

## Mathematical Context

### Mathematical Goals for the Lesson (from T-1 of Lesson Plan):

The *Interpreting Multiplication and Division* lesson is designed to assess how well students are able to:

- Interpret the meaning of multiplication and division.

### Discussion Questions to Develop the Big Mathematical Picture<sup>1</sup>

1. What big mathematical relationships, patterns, or principles do we want students to understand in this lesson?
2. What is one or more key mathematical understanding(s) that this lesson builds upon? What is one or more key mathematical understanding(s) that this lesson builds towards? What connects those understandings?
3. How might different representations or solution strategies within the lesson connect to each other in order to deepen our students' mathematical understandings?

### Directions for the Mathematical Activity:

Work in groups of two or three. You will receive cut-up copies of *Card Set: Words and Diagrams* and *Card Set: Calculations* (these are indicated with a W or a C in the top left corner).

When working together, take turns to:

1. Match a calculation to a word/diagram interpretation of that calculation
2. Explain your matching to your partner(s).
3. They will then check your matching and challenge your explanation if they disagree.
4. Where a diagram does not exist, draw one of your own.

You might find that more than one calculation matches a word/diagram or more than one word/diagram matches a calculation. That is fine. Put the cards together however you think they go best.

*For the version of these instructions for students, see T-5*

### Discussion Questions Focusing on the Mathematical Activity

1. What are some different mathematical approaches for completing the task?
2. What is a big mathematical idea present in this lesson?
3. How do the tasks in the lesson provide opportunities for students to build on others' thinking and recognize them as capable and able contributors towards important mathematical ideas?

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<sup>1</sup> From: TRU Math Conversation Guide

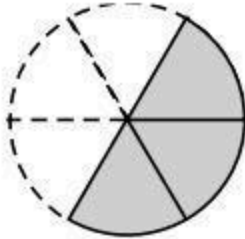
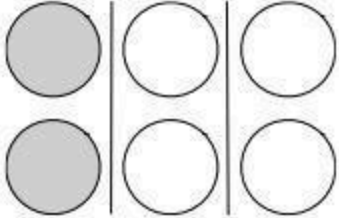
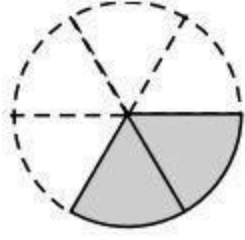
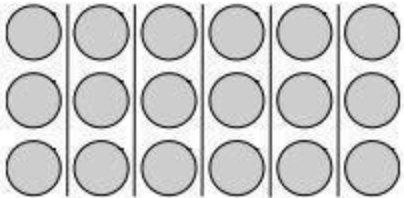
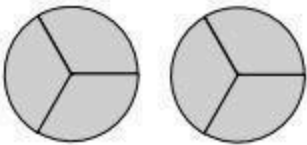
**Mathematical Context Materials**

**Directions:** Cut out the Card Sets on the next three pages to form the cards for the grouping activity. Give one set to each group of two or three.

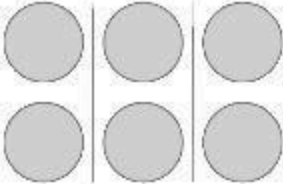
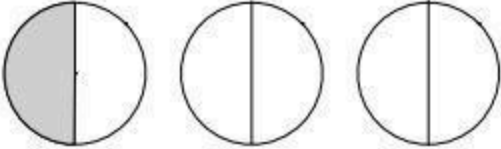
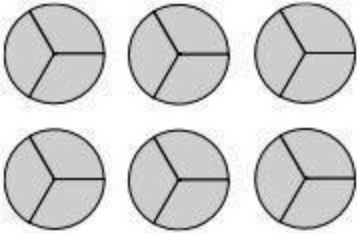

**Card Set: Calculations**

C1 $\frac{1}{3} \times 6$	C2 $\frac{1}{3} \times \frac{1}{6}$	C3 $3 \times \frac{1}{6}$
C4 $6 \div 3$	C5 $3 \times 6$	C6 $\frac{1}{3} \div \frac{1}{6}$
C7 $6 \div \frac{1}{3}$	C8 $\frac{1}{6} \times 3$	C9 $\frac{1}{6} \div \frac{1}{3}$
C10 $\frac{1}{3} \div 6$	C11 $6 \times \frac{1}{3}$	C12 $6 \times 3$
C13 $\frac{1}{6} \times \frac{1}{3}$	C14 $3 \div 6$	C15

## Card Set: Words and Diagrams

<p>W1</p> <p>What is three groups of one sixth?</p> 	<p>W2</p> <p>What is one third of six?</p> 
<p>W3</p> <p>How many one-sixths are there in one third?</p> 	<p>W4</p> <p>Six groups of three. How many altogether?</p> 
<p>W5</p>	<p>W6</p> <p>Six groups of one third. How much altogether?</p> 

## Card Set: Words and Diagrams (continued)

<p>W7</p> <p>Six divided into three equal groups. How many in each group?</p> 	<p>W8</p> <p>Three divided into six equal parts. How much is each part?</p> 
<p>W9</p>	<p>W10</p> <p>Six divided into thirds. How many slices?</p> 
<p>W11</p> <p>How much is one third of one sixth?</p> 	<p>W12</p> <p>What fraction of one third is one sixth?</p> 