3rd Grade

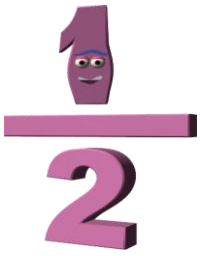
Connecting Equivalent Fractions and Measurement

Adapted from the book Beyond Pizzas and Pies: 10 Essential Strategies for Supporting Fraction Sense

Student Objective: "I can place and name equivalent fractions on a number line."

Standards to Measure	**Mathematical Practices**
3. NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. **a.** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. **c.** Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form of 3=3/1; recognize that 6/1=6; locate 4/4 and 1 at the same point on a number line diagram.	2. Reason abstractly and quantitatively 6. Attend to precision 5. Use appropriate tools strategically 8. Look for and express regularity in repeated reasoning

Materials:
Number Line (numbered from 0 to 2, with 12 centimeters between each whole number), Centimeter Squared Paper or Centimeter Cubes, "What Fractions are Equivalent on the Number Line?" recording sheet

G **Engage Students with the Goal**	State and Rate Objective: "I can place and name equivalent fractions on a number line." Students rate themselves to the goal (1, 2, 3, 4).	Setting Objectives and Providing Feedback
A **Access Prior Knowledge**	Show students the visuals below. Ask students, "How are fractions and number lines related to measurement?" Have students discuss with a partner or group and share out.   	Nonlinguistic Representation Cues, Questions, and Advance Organizers Cooperative Learning

N **New Information**	*(The purpose of this activity is to help students see that equivalent fractions represent the exact same point on a number line. The only difference is how they are notated. It all depends on which size fraction was used for the partitioning.)* 1. Provide students with a number line that has 12 centimeters between whole numbers, and goes from 0 to 2. 2. Ask students to name the numbers that are halfway between 0 and 1, and 1 to 2. Tell students to use the centimeter paper or cubes to partition the number line between the whole numbers. Tell them it is important to be precise when using the tools to partition. 3. Have students label the ½ and 3/2 point on the line. Have them use fraction notation for whole numbers and mixed numbers as well, so that all representations for a number are included. 4. Next, have students use the cubes or centimeter paper to partition the number line into fourths, making sure to be exact as they label each point. If they are labeling a point with more than one fraction, they will need to write it underneath the previous notation to be precise. 5. Continue having students partition the number line into thirds, sixths, and twelfths, as precisely as possible. All equivalent fractions should be written vertically underneath the exact point they represent.	Similarities and Differences Nonlinguistic Representation Cues, Questions, and Advance Organizers
A **Application**	6. Pass out the "What Fractions are Equivalent on the Number Line?" recording sheet. Tell students to record all the equivalent fractions they can find in the second column for the number in the first column. 7. When students are done, have them share out what they found. Ask students, "So how does this all relate to measurement?" Students should suggest the idea of using rulers, measuring cups, etc. and the fractions that are found when measuring. Ask students, "So, what did we actually create today?" (Ruler and/or measurement tool) 8. Possible Extension: Ask students "Are there other equivalent fractions for these numbers that aren't listed?" Have them explain their reasoning.	Similarities and Differences Providing Feedback Practice and Homework
G **Revisit the Goal**	<u>State and Rate</u> Objective: "I can place and name equivalent fractions on a number line." Students rate themselves to the goal (1, 2, 3, 4). Have students write a statement to summarize their learning for the day.	Setting Objectives and Providing Feedback

3rd Grade
Name _____

What Fractions are Equivalent on the Number Line?

Number	Equivalents on Your Number Line
1/12	
1/6	
¼	
1/3	
½	
¾	
2/3	
1	
1 1/12	
1 1/6	
1 ¼	
1 ½	
1 3/4	
2	