



DOLLAR DISTRIBUTION

Grade Level

4-8

Length of Lesson

45 minutes

Objective

By the end of this lesson, students will understand the industries in the food supply chain and be able to differentiate between farmers' income when they sell at the supermarket versus a farmers market.

Materials Needed

- *Dollar Distribution* student activity sheets (1 per student)
- *Dollar Distribution* student worksheets (1 per student)
- 1 copy of *Dollar Distribution Story*
- Baggies of 100 of something (i.e.—pony beads, bingo chips, pennies, etc.) (1 per student)
- Calculators (1 per student)

Standards

Common Core

CCSS.Math.Content:
3.NBT.A.1, 4.NF.C.6,
4.MD.A.2, 6.RP.A.3.C

Lesson Summary

This lesson is a fun, hands-on activity designed to help students understand the food supply chain and the industries involved in getting food from the farm to their dinner table. It is also a creative way to advocate for purchasing food locally at farmers markets or within CSAs (Community-Supported Agriculture).

Suggested Sequence of Events:

1. **Set Up:** Prepare baggies of 100 of a small object (i.e.—pony beads, bingo chips, pennies, etc... anything you have lying around!). You will need one baggie per student in your group. These will simulate the 100 pennies in a dollar.
2. Read through the IAITC Farmers Market Ag Mag to learn more about farmers markets and shopping locally! Interactive online versions can be found on our website. Other suggested readings: *On the Farm, At the Market* by G. Brian Karas.
3. Complete the activity following the procedures:
 - Give each student a *Dollar Distribution* student activity sheet as well as a baggie of 100 “pennies.”
 - Read aloud the *Dollar Distribution Story* to the students, starting with the Supermarket side.
 - As you read, students should follow along with you on the Supermarket side of their student activity sheet, depositing the correct amount of “pennies” into each supply chain industry’s “piggy bank.”
 - At the end of the Supermarket story, have students count their remaining “pennies” and deposit them into the Farmers Share mason jar. They should have **16 pennies** in the Farmers Share.
 - Conduct a class discussion using the questions below.
 - Direct students to answer the questions on the top half of their *Dollar Distribution* student worksheet.
 - When discussion has concluded, have students carefully collect all their “pennies” once again and put them back in their baggies. Flip over your *Story* sheet and have the students flip over their student activity sheets so everyone is now on the Farmers Market side.
 - Using the same procedures above, read through the story and have students deposit their “pennies” in the piggy banks for the industries on the Farmers Market side of their activity sheet.
 - At the end of the story, have students count their remaining “pennies” and deposit them into the Farmers Share mason jar. In this scenario, the farmer should receive **90 pennies**.
 - Conduct a class discussion using the questions below.
 - Direct students to answer the rest of the questions of their *Dollar Distribution* student worksheet.
4. Whole class discussion and reflection of activity.

TEACHER RESOURCES

Pre-Activity Discussion Questions:

- Where do you buy most of your food?
- Other than the farmer, who else do you think is involved in getting food from the farm to your grocery store/supermarket?
- Out of each dollar spent at the supermarket, how much do you think the farmer who grew the food gets?

Mid-Activity (end of Supermarket scenario) Discussion Questions:

- Which supply chain industry receives the *most* money in the food supply chain?
- Which supply chain industries surprised you?
- Do you think the farmer is getting their fair share? Why or why not?

Mid-Activity (end of Farmers Market scenario) Discussion Questions:

- Which supply chain industry receives the *most* money in this food supply chain?
- Do you think the farmer is getting their fair share? Why or why not?
- What would be the pros and cons for a farmer selling at a farmers market instead of a supermarket?

Post-Activity Discussion Questions:

- Where should a farmer sell their food if they want to make the most money in the quickest amount of time?
- Why would a farmer *not* want to sell at a farmers market?
- What are ways that you can support your local farmers better?

