

*Saving
and Investing*
Investing For the
Future

PwC's *Earn Your Future*[™] Curriculum

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Introduction

“The reality is that all children don’t know the basics of saving and investing. It’s a skill they need to be successful in our economy.”

-Education Secretary Arne Duncan, April 2011.

Recent history underscores the immediate need for youth to develop skills in math and financial literacy, and yet, current data shows there is a lack of access to curricula for students to learn:

- Nearly two-thirds of today’s high school students are financially illiterate*
- The average high school senior can only answer about half of the questions on a basic financial knowledge test**
- U.S. ranked 24th among 35 countries surveyed for math performance of 4th grade students ***

The enclosed lesson plan about financial literacy is designed to increase students’ proficiency in financial literacy. Your expert knowledge and real-life examples, coupled with this one- hour lesson plan aligned to national standards in personal finance education, will fill a critical gap in our current education system, and better prepare the next generation of leaders to make sound financial decisions and be productive citizens.

We applaud your efforts to bolster students’ understanding of concepts critical to the health of our economy and stability of our nation. Furthermore, we thank you for serving as an ambassador for PwC, reinforcing our commitment to helping students improve their skills in financial literacy and to youth education overall.

Lesson description

Students will learn about the time value of money and explain how small amounts of money invested regularly over time grow exponentially. Students will devise a periodic investment plan for accumulating the tuition required to attend a four-year college.

Grade(s)

6-8

Lesson time

45-60 min

Pre-visit prep

- Review the 5-minute prep to familiarize yourself with the lesson topic and vocabulary
- Review handouts to familiarize yourself with their structure and requirements
- Obtain lesson materials listed under “Materials” section below

Student learning objectives

Students will:

- Define investment, simple interest, compound interest
- Calculate the interest earned on an investment
- Devise an investment plan for accumulating the tuition needed to attend a four-year college

Materials

For up to 30 students, obtain ahead of time:

Class/group

- Chart paper
- Markers
- Handout A Answer Key – Millionaire Facts (1 copy for the facilitator)
- Handout B Answer Key – A Little Savings Goes a Long Way (1 copy for the facilitator)
- Handout C.3: Facilitator Discussion Points (1 copy for the facilitator)
- Handout D.1 Answer Key – Compound Interest
- Handout E Answer Key – Compound Interest

Student

- Calculators (1 per group for 5-6 groups)
- Handout A – Millionaire Facts (1 per student ~ 30 copies)
- Handout B – A Little Savings Goes a Long Way (1 per student ~ 30 copies)
- Handout C– Famous Quotes and Investing – version A (1 per student [for half the class] ~ 15 copies)
- Handout C.2– Famous Quotes and Investing – version B (1 per student [for half the class] ~ 15 copies)
- Handout D – Investment Plan Directions (1 per student ~ 30 copies)
- Handout D.1 – Compound Interest (1 per student ~ 30 copies)
- Handout E – Compound Interest (1 per student ~ 30 copies)

5 Minute Prep

Background

As we grow and mature, we must find ways to secure our financial future. One way we can do this is through savings and investments. The key to getting the most out of our investments is to secure investments that have high interest rates. This requires that we research our options. It also requires that we are diligent about putting money aside on a consistent and regular basis. Even a small amount can grow exponentially if we invest it wisely.

Vocabulary

- **Investment:** money put aside for profit
- **Interest:** the profit on money that is invested, which is usually a percentage of the invested amount
- **Compound Interest:** interest paid or to be paid both on the principal and on accumulated unpaid interest
- **Simple Interest:** interest paid or figured on the original amount of a loan or on the amount of an account

Sources

Background information and vocabulary adaptations based on information from:

- * Council for Economic Education: http://www.councilforeconed.org/news/story.php?story_id=20
- ** Jump\$tart, Jump\$tart 2006 Financial Literacy Quiz: <http://www.savingadvice.com/tools/quizzes/jumpstart-financial-literacy.html>
- *** U.S. Department of Education Press Release, *American Students Show Steady Progress in Math, Rank High in International Education Comparison TIMSS*: <http://www2.ed.gov/news/pressreleases/2008/12/12092008.html>
- Vocabulary adapted from Merriam Webster Dictionary for Kids: www.wordcentral.com
- Average college tuition costs taken from: www.collegeboard.com/student/pay/add-it-up/4494.html
- Millionaire Facts adapted from *The Millionaire Next Door*, by Thomas J. Stanley and William D. Danko (1996)

Lesson activities

Greeting

Say: Hi everyone. My name is _____. I am happy to be here working with you today. Today we are going to spend some time talking about how to turn your money into more money!

