Representations of Equal Groups of Fractions

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

Number Talk: Three, Six, Nine, Twelve

Find the value of each expression mentally.

- 3×6

- 3×9

- 6×9

- 12×9

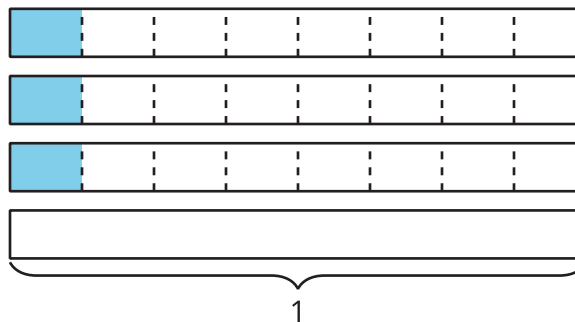## Card Sort: Expressions and Diagrams

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.

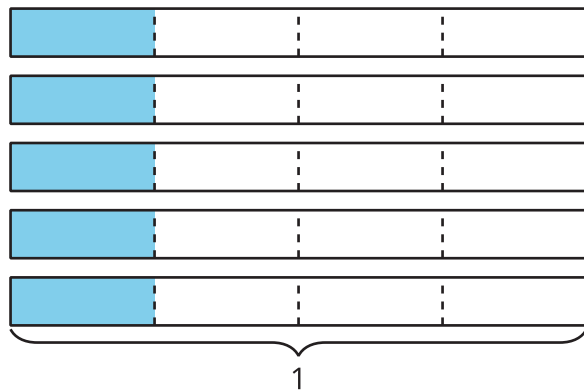4. Choose one expression that you recorded earlier that didn't have a match.

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

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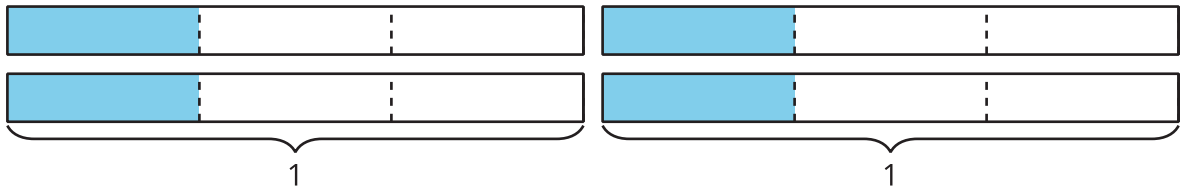
c. Draw a diagram and write an expression that show the value $\frac{7}{2}$.

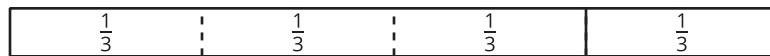Diagram: Expression:

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.