIVITY 9-9: SHORT-TERM FINANCIAL ASSETS CARDS

Short-term Financial Assets: **$0**	**Short-term Financial Assets:** **$0**
Short-term Financial Assets: **$250 in checking account**	**Short-term Financial Assets:** **$250 in checking account**
Short-term Financial Assets: **$1000 in savings account**	**Short-term Financial Assets:** **$1000 in savings account**
Short-term Financial Assets: **$5000 in money-market deposit account**	**Short-term Financial Assets:** **$5000 in money-market deposit account**
Short-term Financial Assets: **$10,000 in one-year certificate of deposit**	**Short-term Financial Assets:** **$10,000 in one-year certificate of deposit**

ACTIVITY 9-10: LONG-TERM FINANCIAL ASSETS CARDS

Long-term Financial Assets: **$0**	**Long-term Financial Assets:** **$0**
Long-term Financial Assets: **$5000 in savings account**	**Long-term Financial Assets:** **$5000 in savings account**
Long-term Financial Assets: **$10,000 in U.S. Treasury Bonds**	**Long-term Financial Assets:** **$10,000 in U.S. Treasury Bonds**
Long-term Financial Assets: **$50,000 in IRA account**	**Long-term Financial Assets:** **$50,000 in IRA account**
Long-term Financial Assets: **$150,000 in 401k account**	**Long-term Financial Assets:** **$150,000 in 401k account**

ACTIVITY 9-11: EQUITY IN HOME CARDS

Equity in Home: **-$20,000** **(mortgage balance > value in home)**	**Equity in Home:** **-$20,000** **(mortgage balance > value in home)**
Equity in Home: **None (renter)**	**Equity in Home:** **None (renter)**
Equity in Home: **$20,000**	**Equity in Home:** **$20,000**
Equity in Home: **$50,000**	**Equity in Home:** **$50,000**
Equity in Home: **$100,000**	**Equity in Home:** **$100,000**

ACTIVITY 9-12: MARKET VALUE OF OTHER REAL ASSETS CARDS

Market Value of Other Real Assets: **$500** **(old furniture and appliances)**	**Market Value of Other Real Assets:** **$500** **(old furniture and appliances)**
Market Value of Other Real Assets: **$4000** **(old car)**	**Market Value of Other Real Assets:** **$4000** **(old car)**
Market Value of Other Real Assets: **$10,000** **(car, electronics)**	**Market Value of Other Real Assets:** **$10,000** **(car, electronics)**
Market Value of Other Real Assets: **$25,000** **(car, boat, jewelry)**	**Market Value of Other Real Assets:** **$25,000** **(car, boat, jewelry)**
Market Value of Other Real Assets: **$50,000** **(car, gold coins, 10 acres of**	**Market Value of Other Real Assets:** **$50,000** **(car, gold coins, 10 acres of**

ACTIVITY 9-13: LOAN REQUEST CARDS

Loan Request:
$2000 for a laptop computer

Loan Request:
$6000 for a Caribbean vacation

Loan Request:
$10,000 credit limit on a new credit card

Loan Request:
$15,000 for one-year tuition at a college

Loan Request:
$25,000 for a newer model car

Loan Request:
$50,000 for medical expenses

Loan Request:
$100,000 to start up a new business

Loan Request:
$150,000 for a house

ACTIVITY 9-14: APPROVE OR DENY CREDIT?

1. Record the loan request: _____

2. Record the information from each "individual characteristic" card in the appropriate category below (Hint: There should be <u>four</u> items in each.)

   Capacity: _____
   _____
   _____
   _____

   Character: _____
   _____
   _____
   _____

   Collateral: _____
   _____
   _____
   _____

3. Given an individual with the characteristics above, evaluate how likely it is that this person will repay the loan in each of the three categories. Give a rating of "high risk," "medium risk," or "low risk."

   Capacity: _____
   Character: _____
   Collateral: _____

4. What factors support <u>approving</u> this individual's loan request?

   What factors support <u>denying</u> this individual's loan request?

   Would you approve or deny this individual's loan request?
   Approve / Deny (circle one) Explain your decision.

B. EVALUATING THE BENEFITS AND COSTS OF CREDIT

Lesson Description
Students are introduced to different types of credit and then discuss some of the benefits and costs of credit. They then consider the impact of borrowing on a person's net worth.

Concepts
Borrow
Interest
Credit
Net Worth

Objectives
Students will be able to describe various types of loans or credit.
Students will be able to describe some of the benefits and costs of credit
Students will be able to determine how credit decisions are likely to impact their net worth over time.

Materials
Activity 9-15: Are These Goods Worth Buying With Credit? (one copy for each student)
Visual 9-2: Types of Credit (one copy for each student)
Visual 9-3: Are These Goods Worth Buying With Credit?

Time
45 minutes

Procedure
1. Ask: If you borrow a video game from a friend, what does that mean? *(Your friend will let you use it for a certain period of time, but at some point you are expected to return it to your friend.)*

2. Explain that when you borrow money the same thing is true except that the process is typically more formal and costly. When you ***borrow*** money someone gives you money and in exchange you give them a written promise or an "IOU" to give back the money at a later date plus you usually also must pay interest. ***Interest*** is an additional payment of money for the right to use someone else's money. You have ***credit*** when some institution has pre-approved an amount that you can borrow from them. For example, a credit card company may extend you a credit of up to $1000 on your card. This means you can use the card to borrow up to $1000 from them at any given time.

