

Objective

Students will be able to multiply a fraction by a whole number within word problems.

Warm-up

Elizabeth has a salad. In her salad she has $\frac{1}{6}$ carrots, $\frac{3}{6}$ lettuce. If the remainder of her salad is cucumbers, what is the fraction for the amount of cucumbers in Elizabeth's salad?

Answer: $\frac{2}{6}$ cucumbers

Grade Level: 4

Subject Area: Math / Science

Materials:

How Groundhog's Garden Grew by Lynn Cherry

Array of 12 x 3 copy for each student and teacher

Standards:

4.NF.4

4.L.1.2

Collaborators:

Kristin Head

Elizabeth Rodgers

Mini Lessons

1. Today we are going to continue working with fractions by learning how to multiply fractions. We are going to focus on math with our book, *How Groundhog's Garden Grew*. We are going to create an idea of what Squirrel's and Groundhog's garden may have looked like.

Strategies to use when multiplying fractions:

- Visual models
 - Number line
 - Double check by putting a one underneath the whole number and multiply across.
2. The teacher and students will have an array of 12 x 3 blank garden grid and the teacher will model to the students what Squirrel and Groundhog's garden may have looked like while showing how to multiply fractions.

I Do

Squirrel and Groundhog found some pumpkins and dried out the seeds for their garden. Squirrel decides to help Groundhog by setting up her garden with 36 square feet. Within Groundhog's garden, they plant $\frac{1}{12}$ of the garden with pumpkin seeds. How many square feet of Groundhog's garden will be planted with pumpkins?

The teacher will model how to solve the question and then fill in 3 parts of the array for pumpkin. Students will also fill in the 3 parts for pumpkin in their array.

Answer: 3 square feet

We Do

Squirrel and Groundhog also planted sweet potatoes for Groundhog's garden. Groundhog decided she wanted to plant $\frac{1}{6}$ of her 36 square foot garden with sweet potatoes. How many square feet of Groundhog's garden will be planted with sweet potatoes?

Answer: 6 square feet

Students will turn and talk with a partner or group about what strategies they want to use to help them get started. Students will then solve this question with a partner. The teacher will then review the answer with the students. Students and teacher will fill in 6 parts of the array for sweet potatoes, adding to the 3 pumpkin parts.

You Do

Groundhog now decided to plant some onions in her 36 square foot garden. Groundhog decides to plant $\frac{1}{9}$ of her garden with onions. How many square feet of Groundhog's garden is now full of onions?

Answer: 4 square feet

Students will now solve this question independently. Students will also fill in four square feet for onion in their garden array.

Independent Practice

Students will now complete the day's task by designing the rest of Groundhog's garden with the remaining vegetables.

Groundhog's Garden

Name: _____

1. Groundhog now wants to fill $\frac{1}{3}$ of the 36 square foot garden with peppers.

How many square feet will contain peppers? _____

2. Tomatoes are now added to $\frac{1}{9}$ of Groundhog's garden for her Thanksgiving feast.

How many square feet are planted with tomatoes? _____

3. $\frac{2}{12}$ of Groundhog's garden is planted with cantaloupes.

How many square feet will contain cantaloupes? _____

4. Now that most of Groundhog's garden is complete, Groundhog is going to plant the remaining area of the garden with cucumbers.

How many square feet will Groundhog use to plant cucumbers?