Activity A – Millionaire status (10 minutes)

Materials

Class/Group student (one per each student)

- Handout A Answer Key – Millionaire Facts (1 copy for the facilitator)

Student (one per each student)

- Handout A – Millionaire Facts

Ask: If I were to ask the question “Who wants to be a millionaire?” how many of you would say “yes”?

Count the raised hands.

Ask: If I were to ask the question “Do you think you will become a millionaire?” how many of you would say “yes”?

Count the raised hands.

Ask: For the people who said yes, who would like to tell me how they think they could become a millionaire?

Select 1-2 students to share ideas.

Say: Okay, those sound like some interesting ideas.

Ask: For the people who said no, they don’t think they could become millionaires, can someone tell me why they don’t think so?

Select 1-2 students to share ideas.

Say: It seems like we already have some thoughts about millionaires and what it takes to be a millionaire. I am going to give you a quick true/false quiz based on facts about millionaires.

Distribute Handout A.

Say: Take about 1 minute to answer true or false for each of the statements. When you are finished, we will go over the answers.

Allow students 1 minute to work on the worksheet.

Say: Time’s up. Let’s go over the answers.

Read each statement and then read the complete answer from the Handout A Answer Key.

Ask students if they have any questions.

Say: That was pretty interesting. Maybe we don’t know as much about being a millionaire as we thought. So now that we have some information about millionaires, let’s talk about how we can accumulate more money.

Activity B – Growing your money by saving (10 minutes)

Materials

Class/Group

- Chart paper OR blackboard/whiteboard/overhead projector
- Markers
- Handout B Answer Key – A Little Savings Goes a Long Way (1 copy for the facilitator)

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Student (one per student)

- Handout B – A Little Savings Goes a Long Way

Ask: How many of you have heard the expression “money doesn’t grow on trees”?

Scan the room to note student responses.

Ask: Did you know that there is a way to make your money grow?

Say: We can grow our money by saving and investing.

Ask: How many of you know what it means to save money? Who wants to explain what that means?

Select one student to share idea.

Say: Basically saving money means not spending our money and putting it aside. The more you put aside, the more you will save. That is one way to make your money grow. Even if you just put aside a little bit, over time that money will grow and grow.

Say: I am going to give you a worksheet that will help you see how saving just a little bit of money every day could turn into a large amount over time.

Distribute Handout B.

Read the opening paragraph at the top of the page.

Say: Let’s work out the first problem together.

Say: If you save \$2 a day for 180 days, you would have \$360 at the end of 7th grade.

Write: $2 \times 180 = 360$.

Say: If you have \$360 at the end of 7th grade and that carries over with you to 8th grade, I want you to figure out how much you would have at the end of 8th grade.

Ask: Does anyone have an answer?

Select 1 student to share.

Say: So at the end of 8th grade, you would have \$720. Now that you have the idea, I want you to finish the chart and answer the question at the bottom of the page.

Allow students 2 minutes to complete Handout B.

Say: I am going to read the answers for the rest of the chart.

Read the remaining answers from the Handout B Answer Key.

Ask: Would anyone like to share some of the things they wrote down for the question at the bottom of the page?

Select 1-2 students to share their responses.

Say: I think now you have a good idea how to find money to save and how that money can grow if you give it time. But do you remember that I said we can make our money grow by saving and investing? Let's shift gears now and talk about investing.

Activity C – Introduction to investing (7 minutes)

Materials

Class/Group

- Handout C.3: Facilitator Discussion Points (1 copy for the facilitator)

Students

- Handout C – Famous Quotes and Investing – version A (1 per student [for half the class] ~ 15 copies)
- Handout C.2 – Famous Quotes and Investing – version B (1 per student [for half the class] ~ 15 copies)

Say: There are many people in the world who offer all kinds of advice about saving and investing. I bet there are some quotes that you have heard and never really thought about what they might have to do with saving and investing.

Say: I am going to give you a handout that lists some well-known quotes. There are two versions of this handout, and they each have different quotes. This way, when we go over the quotes, you'll be able to learn from each other!