3. Display Visual 9-2. Explain that there are many forms of credit. Discuss Visual 9-2 as necessary noting that loans are a type of credit.

4. Ask: What are some benefits of borrowing money (or using credit)? *(Answers will vary but would include the following: getting goods and services now instead of later,*

paying for emergency expenses, enjoying payment convenience, getting in on a deal that may not be available later, acquiring assets that will increase net worth over time, build a credit record/history, it is less costly than using invested funds, etc.)

5. Ask: What are some costs of borrowing money (or using credit)? *(Answers will vary but would include the following: paying finance charges (interest plus any fees), creating a debt which lowers one's net worth, getting fewer goods and services in the future, having less available credit to use in case of an emergency, having greater exposure to identity theft, etc.)*

6. Explain that in deciding whether to use credit, all these benefits and costs should be considered, but that the remainder of the lesson will focus on the impact of credit on a person's net worth which may not be as obvious as some of the other benefits and costs.

7. Remind students that a person's ***net worth*** is defined as the value of their assets (the value of the things they "own") minus the value of their liabilities or debts (the value of the things they "owe"). *(See Unit Two: Planning and Tracking.)*

8. Have students give some examples of assets. *(House, car, gold coins, computer, jewelry, television, savings accounts, stocks, bonds, cash, etc.)*

9. Have students give some examples of liabilities or debt. *(Home mortgage, car loan, student loan, unpaid credit card balance, unpaid taxes, etc.)*

10. Typically, people wish to grow their net worth, or wealth, over time as this increases their financial security. One way to assess the desirability of borrowing or getting a loan (or credit) is thus to ask what impact is this likely to have on one's net worth over time. Taking out a loan adds immediately to one's debt or liabilities. This clearly has a negative impact on net worth. The question then is whether or not the loan leads to increases in the value of assets over time that are enough to offset this initial increase in liabilities plus any future finance costs.

11. Distribute Activity 9-15. Have students working individually or in groups discuss and determine the immediate effect on the person's assets from making each purchase and the likely effect on their assets over time. Have students report their answers as time permits.

12. Display Visual 9-3 and have students check their answers. Explain each item as is necessary.

(House: A house is an asset and the market value of houses has historically risen over time, however it can also fall.

Vacation: Buying and going on a vacation does not create an asset now or in the future, while paying off the loan in the future will decrease assets.

Education: Education is not a financial asset, but because education builds a person's human capital, it is likely to lead to higher future income and a better ability to acquire assets in the future.

Car: A car is an asset, but the market value of a car tends to fall (depreciate) very quickly, however, to the extent that a car enables one to earn income (get to work), it could lead to a better ability to acquire assets in the future.

Furniture: Furniture is an asset, however its market value tends to fall over time.

Pizza: Buying and eating a pizza does not create an asset now or in the future, while paying off the credit card balance in the future will decrease assets.

Shares of Stock: Stocks are an asset and the market value of stocks has historically risen over time, but they can also fall.

Electronic Game System: This is an asset, but the market value of such systems tends to decline very quickly over time.

Cable TV Service: Buying and using cable TV service does not create an asset now or in the future, while paying off the credit card balance in the future will decrease assets.)

13. Ask: Which of the purchases on Visual 9-3 look like reasonable uses of credit from the perspective of the future impact on assets? *(A house and education are probably the best deals in that there is likely a positive long-term impact on the value of one's assets and net worth. A case could also be made for assets that are likely to rise in value over time such as stocks, as long as the rate of return on such assets is likely to be greater than the interest rate paid to borrow the funds. A car is the special case where a depreciating asset may also be worth buying with credit. All other purchases would not impact the value of one's assets or would actually reduce it over time meaning that they would lead to decreases in one's net worth.)*

14. Closure. Note that, except for education, any purchase with credit which is not for asset (such as a vacation, pizza, and cable TV service in this exercise) would increase a person's liabilities while not adding to their assets and thus, would lower their net worth. Similarly, except perhaps for a car, any purchase with credit which is for an asset whose value tends to fall or depreciate quickly over time (such as, furniture or an electronic game system in this exercise) would also likely lower a person's net worth over time (as the loan balance would likely exceed the value of the asset). Thus, unless there are other benefits to offset this cost, making these purchases with credit may not be in a person's best interest.

ACTIVITY 9-15: ARE THESE GOODS WORTH BUYING WITH CREDIT?

Directions: Determine the likely impact on a person's assets from each purchase (both immediately and over time). Write "+" for increase, "-" for decrease, and "0" for no effect.

Item Purchased	Type of Credit	Impact on Assets Immediate	Impact on Assets Over Time
HOUSE	MORTGAGE	_____	_____
VACATION	PERSONAL LOAN	_____	_____
EDUCATION	STUDENT LOAN	_____	_____
CAR	AUTO LOAN	_____	_____
FURNITURE	CREDIT CARD	_____	_____
PIZZA	CREDIT CARD	_____	_____
SHARES OF STOCK	BROKERAGE LOAN	_____	_____
ELECTRONIC GAME SYSTEM	PERSONAL LOAN	_____	_____
CABLE TV SERVICE	CREDIT CARD	_____	_____

VISUAL 9-2: TYPES OF CREDIT

SERVICE CREDIT
A service is provided before you are required to pay for it at the end of the service period (usually a month). No interest charges are made if the bill is paid on time.
Example: Utility (water, electricity, Internet) services paid monthly.