Extension Ideas:

- Visit a local farmers market and talk to real farmers about their experiences!
- For higher level students, extend upon the math questions on the student worksheet or do not give them the formulas up front.
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

Answer Key for Student Worksheet:

- 1.1: $16 / 100 = 0.16 \times 100 = 16\%$
1.2: $50,000 / 0.16 = \$312,500.00$
2.1: $90 / 100 = 0.90 \times 100 = 90\%$
2.2: $50,000 / 0.90 = \$55,555.56$
3: Farmers Markets

Lesson Data Sourced From:

[USDA Economic
Research Service:
Food Dollar Series](#)



DOLLAR DISTRIBUTION

STUDENT WORKSHEET

DIRECTIONS:

1. When instructed, solve the math problems below.
2. Check your work with your teacher.

1. SUPERMARKET:

1. What percent of each dollar spent at the supermarket does the farmer receive?

$$\frac{\boxed{} \text{ # of pennies in Farmers Share}}{100 \text{ # of pennies in \$1}} = \boxed{} \text{ decimal} \times 100 = \boxed{} \%$$

2. The farmer needs to purchase a new tractor for their farm. The tractor will cost \$50,000. How many dollars of food will the farmer have to sell at the supermarket in order to be able to afford the tractor?

$$\frac{\boxed{} \text{ cost of tractor}}{\boxed{} \text{ \% of each dollar received by farmer (in decimal form)}} = \boxed{\$ }$$

2. FARMERS MARKET:

1. What percent of each dollar spent at the farmers market does the farmer receive?

$$\frac{\boxed{} \text{ # of pennies in Farmers Share}}{100 \text{ # of pennies in \$1}} = \boxed{} \text{ decimal} \times 100 = \boxed{} \%$$

2. The farmer needs to purchase a new tractor for their farm. The tractor will cost \$50,000. How many dollars of food will the farmer have to sell at the farmers market in order to be able to afford the tractor?

$$\frac{\boxed{} \text{ cost of tractor}}{\boxed{} \text{ \% of each dollar received by farmer (in decimal form)}} = \boxed{\$ }$$

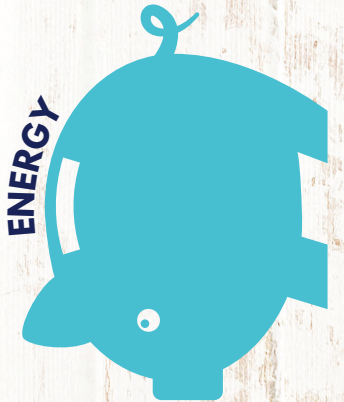
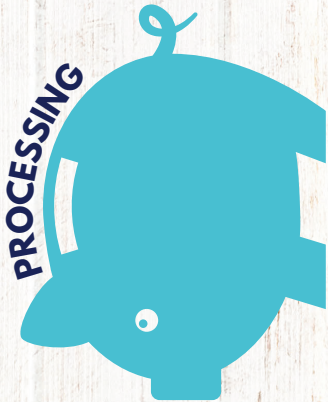
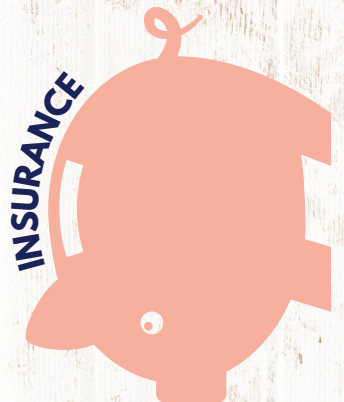
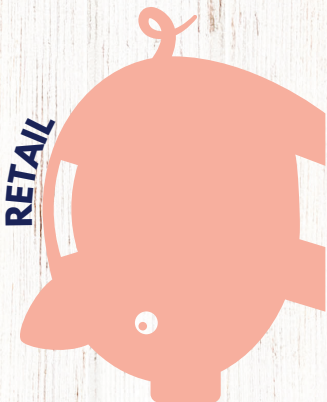
3. Where should a farmer sell their food if they want to be able to afford the tractor sooner?

