Making Our Money Grow

Understanding the time value of money.

In this activity students will learn about the time value of money and explain how small amounts of money, invested regularly over time, grow exponentially. Students will be introduced to the terms ***investment***, ***simple interest***, and ***compound interest*** and in the end will devise a periodic investment plan for accumulating the tuition required to attend a four-year college.

This activity was provided by **Pricewaterhouse Coopers**. The activity is part of the curriculum for PwC's ***Earn Your Future*** program. The program was developed as part of Pricewaterhouse Coopers' commitment to helping students develop critical financial skills and to providing educators with resources to teach those skills.

MATERIALS NEEDED

- Millionaire Facts handout (1 per student)
- A Little Saving Goes a Long Way handout (1 per student)
- Famous Quotes and Investing handouts A & B (1 per student, give half the students A and half B)
- Investment Plan Directions handout (1 per student)
- Post-Assesssment (optional, 1 per student)
- Chart paper
- Markers

PART 1: MILLIONAIRE FACTS

To begin this exploration on the importance of investing, start with a class discussion. Ask the students: "Who wants to be a millionaire?" and "Do you think you will become a millionaire?" For those who respond no to the second question, ask: "Why don't you think you could become a millionaire?" For those who respond yes, ask: "How do you think you will become a millionaire?" Take the time to have a few different kids answer and share their ideas about what can help one to become a millionaire.

Next, pass out the *Millionaire Facts* handout, one per student. Now that the students have shared some thoughts on what makes one a millionaire, have them read through the Millionaire Facts handout and answer true or false to each statement. Give the students one to two minutes complete the handout.

Once everyone has had a chance to answer, go through each statement as a class. Read each statement aloud and ask for a show of hands who answered true and who answered false. Allow students to share their reasoning. Then go through the answers with them. Did most of the class think these statements are true? Maybe there is more to being a millionaire than we thought...

Answer Key for *Millionaire Facts*:

1. Most millionaires inherited their wealth.
   False--about 80% of millionaires are first-generation wealthy.

2. Millionaires are rarely self-employed.
   False--more than half of millionaires are self-employed.

3. All millionaires wear expensive clothes and drive new cars.

False--50% of millionaires have never paid more than $400 for a suit and more than 50% of millionaires drive a car that is more than two years old.

4. Most millionaires earn more than $500,000 per year.
False--less than 15% of millionaires have an income over $500,000 a year.

5. Most millionaires drop out of college to start work.
False--four out of five millionaires are college graduates.

6. It is impossible to save enough to be a millionaire.
False--If you are diligent with your saving and investing, you can save enough to become a millionaire. For example, at 22-years-old, if you saved $50 a week for your entire working life, you would earn $2,600 a year. If that money was invested and earned 9% interest each of those years, you would have more than $1 million by the time you turned 63-years-old.

PART 2: A LITTLE SAVINGS GOES A LONG WAY

Your students are probably familiar with the saying "money doesn't grow on trees," but they may not know there is a real way to make money grow. The rest of the activity will help the students understand the basics of saving and investing money. Pass out the *A Little Saving Goes a Long Way* handout, each student should get a copy. Read the instructions at the top of the handout aloud. Start by working through the first line or two with the students, then give them two or three minutes to complete the rest of the table on their own.

Once the students have completed the handout, go over the answers and have some students share their responses to the last question. This should give the students a general understanding of how saving a little bit of money in the present can add up over time. The next step is understanding how these savings can also grow over time.

Answer Key for *A Little Savings Goes A Long Way*:

Grade Level	Savings
7th grade	$360
8th grade	$720
9th grade	$1,080
10th grade	$1,440
11th grade	$1,800
12th grade	$2,160

PART 3: FAMOUS QUOTES AND INVESTING

Pass out the Famous Quotes and Investing handouts. There are two versions, A and B. Each student should receive one of the two, so it may be easiest to give half of the club A and half B. Each handout has two common quotes. Have the students take a couple minutes to fill out the handout by writing what they think the quotes mean and how they relate to investing. Even if the students haven't heard these quotes before, encourage them to read them and come up with their own interpretations.

Once the students have finished, lead them in a discussion of the sayings. Have students share their answers for each of the different quotes. The following table lists some key discussion points to talk about for each one and explains how they relate to saving money and investing.

Famous quote	Discussion Points
Put not your trust in money, but put your money in trust.	Have the students talk about what it means to "put trust" in something. Ask why it might not be a good idea to have trust in money. Then explain that the use of "trust" in the second half has to do with a way of saving money. Discuss why saving might be something you can "trust".
Without risk, there is no reward.	Ask students to think of situations where someone might gain a reward. Have them identify what a person might risk to get that reward. Ask them if it is always wise or rewarding to "play it safe". Lead them to the understanding that sometimes you have to "take a chance" to get something great.
Don't put all your eggs in one basket.	Have students visualize what a basket full of eggs would look like. Then ask them what could go wrong with a basket full of eggs. Explain that if the eggs were representative of everything that is important to them, then they could lose everything if something went wrong and the eggs all broke.
In the old days, a man who saved money was a miser; nowadays he's a wonder.	Help students define the term "miser". Consider using Ebenezer Scrooge as an example. Then ask students to think about what the word "wonder" means in this context. If they aren't following, try using a different word in a different sentence. Eventually lead students to the understanding that "a wonder" means something unusual. Hence, it is hard today to find people who actually save.