INSTALLMENT CREDIT
Stores/companies allow you to use a good as you repay them in equal payments over a set period of time (such as a year). A down payment is often required and finance charges (interest) are typically included.
Example: A bike shop allows to you purchase a $700 bicycle by paying $100 (the down payment) and $55 per month for a year based on an interest rate of 10% ($600 x .10 = $60 and $660/12 = $55).

CHARGE CARD
Stores/companies allow you to charge purchases during a month and the full balance must be paid at the end of the month. While there is generally no interest payment, there is often an annual fee to use the card.
Examples: American Express card and department store charge cards.

CREDIT CARD
Stores/companies allow you to charge purchases during a month, but the full balance does not have to be paid at the end of the month. If full payment is made there are typically no interest charges, if not, then interest is based on the unpaid balance and added to the next month's balance. Some credit cards require an annual fee, some do not.
Examples: MasterCard, Discover, and VISA.

PERSONAL LOAN
Borrowing money from a financial institution to make purchases or pay off past debts. Typically these loans are unsecured meaning there is no collateral (valuable asset) that the borrower must give up if the loan is not repaid. Finance charges must be paid.
Example: Borrowing $3000 from a credit union to purchase a boat.

AUTO LOAN
Borrowing money from a financial institution or auto dealership to purchase an auto. This is typically a secured loan with the collateral being the auto purchased. Finance charges must be paid.
Example: Borrowing $10,000 from a commercial bank and making 60 monthly payments of $200 (or a total of $12,000 = 60 x $200, so the finance charges are $2000, $12,000 - $10,000).

HOME LOAN (MORTGAGE)
Borrowing money from a financial institution to purchase a house or property. This is typically a secured loan with the collateral being the house or property purchased. Finance charges must be paid.
Example: Borrowing $200,000 from a mortgage company and making 360 monthly payments of $1100 (or a total of $396,000 = 360 x $1100, so the finance charges are $196,000 = $396,000 - $200,000).

STUDENT LOAN
Borrowing money from either the federal government or a financial institution to pay for education beyond high school. This is an unsecured loan with finance charges and with the obligation to repay after graduation.
Example: Stafford Loan

VISUAL 9-3: ARE THESE GOODS WORTH BUYING WITH CREDIT?

Item Purchased	Type of Credit	Impact on Assets	
		Immediate	Over Time
HOUSE	MORTGAGE	+	+/-
VACATION	PERSONAL LOAN	0	-
EDUCATION	STUDENT LOAN	0	+
CAR	AUTO LOAN	+	-/+
FURNITURE	CREDIT CARD	+	-
PIZZA	CREDIT CARD	0	-
SHARES OF STOCK	BROKERAGE LOAN	+	+/-
ELECTRONIC GAME SYSTEM	PERSONAL LOAN	+	-
CABLE TV SERVICE	CREDIT CARD	0	-

MAKING PERSONAL FINANCE DECISIONS
Unit Ten: Protecting

Rule 10: Protect your plan.

While risk is often associated with investment choices, there are other risks that can keep one from achieving their financial goals. Car accidents, medical issues, house fires, lawsuits, and theft (including identity theft) all represent potential obstacles. These risks can be managed by reducing one's potential exposure or by buying insurance. These lessons look at these options through games that involve the random occurrence of events and how students' choose to manage the risks presented.

A. THE THREE D'S OF IDENTITY THEFT

Lesson Description

Students are shown various ways to reduce the threat of identity theft (deter and detect options). They play a game based on these options. Because each of these is costly (mostly in terms of time, effort, and sometimes money), they are only allowed to choose a limited number of ways to protect themselves. They then choose event cards and, depending on their earlier choices, another card to see if they avoided the theft of their identity or not. They discover that 100% protection is not possible and then look at what they need to do should identity theft occur (defend options).

Concepts

Identity theft
The Three D's of Identity Theft:
- Deter
- Detect
- Defend

Objectives

Students will be able to identify strategies to protect their personal information.
Students will be able to identify strategies used by identity thieves to steal their identity.
Students will be able to describe the Three D's of Identity Theft (deter, detect, and defend).

Materials

Activity 10-1: Choosing Your Protection (one copy for each student)
Activity 10-2: Event Strips (one copy for each group)
Activity 10-3: Deck One Cards (one set for each group)
Activity 10-4: Deck Two Cards (one set for each group)
Visual 10-1: Protection Options
Visual 10-2: The Three D's of Identity Theft

Time Required

45 minutes

Procedure

Preparation:

a. Determine the number of groups of students based on the size of the class and the desired number of students in each group (4-5 students per group is recommended, however, larger groups may be desired given the amount of materials required for each group).

b. Prepare "Event Strips" for each group from Activity 10-2. There should be 21 event strips for each group.

c. Prepare "Deck One" cards for each group from Activity 10-3 and prepare "Deck Two" cards for each group from Activity 10-4. Note that "Deck One" will consist of 19 "SAFE" cards and 1 "IDENTITY STOLEN" card, while "Deck Two" will consist of 13 "SAFE" cards and 7 "IDENTITY STOLEN" cards. It is recommended that these two sets of cards be different colors.