Say: In the first column, I want you to write down what the quote means or what you think it means. Even if you have never heard the quote before, I want you to come up with something.

Distribute Handout C and Handout C.2

Note: Handout C and Handout C.2 contain different quotes; this will allow half of the class to respond to one set of quotes and the other half of the class to respond to the second set of quotes. Please be sure to distribute Handout C to half the class and Handout C.2 to the other half of the class.

Allow students 1-2 minutes to fill in the first column of the chart.

Say: Do I have any volunteers who would like to share what they wrote for 1 or 2 of the quotes?

Select 2-3 volunteers to share ideas.

Say: Okay, take a minute now to fill in the last column and then we will share some more of your ideas.

Allow students 1-2 minutes to complete the final column on the chart.

Say: I would like to have 1-2 volunteers share their ideas for each quote. We will go over each of the quotes. After we finish a quote, I will share some of my ideas as well.

Note: Use Handout C.3: Facilitator Discussion Points to guide the discussion. If students understand the concept, you may not need to clarify. If clarification is needed, present them with the corresponding discussion points on this handout.

Select 1-2 students to share the ideas they wrote in the last column for the first quote.

Share your thoughts after students have shared their ideas.

Continue the procedure until all quotes have been discussed.

Say: Now that we have a very basic idea about investing, I want us to delve a little deeper into this topic. I want to show you how you can grow your money by making wise investment decisions.

Activity D – Growing your money by investing (7 minutes)

Materials

Class/Group

- Chart paper OR blackboard/whiteboard/overhead projector
- Markers

Say: Before, we were talking about saving as a way to grow our money. Now I want us to talk about investing. Investing is when you put money aside specifically to earn a profit. So when you save, 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.

Ask: Does anyone know how you can earn more money when you put your money in the bank?

Select 1-2 students to share ideas.

Say: If you put your money in an account that earns interest, then you earn more money.

Ask: Does anyone know what interest is or how it works?

Select 1-2 students to share ideas.

Say: Interest is the profit that you earn on money that you invest. Usually interest is based on a percentage of the total amount. For example, you can earn 5% interest on money that you invest. That means you would have the original amount that you invested and an extra 5%.

Say: Let me give you an example. If 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: $100 \times .05 = 5$
 $100 + 5 = 105$

Say: When the interest that is paid is only applied to the original amount that you invested, this is called simple interest. So that means in an account like this, you would always only earn \$5 because it is always based on your original \$100.

Say: There is another type of interest called compound interest. Compound interest is money that is paid on the amount of the original investment and any interest that has been earned. Let's practice with our example we had before.

Say: If you have \$100 and the account pays 5% compound interest every year, let's see what your total balance would be after 3 years.

Say and write: $100 \times .05 = 5$
 $100 + 5 = 105$
 $105 \times .05 = 5.25$
 $105 + 5.25 = 110.25$
 $110.25 \times .05 = 5.51$
 $110.25 + 5.51 = 115.76$

Say: Now I want to give you a chance to practice.

Handout D.1 – Compound Interest

Materials

Class/Group

- Handout D.1 Answer Key– Compound Interest (1 copy for the facilitator)

Students

- Handout D.1 – Compound Interest (1 per student ~ 30 copies)
- Calculator (1 per group or 1 per person ~ 5-6 groups)

Distribute Handout D.1 – Compound Interest and calculators.

Say: In our previous example, we found out that if we invest \$100 with a 5% compound interest rate, we will have \$115.76 after three years. What if we invested \$300 with a 4% compound interest rate? How much money will we have after 5 years?

Have students work independently or in groups on Handout D.1 – Compound Interest.

Draw a table on the board similar to the one below while students work. Once the class has finished, walk through as group.

Year	Investment	Interest	Balance
1			
2			
3			
4			
5			

Say: I need a volunteer to come to the board and help work out the problem.

Ask: Any volunteers?

Select one volunteer and have the volunteer come to the board.

Work together as a class to figure out the amount of compounded interest each year.

