

Buying a Home

Income vs. Monthly Payments

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:

- A 2011 survey conducted by American Express found that a majority of parents with children in high school or college gave schools below-average or failing grades in teaching responsible spending.
- A 2012 survey by Junior Achievement and Allstate Foundation showed 23 percent of teens are uncertain about their ability to budget successfully.
- Despite the fact that 13 states mandate personal finance coursework as a high school graduation requirement, there is no national legislation mandating that it be a requirement in schools.*

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 factors people usually consider when choosing a place to live, as well as the characteristics of the homes that need to be studied. Students will learn how a house’s characteristics and amenities impact the cost of the home. Students will explore what might be an affordable monthly payment based on income and other expenses. Lastly, students will calculate a very basic total cost of a mortgage in order to understand the cost of interest.

Grade(s)

3-5

Lesson time

45-60 min

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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:

- Describe characteristics of housing and how those characteristics affect the housing cost
- Use a circle graph to compare monthly income and expenses to determine an affordable monthly housing payment
- Calculate a simplified total cost of borrowing money

Materials

For up to 30 students, obtain ahead of time:

Class/group

- Chart paper/blackboard/whiteboard
- Markers
- Colored pencils or crayons (six different colors, at least five sets)

Student (one for each student)

- Handout A – Monthly Expenses Circle Chart
- Handout B – Total Cost

5 Minute Prep

Background

The purchase of a home is usually the single largest expense the average person will encounter in a lifetime. Yet when the time comes to purchase a home, the details, comparisons, laws, and standard practices can make for an overwhelming experience. People often make decisions based on anecdotal information, rather than understanding that the needs of each person are unique and must be taken into consideration. An uninformed home buyer can end up losing thousands of dollars, incur the loss of their home, or even end up in bankruptcy. The effects of these losses can extend throughout the economy. An important safeguard against such losses begins in educating students about the process of buying a home. Although the decisions are many years away, it is beneficial for even young students to understand monthly income vs. expenses, as well as the total cost of a home mortgage.

Vocabulary

- **Expenses:** something spent; the spending of money
- **Income:** money received; money gained from labor (work), business, or property
- **Interest:** a charge for borrowed money
- **Mortgage:** a loan for property; often referred to as the combination of principal and interest
- **Principal:** money that is borrowed or owed

Sources

Background information and vocabulary adaptations based on information from:

- *Council for Economic Education 2011 Survey of the States
- Vocabulary adapted from Merriam Webster Dictionary for Kids: <http://www.wordcentral.com/>

Pre and Post Assessments

Before beginning the lesson, facilitators should introduce themselves and **distribute** the Pre-Assessment to the students. If time allows, consider conducting a mini icebreaker before the Pre-Assessment.

Note: It is highly recommended that facilitators read the questions aloud to the students and encourage students to select answers as they move through the questions. Reassure the students that the assessments are not graded tests or quizzes, and they do **not** need to put their names on the assessments. The assessments are a tool to measure classroom comprehension of a given module and gauge effectiveness of instructor delivery.

Collect the Pre-Assessments once completed.

Facilitators should teach the lesson to the students and administer and collect the Post-Assessment at the end of class, **keeping in mind the same considerations outlined above**. Again, students do **not** need to put their names on Post-Assessments.

Lesson activities

Greeting

Say: Hello everyone. My name is _____. I am excited to be here today because we are going to talk about some of the things you need to think about if you want to buy a house.

Activity A – Making decisions (10 minutes)

Materials:

Class/group:

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

Note: Keep in mind that some families of the students have purchased a home and some are renting. This decision is dependent on the needs of the family at the time. It is important that discussion not revolve around which is better, as needs vary by family.

Say: People make decisions every day. They make decisions about what to eat for breakfast, what to wear to school, and which book they'd like to read. Some decisions are harder than others.

Ask: Think about a decision you might have made. What decision did you make? Was it an easy decision or a hard decision? Think about it this for just a moment.

Pause for a few seconds.

Say: Now turn to someone next to you and tell them about the decision you made. If you don't have a partner to share with, raise your hand.

Note: Pair up students who have no partners or ask a student to join in with a group of two students to share.

Allow 1 minute for sharing time

Say: Making a decision about where to live can be a difficult thing to do.

Ask: Think about what you would want if you had enough money to buy a house. What types of things would be important to you?

Write their ideas on the board.

Note: Prompt students if needed to include size of house, amount of land, and location of house.

Say: These are great ideas! You can see that some people are interested in the size of the house and some are interested in the yard. Others are interested in what is inside the house.

Ask: What do you think makes a house more expensive or less expensive?

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Write an asterisk or underline previous items written that students say affect the cost of the house.

Say: You are right! A larger house usually costs more money. A house near a park might cost more money, but it might not. The location of the house does affect the price.

Ask: We've talked about the size of houses and where they are located. If you could only choose one thing, what is most important to you? Do you care more about the size of the house or where the house is located?

Pause for a few seconds so students can think.

Ask: How many people think the size of the house is most important?

Count hands.

Ask: How many people think the location of the house is most important?

Count hands.

