

### Math Parent Letter

We are so excited to continue our work with fractions. In the unit, students will multiply a whole number by a fraction. Models are very important in Unit 5. It is important that your child can interpret and create models.

### UNIT 5 GOALS:

- Model multiplication of a whole number by a fraction.
- Understand that the multiplication of fractions is similar to multiplication of whole numbers.
- Represent fractions in a variety of ways.

### VOCABULARY

**Decompose** – change a non-unit fraction or mixed number to the sum of its parts or unit fractions.

**Mixed Number** – number made up of a whole number and a fraction.

**Numerator** – top number in a fraction – tells how many equal parts are being described by the fraction.

**Denominator** – bottom number in a fraction – indicates the number of equal parts in which the whole is divided.

**Unit Fraction** – a fraction with a numerator of 1.

### Resources for Unit 5



### Repeated Addition of Fractions as Multiplication

Multiplying a whole number times a fraction can be thought of as repeated addition. In the example below, you are multiplying 3 groups of  $\frac{1}{5}$

$$3 \times \frac{1}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{3}{5}$$

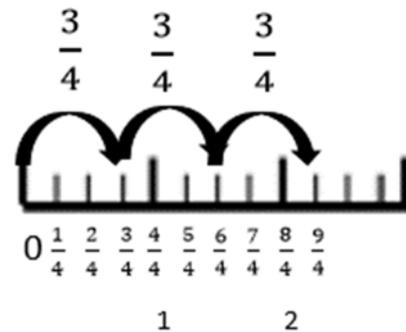


### Multiplying Fractions by Whole Numbers

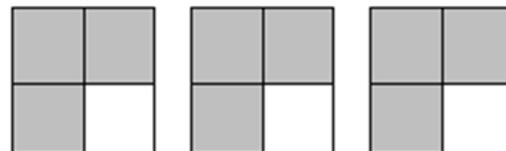
Jake bought three kinds of pizza for a party. Each pizza was the same size. People were not very hungry, and at the end of the party, there was  $\frac{3}{4}$  of each pizza left. How much pizza was left in all?

What equation could represent this problem?  $3 \times \frac{3}{4} =$

One way to solve this problem would be to represent it on a number line.



Another way would be to draw a picture.



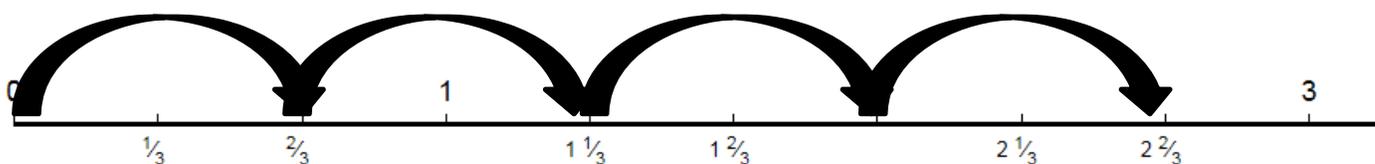
$$3 \times \frac{3}{4} = \frac{9}{4} \text{ or } 2 \frac{1}{4}$$

Mrs. Smith bought some orange juice. Each member of her family drank  $\frac{2}{3}$  cup for breakfast. There are four people in her family. How many cups of orange juice did they drink in all?

To start you need to decide how many groups of  $\frac{2}{3}$  will be shown on the number. In this word problem, it tells us that there are four people in Mrs. Smith's family.

We would write our problem as  $4 \times \frac{2}{3} =$

The number line below shows 4 jumps of  $\frac{2}{3}$  which ends on  $2\frac{2}{3}$



Each plate has  $\frac{1}{2}$  of a cake on it. There are 3 plates on each table. There are 5 tables in the room. How much cake is in the room? To find out how much cake there is, first we can think about the plates on each table and write  $3 \times \frac{1}{2}$  which would give us the amount of cake on each table  $\frac{3}{2}$ . Now we can multiply the amount of cake  $\frac{3}{2}$  by 5, the number of tables in the room  $5 \times \frac{3}{2}$ .

$$\frac{3}{2} + \frac{3}{2} + \frac{3}{2} + \frac{3}{2} + \frac{3}{2} = \frac{15}{2} \text{ or } 7\frac{1}{2}$$

Students need enough practice with models and connecting those models to written equations to help them see the structure of multiplication when working with fractions. The whole number represents the number of groups and the fraction represents the number of items in each group.