1. Ask students what they know about "identity theft." *(Answers will vary.)*

2. Explain that **identity theft** is a form of stealing where someone gains the personal information of another person and then uses that to pretend to be the person whose information was stolen in order to access that person's bank accounts, make purchases with that person's credit or debit cards, gain credit in that person's name, or engage in other criminal behavior. If you are the person whose identity has been stolen there can be several adverse financial impacts including a loss of financial assets, damage to your credit score, and mistaken criminal charges. Correcting the damage can also be very time-consuming and costly.

3. Have students provide some examples of personal information that might be useful for an identity thief. *(Social Security number, computer passwords, credit and debit card numbers, personal identification numbers—PINs--for credit and debit accounts, banking account numbers, medical records, tax records, utility bill statements, etc.)*

4. Explain the principal ways to protect one's personal information or simply PI, is to deter thieves or detect their activities as quickly as possible. Ask students for some examples. *(These should include options shown on Visual 10-1.)*

5. Display Visual 10-1. Discuss each option as necessary. *(Note that "PI" is used for "personal information.")*

6. Ask: Are these all the possible options? *(No, others might include some given earlier by students, plus using fewer paper checks, signing debit and credit cards as soon as they are received, and checking receipts with billing statements.)*

7. Explain that doing all these things takes time, effort, and even money (to buy a shredder or have a hard drive professionally erased). Because people's time, effort, and money are limited, they are often unable to do all of these options all of the time.

8. Tell the class that they are going to play a game called "Safe or Not?" using these protection options.

9. Divide the class into groups as described earlier in the Preparation Step above.

10. Give each group: (1) a set of shuffled event strips from Activity 10-2 (each set should consist of 21 strips), (2) a set of Deck One cards from Activity 10-3 (each set should contain 20 cards, 19 "SAFE" cards and 1 "IDENTITY STOLEN" card), and (3) a set of Deck Two cards from Activity 10-4 (each set should consist of 20 cards, 13 "SAFE" cards and 7 "IDENTITY STOLEN" cards).

11. Distribute a copy of Activity 10-1 to each student.

12. Explain that since time, effort, and money are limited they can only choose 10 of the 20 Protection Options listed on Visual 10-1. So, the first step is for each student in each group to choose whichever ten options they would like. Explain that the chances they will need any of the listed protection options during the game is the same. Have them write down the Protection Option number and a short description of it in their own words in Part 1 of Activity 10-1. *(This step is intended to get students to think about each of the various options and what they mean.)*

13. Explain the rules of the game as follows:
a. There will be ten rounds. At the end of each round you will be either safe or have your identity stolen. So, at the end of each round you will be circling either "SAFE" or "IDENTITY STOLEN."
b. Each round will begin with one student in each group randomly-selecting an EVENT strip and reading or showing it to the group. This will be an event that has happened to each student in the group. As the rounds proceed, the student choosing the event card will be the student to the right of the last student who chose.
c. Once an event is chosen, each student should check to see whether or not they have chosen a Protection Option that protects them from the event or not. If they have the necessary Protection Option, they will draw a card from Deck One. If they do not have the necessary Protection Option, they will draw a card from Deck Two. Have students draw cards starting with the student to the right of the student who drew the event strip. The card chosen will determine whether or not they are "SAFE" or had their "IDENTITY STOLEN."
d. Explain to the students that even though they may have chosen the necessary Protection Option and are selecting from Deck One, it is still possible that they get an "IDENTITY STOLEN" card because no protection option is likely to be followed 100% of the time. However, it is much less likely to happen than if they have the necessary protection. Explain further that even though a student might not have the necessary Protection Option and are therefore choosing a card from Deck Two, they still have a good chance to be "SAFE", but obviously a greater chance of having their "IDENTITY STOLEN." Finally, note that for one event there is no Protection Option and so all members of the group will be drawing from Deck Two. *(Teacher note: Given the number of and types of cards in the decks, there is a 20% chance on each turn of a student getting an "IDENTITY STOLEN" card and an 80% chance of getting a "SAFE" card. Note further that a student is seven times more likely to have their identity stolen without protection than with.)*
d. Remind each group to reshuffle their Deck One and Deck Two cards once they have gone all the way through them.

14. Begin the game and have students record their results in Part 2 of Activity 10-1.

15. After all groups have completed ten rounds have each student record how many times their identity was stolen in Part 3 of Activity 10-1.

16. Have each student write a response to the second question in Part 3 of Activity 10-3 and then have selected students read their responses and have a discussion of their responses. *(First, it is not possible to pursue every possible option available. As noted earlier, people simply do not have enough time, effort, or money to do so. Second, it is not possible to be vigilant in pursuing any option 100% of the time (i.e. sometimes everyone lets their guard down). This is why even when one chose the necessary protection, it was still possible to have one's identity stolen. Deck One represented this by having one "IDENTITY STOLEN" card. Third, there are some events which one simply can't protect themselves against such as a data breach at their bank or a company they do business with.)*

17. Remind students that the Protection Options used in the game were ways a person could make it more difficult for identity thieves to obtain their personal information and ways a person could tell if their personal information had possibly been used or accessed by an identity thief. These respectively represent two of the "Three D's of Identity Theft," **deter** and **detect**.