Say: Which is correct? Neither! It all depends on the people buying the house. But these are hard decisions, aren't they? Adults make these decisions every time they are looking for a place to live. Remember that in the end, everyone needs to make the best decision for their own family.

Activity B – Monthly expenses (15 minutes)

Materials:

Class/group:

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

Student (one per student):

- Handout A: Monthly Expenses (one per student)
- Colored pencils and/or crayons for each student (6 different colors needed, students can share)

Say: Congratulations! You are going to receive a *pretend* salary of \$1,000 each month!

Ask: What would you like to buy with this money?

Select 2-3 students to share an answer.

Write the answers on the board.

Distribute Handout A to each student.

Say: Take a look at some of the things listed on the handout.

Ask: What categories are on the Handout?

Select 6 students, each reading one category.

Ask: Are there other categories that exist that are not on this handout?

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Select 2-3 student volunteers to share answers.

Prompt students to consider medical, automobile expenses, savings, etc., if they need help with other categories.

Write the answers on the board.

Say: Wow! There are a lot of things to think about every month. But for now, let's stick with the categories listed on the handout.

Ask: Some of these categories already have a dollar amount. About how much will each of these things cost?

Select 4 students to read the categories and dollar amount.

Ask: Which categories do not have a dollar amount?

Select 2 students to answer.

Say: Guess what? These categories do not have costs because you get to decide how much you want to spend on housing and free time—like books, toys or electronics! But before you start deciding, you need to figure out how much money you have left over to spend on these things. Remember, you are getting \$1,000 a month for your pretend salary.

Ask: How much money will you have left over for the housing costs and free time?

Instruct students to subtract to determine the amount of money for housing and free time.

Note: Students can add the expenses first ($\$300 + \$100 + \$200 = \600) and subtract from \$1,000. Or students can subtract each number from \$1,000.

Say: So you have \$400 to spend on housing and free time.

Ask: How much do you want to spend on each?

Instruct students to write their numbers for housing and free time on Handout B.

Remind students that the sum of housing costs and free time must be equal to \$400.

Note: Circulate among students to ensure they are choosing amounts that sum to \$400.

Say: Now it is time to create your own circle graph. Let's choose the colors for each category.

Select 6 students, one at a time, so each chooses a color for a category.

Write the color for each category on the board.

Say: Now copy down the color for each category on your handout.

Distribute colored pencils to students.

Say: Time to start coloring. But wait! Let's color in one category together.

Ask: How many sections are in this circle graph?

Select 1 student to answer that there are 10 sections.

Ask: If your pretend salary is \$1,000, how much do you think each section represents?

Say: On the count of three, everyone quietly say the answer at the same time... 1, 2, 3.

Note: Each section represents \$100.

Ask: If the food category is \$200, how many sections of the circle will you color for food?

Allow 30 seconds of thinking time.

Say: Everyone hold up their fingers to show how many sections should be colored in for food.

Scan the room to be sure each student is holding up two fingers.

Instruct students to color in two sections of the circle graph with the appropriate color to represent food.

Say: Now work on coloring in the rest of the chart. Remember, your sections for housing and free time might be different for your classmate's. You each chose your own amounts for these categories.

Allow 5 minutes for students to color chart.

Say: Now let's compare charts.

Allow students to hold up charts for all to see. Remind them of the colors chosen for housing and free time.

Say: Some students chose the same amount and some did not.

Ask: But is anyone right or wrong in their decision?

Select a few students to respond.

Say: These are personal decisions made by individuals, so there is no right or wrong answer. But wait!

Ask: What would happen if someone wanted to spend \$900 out of the \$1,000 on housing? Is this a good idea?

Select several students to point out that there would not be enough left for food, clothes, and free time.

Say: That's right. So although everyone makes their own decisions, they need to make sure they have enough to cover the basics first. Generally, people shouldn't spend more than \$300 out of every \$1,000 in income on housing payments.

Say: You've seen how to use your income and expenses to determine how much you should spend on a housing payment. Now let's look at buying a house.

Activity C – Principal and interest (5 minutes)

Materials:

Class/group

- Chart paper OR blackboard/whiteboard/overhead projector

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- Markers

Student (one per student):

- Scratch Paper
- Pencil

Ask: Who wants to be the banker?

Pause as hands go up.

Say: You [every student] are all going to be the banker today! I'm going to borrow \$100 from each of you. Now you have to come up with a payment plan for me. How much should I pay back each week? How many weeks do I need to pay this?

Write two columns on board. First column says "Amount of Payment" and second column says "Number of Payments".

Ask: Who wants to tell me what they have decided?

Select 1 student volunteer to answer.

Write payment and number of payments under appropriate columns.

Say: Let's check that this works.

Instruct students to use repeated addition or multiplication to determine total amount repaid. If amount is different from \$100, have student correct one of the numbers.

Ask: Let's get a few more payment plans on the board. Who wants to tell me their payment plan?

Select several students to answer.

Note: Be sure each amount totals \$100.

Say: Now let's talk about how real banks work. The amount of money I had to pay back to each of you bankers is \$100. This is called the principal amount.

Write "principal" on the board.