Have the student volunteer add the values to the table and eventually identify the final total. The completed chart should have the following values:

Year	Investment	Interest	Balance
1	\$ 300.00	\$ 12.00	\$ 312.00
2	\$ 0.00	\$ 12.48	\$ 324.48
3	\$ 0.00	\$ 12.98	\$ 337.46
4	\$ 0.00	\$ 13.50	\$ 350.96
5	\$ 0.00	\$ 14.04	\$ 365.00

Say: So you can see how compound interest allows you to earn more because the interest continues to be applied to the growing balance.

Ask: Are there any questions?

Answer any remaining questions.

Say: So far today, we have talked about saving, investing, and interest. Now it is time to put all of this information together to see how we can make it work for our long-term benefit.

Activity D (part-two) – Investment plan (20 minutes)

Materials

Class/Group

- Chart paper
- Marker

Students

- Handout D – Investment Plan Directions (1 per student ~ 30 copies)
- Chart paper (1-2 sheets per group ~ 5-6 groups)
- Markers (1 pack per group ~ 5-6 groups)
- Calculator (1 per group ~ 5-6 groups)

Say: The main reason that we save is so that we can experience a level of financial comfort sometime in the future. It is a good idea to save over time so that when large expenses come up or there is an unplanned emergency, it won't cause us financial hardship. One large expense that you all need to start planning for is your college education.

Ask: How much do you think it costs to go to college? How much is it every year?

Select 1-2 students to share ideas.

Say: Public four-year colleges charge, on average, \$7,605 per year in tuition and fees for in-state students. [NOTE: You may need to explain the term “in-state student.”]

Say: This could end up being very expensive. This is why it would be wise to come up with an investment plan. If you can figure out how to best invest your money, then you could have a significant amount saved before you even start going to college.

Say: I am going to put you in groups and your task will be to come up with an investment plan to help you pay for your college tuition and fees.

Divide the class into groups. You may use whatever method you choose to divide students (counting off, same color clothes, proximity, birthdays, etc.).

Say: Now that you are in your groups, I will pass out the directions sheet that explains exactly what you need to do. I will also pass out chart paper, markers, and one calculator for each group. Once you have come up with a plan, I want you to write it on the chart paper. We will share our ideas when time is up. You will have 15 minutes to work on this and then we will take 5 minutes to share our work.

Distribute Handout D, chart paper, markers, and calculators to each group.

Allow students 10 minutes to work.

Walk around the class and answer questions as needed.

Say: You have 5 more minutes and then we will share. You may want to start writing your ideas down on your chart paper.

Allow students 3 more minutes to work.

Say: You have 2 more minutes.

Say: Time is up. Let's take a few moments to share some of your investment plans. We only have a little time left, so every group may not get a chance to share.

Ask: Is there any group that would like to go first?

Select one group to share ideas.

Select additional groups if time permits.

Say: I think you all can see the benefit of planning ahead of time and making sure that you invest wisely for this future expense. Saving a little every day, week or month will make a huge difference a few years from now.

Say: Just think: if Alexandra, in our sample problem, started saving as a 10th grader for college, she would only have to save \$10,000 per year or \$833 per month. But, because she started saving as an 11th grader, she instead has to save \$1,250 per month or \$15,000 per year. If she started saving a year earlier, she would have saved over \$400 a month in investments savings.

Say: It truly pays off to start saving sooner rather than later.

Closing reflections (5 minutes)

Say: We have gone over a lot of information today. We have talked about saving, investing, simple interest, compound interest, and investment plans. At the beginning of the class, I asked you how many of you thought you could be millionaires. Now that we have gone over this information, I want to know how many of you think you can be disciplined enough to start saving and investing your money so that you can be a millionaire someday.

Count raised hands.

Say: Thank you all for having me. I am sure that we can all make it to millionaire status if we start saving and investing today!

Evaluation/assessment of student learning

During lesson/in-class

- Students complete true/false quiz about millionaires

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- Students calculate savings over an extended period of time
 - Students calculate interest earned over an extended period of time
 - Students create an investment plan to pay for future college tuition

Ideas for post-lesson assessments

- Students take a quiz on key terms from the lesson: savings, investment, interest, simple interest, and compound interest.
- Students solve a variety of word problems involving compound interest.
- Students select the best investment option based on interest rates and investment period.

Extensions/enrichment

- Students can research a variety of investment options, including money market accounts, certificates of deposit, stocks, and bonds.
- Students can visit the website www.mappingyourfuture.org/Money to devise a budget for college costs.
- Students can conduct research on millionaires to identify how they made their money.