18. Display Visual 10-2 and review the points under "Deter" and "Detect."

19. Explain that the third "D" is **defend** which refers to those steps one needs to take should identity theft be suspected or has occurred. Discuss the points on Visual 10-2 under "Defend."

20. Closure. Explain to students that in the game they were only allowed to choose ten Protection Options. While pursuing each of these options helps reduce the likelihood of identity theft and the costs associated with it, they too are each costly. One must weigh these costs in deciding what is best for them. For those who are very concerned about identity theft and its consequences, choosing more options than ten would make good sense. Those less concerned about it may choose fewer than ten. Regardless, the more protection options one chooses, the less likely they will have their identity stolen, but the more costs they will incur with respect to doing each protection option. Unfortunately whatever one chooses, 100% protection is never possible.

ACTIVITY 10-1: SAFE OR NOT?

PART 1: Choose <u>10</u> Protection Options and record the number associated with each option chosen below, as well as, a short description of it.

_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____

PART 2: Circle whether you were "SAFE" or had your "IDENTITY STOLEN" in each of the ten rounds.

1. SAFE IDENTITY STOLEN
2. SAFE IDENTITY STOLEN
3. SAFE IDENTITY STOLEN
4. SAFE IDENTITY STOLEN
5. SAFE IDENTITY STOLEN
6. SAFE IDENTITY STOLEN
7. SAFE IDENTITY STOLEN
8. SAFE IDENTITY STOLEN
9. SAFE IDENTITY STOLEN
10. SAFE IDENTITY STOLEN

PART 3: How many times was your identity stolen? _____
Although it is very important to protect your identity, explain why providing yourself complete protection is not possible.

ACTIVITY 10-2: EVENTS

_____

Someone has gone "dumpster-diving" in your trash! You need Protection Option #1.

_____

Someone is trying to "shoulder-surf" while you enter your PIN at an ATM! You need Protection Option #2.

_____

Someone has "picked-your-pocket" and will get your Social Security number! You need Protection Option #3.

_____

Someone is thinking about taking your bank statement out of your mailbox! You need Protection Option #4.

_____

A waiter may take your credit card and "skim" your PI ! You need Protection Option #5.

_____

A hacker is attempting to access your PI through your computer! You need Protection Option #6.

_____

Someone will guess your PIN number based on your birthdate! You need Protection Option #7.

_____

ACTIVITY 10-2: EVENTS (Continued)

An email from your bank wants you to update your current PI information! You need Protection Option #8.

Your credit number may be stolen due to a purchase you are making online! You need Protection Option #9.

Someone has retrieved the hard drive from the computer you took to the recycling center! You need Protection Option #10.

Someone surfing on a social-media network has found out you will be not be home this weekend! You need Protection Option #11.

Your local paper has published a story about you that includes a lot of your PI! You need Protection Option #12.

There are some transactions on your credit card statement that you did not make! You need Protection Option #13.

You are shopping online with a company that regularly resells its customer PI to other companies! You need Protection Option #14.

ACTIVITY 10-2: EVENTS (Continued)

You have not received you monthly utility bill for two months! You need Protection Option #15.

You have received a bill from a company for a purchase you did not make! You need Protection Option #16.

A person near you is using a device to try to capture information off your "smartcard" credit card! You need Protection Option #17.

An auto loan has been taken out in your name without your knowledge! You need Protection #18.

You have received an unsolicited job offer that only requires you to fill out a form with your PI! You need Protection Option #19.

An old account you forgot to close has sent a statement to your old address! You need Protection Option #20.

A company you do business with has had a data breach and your PI stored by them has been comprised! You have <u>no</u> Protection Option.

ACTIVITY 10-3: DECK ONE CARDS

SAFE	**SAFE**
SAFE	**SAFE**
SAFE	**SAFE**
SAFE	**SAFE**
SAFE	**SAFE**

ACTIVITY 10-3: (CONTINUED)

SAFE	**SAFE**
SAFE	**SAFE**
SAFE	**SAFE**
SAFE	**SAFE**
SAFE	**IDENTITY STOLEN**

ACTIVITY 10-4: DECK TWO CARDS

SAFE	**SAFE**
SAFE	**SAFE**
SAFE	**SAFE**
SAFE	**SAFE**
SAFE	**SAFE**

ACTIVITY 10-4: (CONTINUED)

SAFE	**SAFE**
SAFE	**IDENTITY STOLEN**
IDENTITY STOLEN	**IDENTITY STOLEN**
IDENTITY STOLEN	**IDENTITY STOLEN**
IDENTITY STOLEN	**IDENTITY STOLEN**

