



STRAWBERRIES

Strawberry Tunes

A lesson plan for fifth graders



LESSON PLAN OVERVIEW



Purpose

To help students understand the importance of strawberry production in North Carolina and how it relates to the US economy.

Subject Areas Addressed

Math, Social Studies

Common Core/Essential Standards

MATH:

CC 5.NBT.5: Numbers and Operations: Fluently multiply multi-digit whole numbers using the standard algorithm.

5.MD: Convert like measurement units within a given measurement system.

SOCIAL STUDIES:

ES 5.E.1 Econ: Understand how a market economy impacts life in the United States.

Vocabulary

acre annuals consumer economy expense perennials plasticulture producer production

Materials Provided

Student Activity Cards 1-3, and iPod Sales Flyer

Materials Needed

ART SUPPLIES: Crayons, markers, paint, etc.

TEACHING STRATEGY



Preparation

- Print “Student Activity Cards” using a different color for each tier.
- Example: Tier 1 on yellow paper; Tier 2 on green paper; Tier 2 on blue paper.
- After assessing the tier needed for each student, match activities to students’ needs and label accordingly.

Instructions

1. DISCUSS HOW STRAWBERRIES ARE GROWN

Give each student a fresh strawberry. If fresh strawberries are not available, show students a picture of fresh strawberries. Ask the students if they know how strawberries are grown. Discuss this process. Review and discuss vocabulary words above as they relate to how strawberries are produced in NC.

- **Producer:** A person who creates economic value, or produces goods and services. Ask “What kinds of goods can be produced using strawberries?” (jams, candy, ice cream, etc.) Ask students to identify people in their community are producers.
- **Consumer:** A person or organization that uses a commodity or service. Discuss people and organizations that use strawberries and for what purposes.
- **Acre:** A unit of land measure, equal in the US to 43,560 square feet. Relate the size of an acre to the size of a football field. One acre is slightly less than one football field without the end zones. Lead students to understand that farmers do not plant small strawberry beds as your class is doing, but they plant one ore more acres of strawberries.
- **Expense:** A cost or charge.

2. TASK CARD ACTIVITY

Inform students that they will complete an activity to determine if they can produce and sell enough strawberries to reach a specific goal. Students will need to complete the math problem and refer to “iPod Sales Flyer” to determine if the goal is attainable. Students may work in pairs or small groups to complete task. Tiered Assignments for differentiated instruction. Please choose appropriate level of task activity for individual students.

- **Tier 1:** Students struggling with the basic skills and concepts.
- **Tier 2:** Students exhibiting basic understanding of the basic skills and concepts.
- **Tier 3:** Students understanding the basic skills and concepts above and beyond the expected requirements.

Pass out the Student Activity Cards on page 5 and allow students time to complete their problems. Discuss their results. Are students able to purchase an iPod? Why or why not? What other kinds of activities can you do on “Best Berry Farms” to earn extra money?

3. DISCUSS LIFE OF A FARMER

- Ask students to imagine what life would be like without strawberry farmers.
- Conduct a class discussion on the topic and then have them write a paper in which they discuss what life would be like without strawberry farmers—or without any farmers.

FACTS + INFORMATION

Background Information

Commercial strawberry varieties are a cross of two wild American strawberry species. Most kinds of strawberries are sensitive to day length—the amount of daylight determines when the plants flower. They will grow in a wide variety of soil types. They require full sunlight and prefer cool weather.

In North Carolina, most commercial strawberry growers set out their plants in the fall and harvest the following spring. They plant on raised beds covered with black plastic and mulch and grow the strawberries as annuals. The plants stay in the ground for only one production cycle and then are removed and new plants are set out for the next year's crop. This system of plasticulture production was first adopted by NC growers in the late 1980s.

Home gardeners often follow an older system called matted row. They plant in spring, and raise their strawberries as perennials, leaving their plants in the ground for three or more years and letting them spread out and multiply.

School strawberry gardens work well following the same plasticulture system that commercial growers use because the bed(s) can be planted and harvested during a traditional school year. Like commercial growers, school gardeners use black plastic and mulch to keep the soil warmer in the winter and spring, prevent weeds, and keep moisture in the soil. They also use the same kind of row covers that student gardeners use to protect strawberry plants and flowers from cold snaps.

North Carolina Strawberry Production

North Carolina ranks either third or fourth in strawberry production in the U.S., depending on how data is reported. California is the leading producer, raising more than 80 percent of the crop. Next is Florida, with about 11 percent of the crop. Then comes Oregon and North Carolina. Oregon's crop is mostly used for processing (for example, into jam, yogurt, or ice cream), while North Carolina's is mostly sold right here in the state directly to consumers—the people who will eat them—as whole, fresh berries.