Say: This is spelled the same way as the principal of your school. When it comes to money, principal is the amount that is borrowed or the amount that is owed. It is called the principal amount.

Write \$100 underneath the word principal.

Say: But when a bank loans you money, they charge you for it. This extra charge is called the interest.

Write interest on the board.

Say: What does this **interest** mean? It means that if you borrow \$100 from the bank, you have to pay back even more than \$100!

Write \$5 underneath interest.

Ask: Why do you think the bank charges interest?

Select 1-2 students to answer.

Say: Banks charge interest on loans because they are doing you a service. It's kind of like you are "renting" the money from the bank.

Ask: Have you even rented anything before?

Select 1-2 students to answer.

Note: If students have no ideas, suggest a bike, ice skates, paddleboat, bowling shoes, etc.

Say: You don't get to keep things when you rent them. A loan from the bank is like renting ice skates. The ice skates are the principal, and the rental fee is like the interest. It's easy to separate principal and interest when it is ice skates and rental fees. But it is harder to think about when you are renting money!

Activity D– Mortgage (10 minutes)

Note: If running short on time, consider skipping this activity and providing an overview of the cost breakdown of a mortgage (principal and interest).

Materials:

Class/group

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

Student (one per student):

- Handout B
- Pencil

Say: Now let's talk about the amount of money a person pays to the bank for a mortgage.

Write mortgage on the board.

Say: A **mortgage** is a loan that is used to buy a house. A mortgage is the whole amount that needs to be paid back. That means a mortgage includes the principal and the interest.

Write "mortgage = principal + interest" on the board.

Distribute Handout B to each student.

Say: You are going to buy a house! This house costs \$75,000. The bank has decided on a payment plan for the mortgage. The payment plan is written on the handout.

Ask: How much money must you pay the bank each month?

Select 1 student to answer.

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Ask: How many years will you be paying?

Select 1 student to answer.

Write answer on board.

Say: Notice the bank is asking you to pay \$500 each month, so we need to figure out how many months there are in 20 years.

Ask: How many months are in 1 year?

Select 1 student to answer or have group respond all together (choral response).

Instruct students to write 12 on handout in appropriate space.

Ask: How many months are in 20 years?

Instruct students to use repeated addition or multiplication to calculate $12 \times 20 = 240$.

Say: Now let's calculate how much you will be paying the bank in one year.

Ask: Does anyone know what we need to multiply to figure out how much is paid back in 1 year?

Select 1 student to answer 500 times 12.

Instruct students to answer questions 1 through 3 individually or in groups.

Allow 2-3 minutes for completion of questions 1-3.

Note: The skill level of students will dictate how to proceed. Students with difficulty multiplying may benefit from a class discussion on how to multiply $500 \times 12 = \$6,000$; then 500×120 or simply $6,000 \times 10 = \$60,000$; then double \$60,000 for 20 years or multiply \$60,000 by 2 = \$120,000. If students are having difficulty, complete the questions as a class.

Say: Let's answer questions 4 and 5 together. Remember that the mortgage payments are the principal and interest.

Ask: What is the total amount you paid in mortgage payments?

Prompt students if needed with a hint to look at the answer to #3.

Select 1 student to answer \$180,000.

Ask: What was the original cost of this house?

Select 1 student to answer \$100,000.

Say: So the principal amount is \$100,000.

Ask: How much interest will be paid?

Instruct students to subtract \$100,000 from \$180,000 to get \$80,000.

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Say: Wow! It cost an extra \$80,000 in interest to buy a \$100,000 house! But that is what it costs to rent the money from the bank.

Ask: What do you think about that?

Allow several students to give responses.

Say: There are a lot of things that can make that \$80,000 in interest to be lower or higher. For example, if the rate or percent of interest goes up, then the interest is higher. If the number of years to pay the mortgage goes up, then the interest will go up. If you borrow the money for a longer period of time, it will cost more. It's very important to understand how much you are paying for interest when you buy a house.

Closing reflections (5 minutes)

Say: I want you all to take a minute to think about what you learned about buying a house. What was the most surprising thing you learned? What was the most interesting? What would you tell a friend that you learned about buying a house?

Allow 3 minutes for students to jot down their answers/thoughts.

Say: It has been really fun working with you. I want you to remember everything we talked about today so that if you ever buy a house, you'll remember to think about your income and expenses along with the interest you will be paying.

Evaluation/assessment of student learning

During lesson/in-class

- Students state the difference between principal and interest
- Students analyze income and expenses to determine an appropriate amount to spend on housing
- Students calculate the total cost of principal and interest on a mortgage using the monthly payment and length of mortgage

Ideas for post-lesson assessments

- Students take a quiz on key terms from the lesson: income, expense, principal, mortgage, and interest.
- Students create a circle chart for monthly expenses using different categories and dollar amounts to show how housing must fit within the monthly income.

Extensions/enrichment

- Students can search for home prices online or in the newspaper to determine the cost of current housing. Students take note of how characteristics of each home determine the price of the home.
- Students can track their spending habits for one month. At the end of the month, students can review their expenses and determine ways to reduce expenses.

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