VISUAL 10-1: PROTECTION OPTIONS

Protection Options

1. **Shred anything that includes any of your PI before trashing it.**
2. **Be aware of your surroundings when inputting any of your PI.**
3. **Keep Social Security number, PIN, and password information in a secured place other than your wallet/purse.**
4. **Remove mail from your mailbox as soon as possible.**
5. **Keep all your credit and debit cards in sight and do not swipe them in unfamiliar or questionable devices.**
6. **Use firewalls, anti-spyware, and anti-virus software on your computer.**
7. **Use strong passwords that are not associated with your PI.**
8. **Do not respond to email, phone, or mailing requests for your PI.**
9. **Make sure online transactions are handled through secure sites ("https") or in encrypted code.**
10. **Remove all your PI from any electronic device before disposal.**
11. **Limit the amount of PI you give on social-networking sites.**
12. **Limit the amount of PI you give in general (private and public).**
13. **Monitor all your billing statements and financial accounts.**
14. **Only shop on websites that have strong privacy and protection policies.**
15. **Question when expected bills and statements do not arrive on time.**
16. **Question when unexpected bills and statements are sent to you.**
17. **Take care when using a "smartcard" credit card.**
18. **Inspect your credit report (at least annually) to see that it is accurate.**
19. **Question unsolicited employment offers that request your PI.**
20. **Limit the number of credit cards/accounts you have and close any accounts you are not using.**

VISUAL 10-2: THE THREE D'S OF IDENTITY THEFT

The Three D's of Identity Theft Protection

Deter: Safeguard your personal information.

1. Shred anything that contains personal information before discarding them.
2. Keep Social Security card, PIN number, passwords, account statements, tax statements, and other personal information in secured places.
3. Use firewalls, anti-spyware, and anti-virus software to protect your computer.
4. Do not respond to unsolicited emails, phone calls, or mailings requesting any of your personal information.
5. Be cautious when using credit or debit cards at all times.

Detect: Monitor your statements and reports.

1. Look for unexplained charges or activities in your financial accounts.
2. Inspect your credit report (at least annually) to see that it is accurate.
3. Question expected bills or account statements that do not arrive on time.
4. Question unexpected bills or account statements you receive that are not yours.
5. Be alert to calls about purchases you did not make or denials of credit for no apparent reason.

Defend: Implement your defense.

1. Place a "fraud alert" or "freeze" on your credit report.
2. Review your credit report and report any activity that you did not initiate.
3. Contact the security or fraud department of any company where there has been suspicious activity and close any questionable account.
4. File a police report.
5. Report theft to the Federal Trade Commission: ftc.gov/idtheft.

B. THE INSURANCE GAME: IS INSURANCE WORTH BUYING?

Lesson Description

Students are shown various insurance options and possible events (risks). The likelihood of each event occurring is based on drawing cards from a standard deck. Given this they choose from

the insurance options. They then track the *cost* of their insurance choices (premiums plus lost investment income) and the *benefit* of their choices (the losses they prevented) as cards representing "real-life" events over several years are drawn. They determine whether or not the insurance choices they made turned out to be good or not for them and why.

Concepts
Insurance
Risk

Objectives
Students will be able to describe the benefits of insurance (loss reduction).
Students will be able to describe the costs of insurance (premiums plus other opportunity costs).
Students will be able to determine their losses given an actual loss and various levels of insurance coverage.
Students will be able to determine whether or not insurance was worth buying over a given period of time.
Students will be able to explain why buying insurance even when the costs exceed the benefits in a given year or over several years may still be worth doing.

Materials
A regular 52-card deck of cards
Activity 10-5: Choosing Your Insurance Coverage
Activity 10-6: Does Insurance Pay?
Visual 10-3: The Risks
Teacher Resource 10-1: Activity 10-6, Column (4)

Time
50 minutes

Procedure
1. Divide the class into 4 to 8 groups. *(Note: It is useful to have a greater number of groups to have more varied outcomes, however, it will take longer to run the simulation since more cards would have to be drawn and the resulting outcome described.)*

2. Distribute a copy of Activity 10-5 to each student. *(It is recommended that this be on a two-sided handout with Activity 10-6 on the other side.)*

3. Describe Activity 10-5 as follows:
This shows five different types of ***insurance*** (protection from possible financial losses) that you can purchase (health, automobile, renter's, disability, and life). Within each of these categories there are several options offering various amounts of coverage or protection. As the coverage gets better, the premium is higher because the insurance company would have to pay out more for a claim. Each premium is an annual premium to cover you for one year.

(Review the meaning of each type of coverage as necessary.) With respect to *health insurance*, a co-pay is the amount you would have to pay for each office visit to your doctor. The insurance

company would pay the rest. The percentage of hospitalization is the amount the insurance company would pay. You would have to pay any remaining amount. With respect to *automobile insurance* the deductible is the amount you would have to pay to repair your car due to an accident (comprehensive and collision coverage are combined here for simplicity). Anything above the deductible, the insurance company would pay. The liability coverage protects you from damages you may cause others. The amount shown is the amount the insurance company would pay. You would be responsible for any amount higher than that. With respect to *renter's insurance* the deductible is the amount you would have to pay on any loss. The insurance company would cover any remaining loss up to the amount shown. Anything above that would be your responsibility. With respect to *disability insurance* each unit of coverage pays you $500 per month to cover your loss of income. There is a maximum coverage of four units ($2000 per month) based on an assumed income of $24,000 per year. Finally, with respect to *life insurance* each unit of coverage pays your beneficiaries $10,000 to cover your funeral expenses, your personal debts, or leave them with some income support.

4. Explain that each student will be choosing their own amount of coverage, but in choosing their coverage they should weigh the benefits of the coverage against the costs. Note that the benefits are lower losses when bad things happen.

