



Topic E

Equivalent Fractions

3.NF.3a–c

Focus Standard:	3.NF.3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
		<ul style="list-style-type: none"> a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. b. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$, $4/6 = 2/3$. Explain why the fractions are equivalent, e.g., by using a visual fraction model. c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. <i>Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.</i>
Instructional Days:	8	
Coherence	-Links from: G2–M8	Time, Shapes, and Fractions as Equal Parts of Shapes
	-Links to: G4–M5	Fraction Equivalence, Ordering, and Operations

In Topic D, students practiced placing and comparing fractions on a number line. In Topic E, they identify equivalent fractions using fraction strips, number bonds, and the number line as models. Students compare fractions on the number line to recognize that equivalent fractions refer to the same whole. They say $\frac{1}{2} = \frac{2}{4}$, assuming they are comparing like units (e.g. $\frac{1}{2}$ gallon = $\frac{2}{4}$ gallon rather than $\frac{1}{2}$ cup = $\frac{2}{4}$ gallon). Likewise, when they model $\frac{1}{2} = \frac{2}{4}$ on the number line, both fractions are in reference to the same length unit, the same whole. Equivalent fractions are different ways to represent the same number, the same point on the number line. Initially, students find equivalence in fractions less than 1 whole (e.g., 1 half = 2 fourths). They then express whole numbers as fractions, using number bonds and number lines, to show how many copies of a unit are needed to make the whole (e.g., 4 copies of 1 fourth equals 1 whole). They reason about why whole numbers can be written as fractions with a denominator of 1. Finally, students explain equivalence through manipulating units.

A Teaching Sequence Toward Mastery of Equivalent Fractions

- Objective 1:** Recognize and show that equivalent fractions have the same size, though not necessarily the same shape.
(Lesson 20)
- Objective 2:** Recognize and show that equivalent fractions refer to the same point on the number line.
(Lesson 21)
- Objective 3:** Generate simple equivalent fractions by using visual fraction models and the number line.
(Lessons 22–23)
- Objective 4:** Express whole numbers as fractions and recognize equivalence with different units.
(Lesson 24)
- Objective 5:** Express whole number fractions on the number line when the unit interval is 1.
(Lesson 25)
- Objective 6:** Decompose whole number fractions greater than 1 using whole number equivalence with various models.
(Lesson 26)
- Objective 7:** Explain equivalence by manipulating units and reasoning about their size.
(Lesson 27)