In 2010, North Carolina had about 1,600 acres in strawberries, producing approximately 19.5 million pounds of fruit for a total farm income of about \$24.3 million. NC strawberry farmers set out about 15,000 plants per acre of strawberries and harvest 18,000 to 28,000 pounds of fruit per acre.

STRAWBERRY FACTS AND TRIVIA

- The strawberry is a member of the rose family (so are apples, peaches, and blackberries).
- The flavor of a strawberry is influenced by weather, the variety, and how ripe it is when it is picked.
- The green leaves at the top of the berry are called the calyx.
- When you pick strawberries, you should pinch the stem between your thumb and forefinger and pull with a twisting motion leaving the calyx on the fruit.
- Don't wash strawberries until you are ready to eat them.
- The strawberry is the only fruit with the seeds on the outside of the fruit.
- There are about 200 seeds on a strawberry.
- One cup of strawberries has only 55 calories.
- Strawberries are high in Vitamin C.

EXTENSION ACTIVITY MATERIALS

Student Activity Card 1

DIRECTIONS

Read and solve the problem presented below.
Show your work in the space at the bottom of the page.
Be sure to answer “yes” or “no” to the question, then show your work.

PROBLEM

You are a farmer, owner and operator of Best Berry Farms. Last week, you picked and sold 83 buckets of strawberries. Each bucket sold for \$4.00. Half the money you collected must go towards expenses, but you can spend the other half towards purchasing an iPod. Do you have enough money to purchase an iPod? Examine the sales flyer for iPod prices. Solve and show your work. EXPLAIN your answer. Then design a flyer advertising Best Berry Farms.

Student Activity Card 2

DIRECTIONS

Read and solve the problem presented below.
Show your work in the space at the bottom of the page.
Be sure to answer “yes” or “no” to the question, then show your work.

PROBLEM

You are a farmer, owner, and operator of Best Berry Farms. You have 2 acres of strawberries. Each acre can produce 300 pounds of strawberries. Last week, you sold all the strawberries except 250 pounds at \$2.75 per pound. You paid \$374.00 in expenses, saved \$243.00. Do you have enough money to purchase an iPod? Examine the sales flyer for iPod prices. Solve and show your work. EXPLAIN your answer. Then design a flyer advertising Best Berry Farms.

Student Activity Card 3

DIRECTIONS

Read and solve the problem presented below.
Show your work in the space at the bottom of the page.
Be sure to answer “yes” or “no” to the question, then show your work.

PROBLEM

You are a farmer, owner, and operator of Best Berry Farms. You have decided to produce homemade strawberry jam. Your farm workers picked 360 quarts of fresh strawberries last week to make the jam. It takes 6 quarts of fresh strawberries to make 5 pints of jam. How many pints of jam can you make if you use half the strawberries picked? _____ You sold 123 pints of jam for \$4.00 each. After you pay \$239.00 in expenses, will you have enough money to purchase an iPod? Examine the sales flyer for iPod prices. Solve and show your work. Explain your answer. Then design a flyer advertising Best Berry Farms.

EXTENSION ACTIVITY ASSESSMENT

Assessment Key

Collect activity cards and answer sheets. Use this key to check for accuracy.

STUDENT ACTIVITY CARD 1

$$83 \times \$4 = \$332$$

$$\$332 / 2 = \$166$$

No, not enough money. The iPod is \$199.99

STUDENT ACTIVITY CARD 2

$$300 \times 2 = 600$$

$$600 - 250 = 350$$

$$\$350 \times \$2.75 = \$962.50$$

$$\$962.50 - \$374 = \$588.50$$

$$\$588.50 - \$243 = \$345.50$$

Yes, there is enough money to purchase the iPod.

STUDENT ACTIVITY CARD 3

$$360 / 2 = 180 \text{ quarts of fresh strawberries for jam}$$

$$180 / 6 = 30 \text{ recipes of jam}$$

$$30 \times 5 = 150 \text{ pints of jam}$$

$$123 \times \$4.00 = \$492 \text{ total sales}$$

$$\$492.00 - \$239.00 = \$253.00 \text{ total after expenses}$$

Yes, there is enough money to purchase an iPod.



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 Demo

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The most popular iPod is now even better. Along with the revolutionary Multi-Touch interface and Wi-Fi Web browsing, the iPod touch now includes HD video recording, FaceTime camera and the highest resolution iPod screen ever. Plus, the new Game Center feature enhances your game play.

Product Features

- 8GB* internal flash memory stores up to 1,750 songs, up to 10,000 digital photos (iPod viewable photos transferred from iTunes), or up to 10 hours of video
- Multi-Touch interface, 3.5" widescreen display
- Built-in Wi-Fi lets you surf the Web, send e-mail, update your Facebook status, chat using AIM, and so much more (internet connection required)
- HD video recording
- Retina display - 4x pixels, 326 ppi, 24-bit color, LED

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- *Formatted capacity may vary. Results will vary based on file size and format, settings, features, software and other factors.

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