

Lesson 4: Fractions Equal to 1

Lesson Objective

- Students will identify and create fractions equal to 1.

Instructional Materials

Material	Quantity	Description
Bag of 12 of the same objects	1	
Bag of objects	1 bag per student	Bags of objects for each student should ideally consist of a variety of objects and a variety of numbers of objects. Avoid creating bags of 12 objects, which is used in the teacher-led example.
Grid paper	1 per student	
Computer Projection Equipment if using PowerPoint	(optional)	
PowerPoint: Fractions Equal to 1	(optional)	
How Am I Doing? graph	1 per student	
Display Masters	1 each	<ul style="list-style-type: none"> Preview: Key Idea: Fractions Equal to 1 Engage Prior/Informal Knowledge Demonstrate: Collection of 12 Objects in a Bag
Handouts	1 per student	<ul style="list-style-type: none"> Cumulative Review Practice Independent Practice
Answer Keys	1 each	<ul style="list-style-type: none"> Cumulative Review Practice Independent Practice

Cumulative Review

Have students answer the questions on the Cumulative Review handout. Go over the answers. Correct misconceptions. Have students use a colored pencil to make corrections as needed. Collect student papers to determine who needs additional instruction.

Preview

This lesson will build on students' conceptual knowledge of fractions. Students will learn how fractions can be equal to 1. Students will apply this knowledge when using computational procedures to generate equivalent fractions.

Display and introduce through a brief explanation the key idea for this lesson:

- All of the parts are selected for fractions equal to 1, so the numerator (number of selected parts) is the same as the denominator (the type of parts being created).

Use the Key Idea: Fractions Equal to 1  display master as needed.

Engage Prior/Informal Knowledge

To open the lesson, present questions to activate students' background knowledge related to the content to be taught in this lesson. Ask students questions such as:

- In the fraction $\frac{6}{9}$ what is the numerator, and what does it represent? (6, The numerator represents the number of parts.)
- In the fraction $\frac{7}{35}$ what is the denominator, and what does it represent? (35, The denominator represents the type of parts being created.)
- Of the fractions $\frac{2}{4}$, $\frac{1}{7}$, $\frac{1}{200}$, and $\frac{5}{8}$, which are unit fractions? ($\frac{1}{7}$ and $\frac{1}{200}$)

Use the Engage Prior/Informal Knowledge display master as needed.

If students cannot correctly answer these questions, stop and explicitly teach the material.

Demonstrate



1. Generate and model fractions with the same denominator.

Think aloud as you model creating a fraction equal to one whole with 12 of the same objects from your sample bag (e.g., 12 pencils).

Say: *I need to know how many objects are in my bag.*

Count the objects aloud.

Say: *Remember that the denominator of a fraction tells how many things. So for this bag the denominator is 12. I need to write 12 in the denominator's position. Where should I write it? (under the fraction bar)*

Display 12 under a fraction bar.

Display 1 object from the collection.

Say: *I have selected 1 object. This represents the numerator. I am going to write 1 in the numerator's position. Where should I write it? (above the fraction bar)*

Display 1 above the fraction bar.

Say: *One object out of a collection of 12 objects is*



TEACHER NOTE

At any time during this lesson, use the Fractions Equal to 1 PowerPoint presentation to illustrate the lesson information.

represented by the fraction $\frac{1}{12}$.

Draw and shade a picture of $\frac{1}{12}$. Use the Collection of 12 Objects in a Bag  display master as needed.

Repeat several times with different numbers of selected objects. Remind students that the denominator does not change because the total number of parts is the same.

2. Generate and model a fraction equal to 1.

Say: *What fraction would represent the whole bag? I have 12 total items in my collection.*

Display 12 under a fraction bar.

Say: *I want to select all of the items. They represent my numerator.*

Count the objects aloud.

Display 12 above the fraction bar.

Say: *The fraction $\frac{12}{12}$ represents the whole bag. All of the items are selected. The numerator and denominator are the same for fractions that represent 1 whole.*

3. Generate a fraction equal to 1, given a numerator or denominator.

Display a value, such as 6.

Say: *There are 6 objects selected. To create a fraction equal to 1, how many total objects are there?*

Say: *For a fraction equal to 1, the number of selected objects equals the number of total objects. The numerator and denominator are the same. Since the numerator is 6, the denominator must be 6 for the*

fraction to equal 1. There are 6 total objects.

Display $\frac{6}{6}$.

Repeat with several examples, giving values for the denominator and the numerator.

Practice

For each practice activity, provide detailed feedback to students, highlighting what was done correctly and what needs improvement. Provide opportunities for students to correct their errors. Collect student work to review and monitor student progress.

Activity 1: Have students determine the fraction that equals 1 to represent their collection.

Distribute a bag of objects to each student.

Have students share the fraction that represents their whole collection. Select some students to verbalize their reasoning and thought process. Listen for the development of any misconceptions within the reasoning.

Display the fractions that students share.


Emphasize that all of the fractions equal 1 and that all of their parts are selected, so the numerator (number of selected parts) is the same as the denominator (the type of parts being created).

Display a value and tell students it represents either the denominator or numerator. Have students write a fraction equal to 1. If students need more practice, give them



TEACHER NOTE

If students continue to struggle, tell them the number of pieces into which an object has been divided and have them show you a fraction that represents the whole object.

additional examples of a numerator or denominator and have them create a fraction equivalent to 1. 

Activity 2: Have students work in pairs or small groups to complete the activity on the Practice handout. Have students verbalize their reasoning and each step in the process to their partners. Listen for the development of any misconceptions within the reasoning.

Independent Practice

1. Have students work independently to complete the activity on the Independent Practice handout.
2. Go over the answers and have students self-check and correct, using a colored pencil.
3. Have students record the number correct in the box and complete their “How Am I Doing?” graph.
4. Collect the papers to review and monitor student progress.

Closure

Review the key ideas. Have students provide examples from the lesson.

Have students discuss their answer to the following questions.

- What makes a fraction that represents 1 different from other fractions?
- How can you easily tell if a fraction is equal to 1?

Clear up any misconceptions. Students who have difficulties with the idea that a fraction can be equal to 1 whole need additional instruction.