5. Display Visual 10-3. Define ***risk*** as the possibility of financial loss and explain that Visual 10-1 shows the possible things that could happen to them each year and the amount of loss they would suffer. Explain that each year a card will be randomly selected for each group and that card will determine what happened that year to each member of the group. For example, if an "8" is drawn, that means each person in the group needed 10 visits to their doctor costing $2000 (note that each visit is $200) and had a hospital stay costing $6000. Thus, without any insurance they would have to pay $8000. How much you actually have to pay will depend on what level of health insurance you choose. *(Optional: The expected loss of each event is actually fairly easy to determine, for example, here there is a 1/13 chance of drawing an "8," or .077. This probability times the loss of $8000 yields an expected loss of $616.)*

6. Note that the "double" card events (such as "K-K") only occur if that card is drawn in consecutive years. For example, when a "K" is first drawn, the event is a "Major fire" causing $4000 in damages. If another "K" is drawn the next year, then the event "K-K" has occurred which is a one-year, major disability costing $24,000 in income. *(Teacher note: Should a group draw a <u>third</u> J, Q, K, or A in a row, just start over as if it is the first J, Q, K, or A drawn.)*

7. Explain that the benefit of insurance is that your loss from these events occurring will be less. Ask: What are the costs of insurance? *(Most students will recognize the payment of the premiums as an important cost, but there is also another opportunity cost.)*
8. Ask: If you pay $1000 for insurance premiums, you lose the opportunity to invest these funds and earn what? *(Interest or a rate of return.)*

9. Ask: If you could earn a 10% rate of return on your invested funds, then what would be the total cost of buying $1000 worth of insurance? *($1100 = $1000 (1 + .10).)*

10. Return student's attention to Activity 10-5. Explain that they are to determine what level of

coverage they would like from each category. *(Note: All states require basic liability coverage with respect to automobile coverage, so you could require that everyone at least chooses Option #3 for this category.)* Their goal is to buy enough coverage to protect themselves from losses, but not so much that they end up spending far more on insurance than it is worth. Note that since they really don't know what will happen for sure, there is no way of determining the exact right amount of coverage (where the benefits of the insurance exactly offset the costs). Tell them to compare the risks and the premiums and make the choices they are most comfortable with. *[Optional: Restrict the total amount they can spend on insurance to $4000 or something lower to reflect the reality that choices on insurance are often limited by one's overall budget.]*

11. Distribute a copy of Activity 10-6 to each student. *(Note: if, as was suggested above, this is already on the reverse side of Activity 10-5, simply have students turn it over.)* Have students enter the number at the bottom of Activity 10-5 on every line in Column (1) of Activity 10-6. This will be their premium payment every year of the simulation (no changes will be allowed). Also have them enter this number times 0.10 on every line of Column (2) of Activity 10-6. This will be the opportunity cost of lost interest due to making these premium payments. *(So, for example, if a student decided to spend $4000 on premiums, they would have $4000 in Column (1) and $400 in Column (2).)*

12. Explain that every student's life is about to begin. Each year a card will be drawn for each group. Each student in that group will experience the event shown in Visual 10-3. First, they fill in the actual loss that would occur if they had no insurance (the number shown on Visual 10-3) in Column (3) of Activity 10-6, and then they fill in the actual loss they would incur given their insurance coverage (which, given they have any coverage at all, should be less). Note that while the same event is occurring to everyone in the same group, they do not necessarily all have the same insurance coverage, so Column (4) would be different for different members of the same group. Also note that since different cards are drawn for each group, each group is experiencing a different "life" or events. *(Students may need help filling in Column (4). Typically, other members in their group can help, but it is helpful for the teacher to describe the event and summarize what it means for different levels of coverage. These numbers have been calculated for each event and each insurance option on Teacher Resource 10-1. For example, suppose an "8" is drawn for a group. Everyone in that group should record "$8000" in Column (3). What they put in Column (4) depends on the health insurance they chose: Option #1: they would only have to pay $100, $10 co-pays for 10 visits; Option #2: they would have to pay a total of $1400, $200 for the 10 visits given the $20 co-pay and $1200 = .20 x $6000 for hospitalization since the insurance company would pay the other 80% or $4800; Option #3: they would have to pay for all the office visits, $2000, but the hospital costs would be fully covered; and Option #4: they would have to pay everything or $8000.)*

13. Have a member of each group draw a card from the deck (replacing the card each time) to determine the event happening during Year 1. Have students complete Columns (3) and (4) as described above.

14. Repeat for as many Years as there is time for…a minimum of four gives students a flavor of what is happening to their group, as well as, to other groups.

15. Have students sum up the values in each Column of Activity 10-6 for the number of years the simulation was run. Based on these numbers, have students fill in the blanks at the bottom of Activity 10-6 as described on the activity.

16. Ask: Who is really glad they bought insurance? *(For any group experiencing particularly costly events, those who bought more coverage are likely very glad they did. In their case, the losses without insurance would have been much greater than with it.)*

17. Ask: Who wishes they would have bought a lot less insurance? *(For any group experiencing fairly inexpensive events, those who bought a lot of coverage are likely wishing they hadn't "wasted their money." In their case, the losses without insurance would likely have been much less than with it.)*

18. Closure. Point out that this is exactly the nature of insurance. The premium payments of those experiencing minor losses help the insurance company cover the losses of those experiencing major losses. Premiums are typically set by insurance companies based on the expected payouts they are likely to make…plus a profit, of course. *(Note: The premiums given in Activity 10-5 have been calculated to assure that this is true based on the expected losses to the insurance company due to the risks shown on Visual 10-3.)* Thus, there must be people who pay more in premiums than they get back in claims. Also, point out that while one group may have experienced many costly events and others only minor events, if the simulation was run again for the same number of years, the fortunes of the groups could easily be reversed. So, even if insurance didn't seem worth it for the first set of years, it doesn't mean it won't be worthwhile in later years.