DOLLAR DISTRIBUTION



WHEN I SHOPPED AT THE

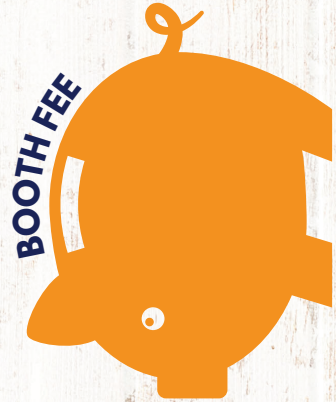
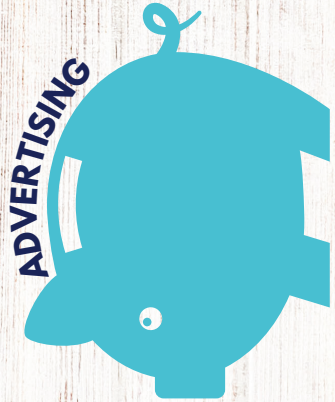
SUPERMARKET



DOLLAR DISTRIBUTION

WHEN I SHOPPED AT THE

FARMERS MARKET



Today we will be following a bushel of field corn on its way to becoming a bag of corn chips for you to enjoy! When we shop at the supermarket, each dollar we spend is split up between different industries in the food supply chain, and the farmer who grew the food gets what is left. In front of you is a baggie of 100 "pennies," representing the dollar you spent at the supermarket. As I read through the story, please "deposit" the correct amount of money in each industry's piggy bank.

At the end, we will see how much the farmer gets!



START HERE!

After the field corn is harvested, it is taken to a processing facility, where it is ground into flour, baked into chips, and seasoned to perfection. Please deposit 16 cents into the **PROCESSING** piggy bank.

Once the chips are formed, they are packaged into foil chip bags. Please deposit 3 cents into the **PACKAGING** piggy bank.

Along its entire journey, the food is transported by truck, plane, rail, or ship. Please deposit 4 cents into the **TRANSPORTATION** piggy bank.

Some of the chips from the warehouse are shipped to restaurants, who will sell them to customers or use them as they cook their meals. Please deposit 27 cents into the **FOOD SERVICE** piggy bank.

Your grocery store orders chips from the warehouse and they arrive at your store for you to purchase. Please deposit 14 cents into the **RETAIL** piggy bank.

The packaged chips arrive at a regional warehouse, where they will stay until your grocery store places an order. Please deposit 12 cents into the **WHOLESALE** piggy bank.

All of these steps in the food supply chain require electricity, and the electric companies need to get paid, too! Please deposit 3 cents into the **ENERGY** piggy bank.

Just in case of accidents, it is important to have insurance which will cover you if something bad happens. Please deposit 3 cents into the **INSURANCE** piggy bank.

The chip company must also spend some money on advertising to make sure customers will continue to purchase their chips! Please deposit 2 cents into the **ADVERTISING** piggy bank.

We have arrived at the end of the food supply chain! Now that all of the other industry groups have been paid, we know how much the farmer made on this dollar! How much money is left over? Please deposit it into the **FARMER'S SHARE** mason jar.

Now, we will see where the money goes when we shop at our local farmers market instead of a supermarket! Find your baggie of 100 "pennies," representing the dollar you spent at the farmers market. As I read through the story, please "deposit" the correct amount of money in each industry's piggy bank. At the end, we will see how much the farmer gets!



START HERE!

Some farmers sell processed goods at the Farmers Market, such as soaps, jellies, or baked goods. These farmers must do all of this processing by hand!
Please deposit 2 cents into the PROCESSING piggy bank.

Farmers will also need to purchase containers, jars, & baggies, for berries, small vegetables, and processed goods to sell at the Farmers Market!
Please deposit 2 cents into the PACKAGING piggy bank.

The average farmer travels 61 miles to get to the Farmers Market! They must spend some money on gas and vehicle maintenance.
Please deposit 2 cents into the TRANSPORTATION piggy bank.

With no corporations to take care of advertising, farmers selling at Farmers Markets put in their own hours to bring customers to their booth!
Please deposit 2 cents into the ADVERTISING piggy bank.

Just in case of accidents, these farmers will also need to have insurance which will cover them if something bad happens.
Please deposit 1 cent into the INSURANCE piggy bank.

Lastly, in order to secure their spot at the Farmers Market, each farmer pays a small booth fee to the market manager.
Please deposit 1 cent into the BOOTH FEE piggy bank.

We have arrived at the end of the local food supply chain! Now that all of the other industry groups have been paid, the farmer who grew the food can have their share!
How much money is left over?
Please deposit it into the FARMER'S SHARE mason jar.