Unit 3, Lesson 2

Representations of Equal Groups of Fractions

Let's look at diagrams and expressions that can help us multiply a whole number and a fraction.

Warm-up

Number Talk: Three, Six, Nine, Twelve

Find the value of each expression mentally.

- 3×6
- 3×9
- 6×9
- 12×9

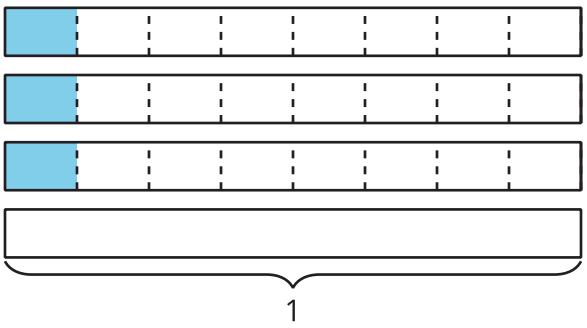
Activity 1

Card Sort: Expressions and Diagrams

Your teacher will give you a set of cards.

1. Match each expression to a diagram that represents the same quantity.
2. Record each expression without a match.

3. Han starts drawing a diagram to represent $7 \times \frac{1}{8}$ and does not finish. Complete his diagram. Be prepared to explain your reasoning.



4. Choose one expression that you recorded earlier that didn't have a match.

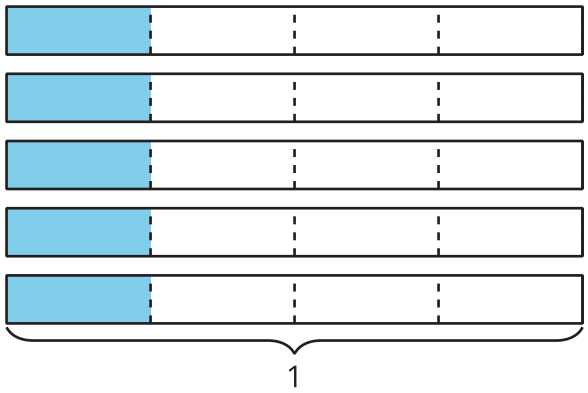
   Draw a diagram that can be represented by the expression. What value do the shaded parts of your diagram represent?

Activity 2

Different Representations

1. a. Write a multiplication expression that represents the shaded parts of the diagram. Then find the value of the expression.

   Diagram:

   Expression:

   Value:

   b. Draw a diagram that the expression $6 \times \frac{1}{3}$ could represent. Then find the value of the expression.

   Diagram:

   Expression: $6 \times \frac{1}{3}$

   Value:

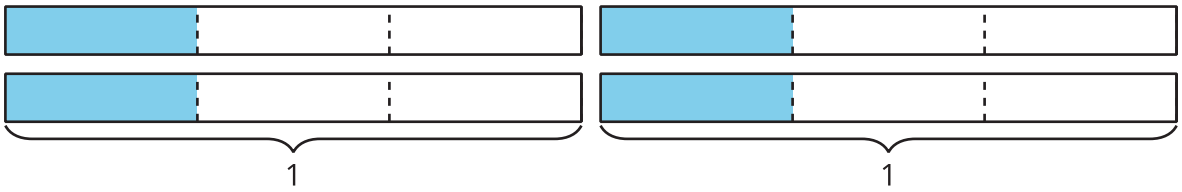
c. Draw a diagram and write an expression that show the value $\frac{7}{2}$.

Diagram:

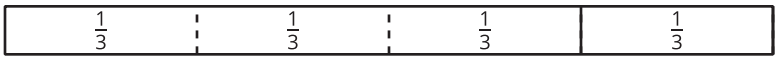
Expression:

Value: $\frac{7}{2}$

2. To represent $4 \times \frac{1}{3}$, Diego drew this diagram:



Elena drew this diagram:



Are they representing the same expression and the same value? Explain or show how you know.