ACTIVITY 10-5: CHOOSING YOUR INSURANCE COVERAGE

HEALTH INSURANCE (Office Visits, Hospitalization) **$_____**

OPTION #1: **Premium: $3600**
Coverage: $10 co-pay on visits, 100% hospitalization

OPTION #2: **Premium: $2800**
Coverage: $20 co-pay on visits, 80% hospitalization

OPTION #3: **Premium: $2100**

Coverage: 100% hospitalization only
OPTION #4: **No Premium** or Coverage

AUTOMOBILE INSURANCE (Collision and Comprehensive, Liability) **$_____**
OPTION #1: **Premium: $1100**
Coverage: $250 deductible on C&C, Up to $100,000 liability
OPTION #2: **Premium: $950**
Coverage: $500 deductible on C&C, Up to $75,000 liability
OPTION #3: **Premium: $500**
Coverage: Up to $50,000 liability only
OPTION #4: **No Premium** or Coverage

RENTER'S INSURANCE (Fire, Theft) **$_____**
OPTION #1: **Premium: $350**
Coverage: $250 deductible on all losses up to $5000
OPTION #2: **Premium: $250**
Coverage: $500 deductible on all losses up to $3000
OPTION #3: **No Premium** or Coverage

DISABILITY INSURANCE (Long-term injury, illness) **$_____**
OPTION #1: **Premium: $80 per Unit** (maximum of 4 Units)
Unit = $500/month of coverage
Coverage: $500/month x Number of Units
OPTION #2: **No Premium** or Coverage

LIFE INSURANCE (Death) **$_____**
OPTION #1: **Premium: $60 per Unit**
Unit = $10,000 of coverage
Coverage: $10,000 x Number of Units
OPTION #2: **No Premium** or Coverage

TOTAL ANNUAL INSURANCE PREMIUMS **$_____**

VISUAL 10-3: THE RISKS

HEALTH LOSSES

Card and Event		Loss
2:	1 visit	$200
3:	2 visits	$400
4:	5 visits	$1000
5:	10 visits	$2000
6:	15 visits	$3000
7:	20 visits	$4000
8:	10 visits, one hospital stay	$2000 + $6000 = $8000
9:	15 visits, two hospital stays	$3000 + $15000 = $18000
10-10:	20 visits, major hospital stay	$4000 + $76,000 = $80,000

AUTOMOBILE LOSSES

Card and Event		Loss
A:	Minor fender bender	Auto Damage: $1000 Liability: $0
J:	Minor accident	Auto Damage: $3000 Liability: $0
J-J:	Major accident	Auto Damage: $6000 Liability: $20,000
Q-Q:	Major accident with injury	Auto Damage: $15,000 Liability: $90,000

RENTER'S LOSSES

Card and Event		Loss
10:	Theft of electronics	$1000
K:	Major fire	$4000

DISABILITY LOSSES

Card and Event		Loss
Q:	2 months (injury)	$4000
K-K:	1 year (major disability)	$24,000

DEATH

Card and Event		Loss
A-A:	Death	Financial burden on others (burial expenses, payment of debts, loss of income, etc.): $30,000

ACTIVITY 10-6: DOES INSURANCE PAY?

Year	Card	(1) Total Annual Insurance Premiums	(2) Column (1) times 0.10	(3) Losses Without Insurance	(4) Losses With Chosen Insurance Coverage
1					
2					
3					
4					
5					
6					
7					
8					
TOTALS					

CALCULATE **TOTAL COSTS WITH CHOSEN INSURANCE** **$_____**
[= Column (1) + Column (2) + Column (4)]

CALCULATE **TOTAL COSTS WITHOUT INSURANCE** **$_____**
[= Column (3)]

DID INSURANCE PAY (Did it help to lower costs)**?**

TEACHER RESOUCE 10-1: ACTIVITY 10-6, COLUMN (4)

CARD	OPTION #1	OPTION #2	OPTION #3	OPTION #4
2	$ 10	$ 20	$ 200	$ 200
3	$ 20	$ 40	$ 400	$ 400
4	$ 50	$100	$1000	$1000
5	$100	$200	$2000	$2000
6	$150	$300	$3000	$3000
7	$200	$400	$4000	$4000
8	$100	$1400	$2000	$8000
9	$150	$3300	$3000	$18000
10	$250	$500	$1000	--
J	$250	$500	$3000	$3000
K	$250	$1500	$4000	--
A	$250	$500	$1000	$1000
10-10	$200	$15600	$4000	$80000
J-J	$250	$500	$6000	$26000
Q-Q	$250	$15500	$55000	$105000

CARD	0 UNITS	1 UNIT	2 UNITS	3 UNITS
Q	$4000	$3000	$2000	$1000
K-K	$24000	$18000	$12000	$6000
A-A	$30000	$20000	$10000	$ 0