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

2.1: Card Sort: Expressions and Diagrams

Your teacher will give you a set of cards with expressions and diagrams.

1. Match each expression with a diagram that represents the same quantity.

2. Record each expression without a match.

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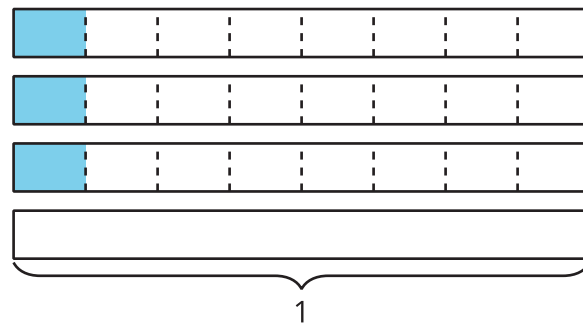

4. Choose one expression that you recorded earlier that didn't have a match.

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

2.2: 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:

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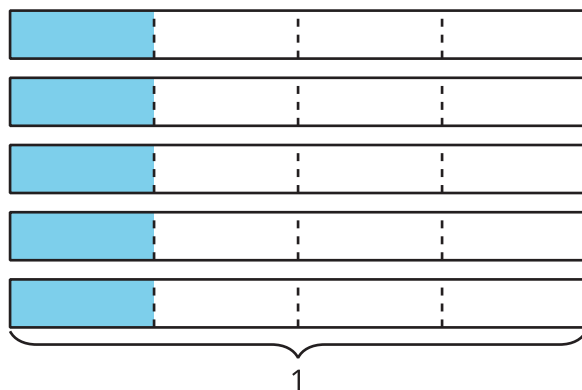
b. Draw a diagram that the expression $6 \times \frac{1}{3}$ could represent. Then, find the value of the expression.

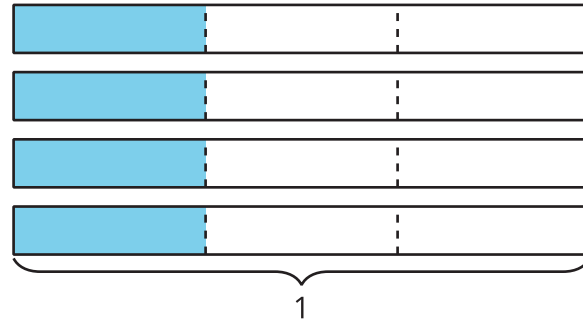Diagram: Expression: $6 \times \frac{1}{3}$

Value:

c. Draw a diagram and write an expression that gives 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 value? Explain or show how you know.