

Futures Farming

Grade Level: High School

Approximate Length of Activity: One to two class periods

Objectives:

Teacher:

1. Provide necessary background information for students to complete the accompanying activity.
2. Do any necessary research and preparation to complete the accompanying activity.

Students:

1. Demonstrate an understanding of marketing farm commodities by selling corn (represented by M&M's[®] candy) for a profit.
2. Demonstrate the ability to equate simple math functions, i.e., multiplying, subtracting, and adding.
3. Observe the challenges a farmer faces when marketing corn by completing a hands-on activity.
4. Define the following terms: commodity, acre, bushel, futures, expenses, profit, and crop.

Illinois Learning Standards: 10.C.4a; 15.D.4a; 15.D.4c; 16.C.5a; 16.C.4a; 18.C.4b

Introduction:

A lot of planning goes into the sale of a farmer's crop. In order to make the most money, a farmer must predict when he will receive the best prices for his or her crop, even before the crop is harvested. This is called "futures" because the prediction the farmer makes is based on the future. The futures market can be both complicated and risky. In this activity, students will see if they are good predictors with their "crop" in hopes of making the most money.

Share these definitions with your students before starting the activity:

Futures: Commodities or stocks bought or sold upon agreement of delivery at a later time. A farmer only gets paid when he or she sells a crop. That payment may only be once a year (after harvest in November) or if he or she sells the crop before it is harvested – "future."

Crop: The total yield of agriculture produced in a given season or place.

Commodity: A commercial article, especially an agriculture or mining product, that can be transported.

Acre: Portion of land about the size of a football field

Bushel: How the crop is measured; can be measured by weight or amount.

Expenses: Items the farmer must pay for in order to stay in business.
Examples: electricity, gasoline, taxes, chemicals.

Profit: Amount of money made after expenses are paid.

Materials Needed:

- "Futures Farming" worksheet
- 1 bag of M&M's[®] candy (1.4 oz., usually found in the checkout aisle in most grocery stores) for each student
- Calculator (optional)

Activity Outline:

1. Introduce the "Farmers Dilemma" activity by reading the introduction at the beginning of this lesson. Then place the terms given in the introduction on the board or overhead. Define the terms as a class or have the students do this individually.
2. Pass out the bags of M&M's[®] and the worksheets. *Do not open the M&M's[®]! Using their worksheet and candy, students need to estimate how many M&M's[®] of each color they think might be in their single bag before opening it.
3. Move on to Step 2 on the worksheet and have students multiply their predictions by 3. Green M&M's[®] will be multiplied by 5.
 - a. Once the students have their totals, they now have bushels of corn that they can sell.
 - b. This is a good time to talk about how many bushels of corn a farmer produces in one acre. (In Illinois, 129 bushels of corn is the average yield per one acre. Overall in the U.S., the average is about 127 bushels.)
4. Discuss the term "futures" that the students defined earlier. A farmer has the opportunity to sell his/her crop before he/she harvests it. For example, if the farmer thinks he might have 150 bushels of corn to sell in the fall, he might sell 100 bushels ahead of time at a higher price.
 - a. Why wouldn't the farmer want to sell all 150 bushels at the better price?
Answer: There might be a drought, flood, or wind damage that could hurt the farmer's yield OR he/she might not harvest 150 bushels of corn. In order to make money, that farmer must have the number of bushels he/she sold ahead of time, otherwise he loses money. It is like borrowing money... someday you have to pay it back. *Remember the farmer is taking a risk like the students are doing with their candy. Imagine taking a risk with thousands of dollars, not just candy.
5. Complete Step 3 on the worksheet.
6. Have students open their M&M's[®]. *No snacking yet. Complete Step 4 on the worksheet. Students may eat their candy when the directions on the sheet indicate to do so.
7. Complete Step 5 and finish the activity.

Discussion Questions:

1. How many of you realized that a farmer only makes money at certain times of the year?
2. How is the method of payment different than when some of your parents receive their paychecks?
3. What are some school subjects a farmer must be familiar with or understand well?
4. How would budgeting funds come into play in a farmer's family life?

Related Activities:

1. Introduce the term "grain elevator" which is where the farmer sells his corn. If possible, have an elevator manager come and speak to the class or arrange a visit to a grain elevator.
2. Contact your county Farm Bureau® for free copies of The Corn Ag Mag from Illinois Farm Bureau® Agriculture in the Classroom. This issue contains information on corn production, renewable resources, types of corn, corn processing, corn uses, and career information.

Futures Farming

Step 1: Do not open your bag of M&M's[®] yet. Predict how many of each color of M&M's[®] candy you will get in your bag. You will have approximately 55-60 M&M's[®] in the bag.

Blue _____ Brown _____ Red _____ Orange _____ Yellow _____ Green _____

Step 2: Now multiply your predictions by 3 except for the green candies, which you will multiply by 5 because it is a special commodity.

Blue = _____ bushels of corn Orange = _____ bushels of corn
Brown = _____ bushels of corn Yellow = _____ bushels of corn
Red = _____ bushels of corn Green = _____ bushels of corn (multiply by 5)

Step 3: Would you like to sell your corn before you harvest it and get a premium price for your commodity? Let's say your teacher will pay \$2.30 now or \$2.00 once you open your bag. Your teacher will also pay \$2.40 for green M&M's[®] or \$2.20 after the bag is opened.

Pre-sold corn: Place the number you wish to sell in the first blank.

Blue: _____ x \$2.30 = _____

Brown: _____ x \$2.30 = _____

Red: _____ x \$2.30 = _____

Orange: _____ x \$2.30 = _____

Yellow: _____ x \$2.30 = _____

Green: _____ x \$2.40 = _____

Total Sold: _____

Total Made: \$ _____

Step 4: Open your bag, but don't eat the candy yet. Count how many actual M&M's[®] you have of each color. You may eat the ones you have already sold in Step 3 or put them aside. Record how many M&M's[®] you have of each color below, but do not include the ones that were pre-sold and eaten.

Blue: _____ Brown: _____ Red: _____

Orange: _____ Yellow: _____ Green: _____

Take the information you obtained in Step 4 and use it below to find out how much money you made on the M&M's[®] that were not pre-sold.

Blue: _____ x \$2.00 = _____

Brown: _____ x \$2.00 = _____

Red: _____ x \$2.00 = _____

Orange: _____ x \$2.00 = _____

Yellow: _____ x \$2.00 = _____

Green: _____ x \$2.20 = _____

Total Made: \$ _____

Add together the totals you made either from selling your corn at \$2.30 or \$2.00 (or green candies at \$2.40 or \$2.20).

You may eat the rest of the candy you have left.

Overall total: \$ _____

Step 5: Did you oversell any corn? (circle one) Yes No

If yes, by how much? _____ x \$2.30 = _____

_____ x \$2.00 = _____

Subtract your answer from your overall total:

Overall total \$ _____ - (total oversold) _____ = \$ _____

If no, write how much you made: \$ _____