Now students have a very general idea about the importance of investing. Explain to students that an ***investment*** is when you ***put money aside specifically to earn a profit***. When you save money, you may not earn a profit on that money, but when you invest you put it somewhere where you have the potential to earn more money.

You earn a profit when the money you invest accumulates interest. There are two types of interest, simple interest and compound interest. Usually interest is based on a percentage of the total amount. For example, if you earn 5% interest on money you invest, then you would have the original amount you invested and an extra 5%.

Put an example on the board and walk students through the calculation of simple interest. Say you have $100 and you put it in an account that pays 5% interest, you would earn $5. So your total balance would be $105.

Write:
100 × 0.05 = 5
100 + 5 = 105

Simple interest is when the interest paid or figured on the original amount of a loan or on the amount of an account. In this example case, you would always earn $5 because it is based on your original $100. After one year you would have $105, after two years $110, after three years $115, etc.

There is another type of interest called compound interest. ***Compound interest is interest paid or to be paid both on the principal and on accumulated unpaid interest***. Practice on the board using the same example investment as you used for simple interest so the students can understand the difference. If you have $100 in an account and the account pays 5% compound interest every year, let's see what your total balance would be after 3 years.

Write:

Millionaire Facts

Read each of the statements below. If you think the statement is true, write "true" next to or beneath the statement. If you think the statement is fals, write "false" next to or beneath the statement.

1. Most millionaires inherited their wealth.

2. Millionaires are rarely self-employed.

3. All millionaires wear expensive clothes and drive new cars.

4. Most millionaires earn more than $500,000 per year.

5. Most millionaires drop out of college to start work.

6. It is impossible to save enough to be a millionaire.

A Little Saving Goes a Long Way

Savings is income or money not spent at the present moment. The money that is accumulated over a period of time is called savings.

There are 180 days in a school year, and in 7th grade you begin saving $2.00 each day. You save all the money each year. How much money would you have saved at the end of each year below?

Grade Level	Savings
7th grade	
8th grade	
9th grade	
10th grade	
11th grade	
12th grade	

What are some ways that you could find, or come up with, $2.00 a day? What could you give up each day in order to save $2.00?

Famous quotes and investing (A)

Famous quote	What I think it means	What it has to do with investing
Put not your trust in money, but put your money in trust.		
Without risk, there is no reward.		

Famous quotes and investing (B)

Famous quote	What I think it means	What it has to do with investing
Don't put all your eggs in one basket.		
In the old days, a man who saved money was a miser; nowadays he's a wonder.		

$$ Investment Plan Directions $$

Your task is to devise an investment plan so that you can save enough money to pay for your college tuition and fees. Use the guidelines below to help you come up with your investment plan. You want to save enough money so that you have enough to cover your entire four years. Read through each of the steps, including the example at the end, before you get started.

1. Imagine that it will cost $7,605 per year for your tuition and fees.

2. Calculate your total cost (4 years of tuition and fees) to determine the total amount you need to save. To calculate your total cost, multiply the cost per year ($7,605) by the number of years (4).

3. Once you have calculated your total cost, figure out how many years you have to save. You need to determine how many years you have from now until you start college (after 12th grade).

4. Divide your total costs by the number of years you have to save, in order to figure out how much you need to save each year so that you can have that total amount by the time you *enter* college (after 12th grade).

5. Create a plan that shows how much you will need to save each month from now until high school graduation in order to reach your goal.

6. Record your ideas on the chart paper and be prepared to present to the class.

7. Here is a sample problem to get you started.

   Alexandra is in 11th grade. She will attend college at the end of next year. Her tuition and fees will be $7,500 per year for four years. That means:

   - Her total cost for college will be $30,000 (7,500 × 4 = 30,000).
   - She has two years to save: All of her 11th grade year and all of her 12th grade year.
   - She needs to save $15,000 per year to have enough money by the time she graduates (30,000 ÷ 2 = 15,000).
   - If she has two years to save, the is the same as 24 months (12 × 2).
   - She therefore needs to save $1,250 each month to have enough money by the time she graduates (30,000 ÷ 24 = 1,250).
   - Now she needs to make a list of ways she could save this amount each month (i.e. babysitting, part-time job at the mall, tutoring, bake sales, yard sales, save money in interest bearing account, etc.)

Post-Assessment
Investing for the Future

Please select the correct answer for each of the following questions:

1. The profit gained on money that is invested is called
   a. Credit
   b. Debit
   c. Interest
   d. Liability

2. Simple interest is calculated based on
   a. The original amount of the loan
   b. A borrower's creditworthiness
   c. The original amount of the loan and accumulated unpaid interest
   d. The amount of accumulated unpaid interest

3. Spreading your money amoung different kinds of investments
   a. Is called diversity
   b. Costs more
   c. Reduces risk
   d. All of the above

4. On your 11th birthday, you begin saving $20 each month in an account that does not earn interest. How much money will you have saved by your 16th birthday, after 5 years (60 months) or saving:
   a. $120
   b. $500
   c. $1,200
   d. $2,000

5. You have been saving your money regularly, and you are now looking forward to investing it. As a wise investor, what is something you would not do?
   a. Invest in retirement from an early age
   b. Invest all of your savings
   c. Regularly update your budget to reflect your expenses and income
   d. Use a savings account

Please choose the number on the scale that best indicates how strongly you agree or disagree with the following statements:

	Strongly disagree				Strongly agree
I understand how money can grow through saving and investing.	1	2	3	4	5
I feel confident making decisions about money.	1	2	3	4	5
I am interested in learning more about managing my personal finances.	1	2	3	4	5