



Popcorn Worksheet

Objective:

Students will be able to solve mathematical problems that are common in the agriculture industry. Students will be able to convert basic measurements.

Indiana Academic Standards

Mathematics – Grade 8

Number Sense

8.C.1 - Solve real-world problems with rational numbers by using multiple operations.

National Agricultural Literacy Outcomes

Science, Technology, Engineering & Mathematics Outcomes

T4.9-12f - Predict the types of careers and skills agricultural scientists will need in the future to support agricultural production and meet the needs of a growing population.

Materials:

- Writing Utensil
- Student Worksheet



Name: _____



Activity: Do you enjoy math? Do you enjoy solving problems? There are several careers in agriculture that use multiple mathematical operations to solve problems. Agriculturists have a big job figuring out how to meet the demand for food especially as the population continues to rise.

Farmers practice math skills every day within their careers, an example is calculating acreage. A farmer must know the conversion of square feet to acres. This is a valuable tool for selling purposes, determining rates of fertilizers and to generate reports for season yields. They also use these equations to sell or purchase land.

Solve the following math problems to help these popcorn farmers. Round to the nearest tenth.

Note: There are 43,560 square feet in an acre.

1. How many acres are in a popcorn field that is 5,280 feet long and 7,920 feet wide?

2. A popcorn farmer brought a plot of land to expand his operation. This plot of land is 2,640 feet long x 1,287 feet wide and sold for \$159,900. What is the price per acre?

3. A high school agriculture student wants to start a popcorn business for his/her supervised agriculture experience (SAE). What is the cost of a field that is 132 feet x 330 feet at \$800 per acre?

4. A popcorn test plot was measured in yards and needs to be converted to feet. The test plot is 60 yards wide by 120 yards in length. Calculate the square footage of the popcorn test plot.

5. Calculate the square footage and acreage of a popcorn plot that is 82 feet, 9 inches wide by 157 feet, 8 inches length.



Teacher Answer Key

1. $5,280 \times 7,920 = 41,817,600 / 43,560 = 960$ acres
2. $2640 \times 1287 = 3,397,680$ sq. ft./ $43,560 = 78$ acres
 - a. $\$159,900 / 78$ acres = $\$2,050.00$ price per acre
3. $132 \times 330 = 43,560 = 1$ acre: $\$800$
4. $60 \times 3 = 180$ feet wide
 - a. $120 \times 3 = 360$ feet length
 - b. $180 \times 360 = 64,800$ square feet.
5. $9'' / 12 = 0.75 + 82 = 82.75$ feet wide
 - a. $8'' / 12 = 0.67 + 157 = 157.67$ feet length
 - b. $82.75 \times 157.67 = 13,047.19$ square feet or .30 acres

Once the students have this solved, they get the puzzle piece for popcorn.

Background Information:

- Clay County Indiana is where Orville Redenbacher grew up.
- Indiana is ranked 2nd in the production of popcorn in the United States.
- Popcorn is very important to not only Indiana, but the United States as well. Most of the popcorn eaten around the world comes from the United States.
- Americans eat enough popcorn every year to fill the Empire State building 18 times.
- Nebraska produces the most popcorn in the United States.

Careers:

Agronomist, soil scientist, seed salesman and grain elevator operator