

# 4.NF Comparing Fractions 1

**Objective:** Students will be able to explain equivalent fractions by using visual models.

**Overview:** In this lesson, students will use fraction strips as a first step to determining equivalent fractions. They will create their own models to demonstrate equivalencies.

**Key Content Standard(s):**

**4.NF.A.1**

**Key Practice Standard(s):**

**4**

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## Lesson Plan:

1. Before the lesson, make sufficient copies of the attached worksheets. Straightedges will likely be helpful for students.
2. Begin by drawing a rectangle, and divide it into four equal parts (alternatively, use the models included at the end of this document). Shade three, and ask students what fraction the shaded part represents (A:  $\frac{3}{4}$ ).
3. Draw a rectangle of identical size, and carefully divide into twelve equal parts. Shade nine, and ask students what fraction the shaded part represents (A:  $\frac{9}{12}$ ).
4. Ask students what they notice about these two fractions (A: they are equivalent; insist on correct terminology). Have students write or state an equation that demonstrates this (A:  $\frac{3}{4} = \frac{9}{12}$ ). Tell students that any time two fractions describe the same area, they are equivalent.
5. Ask students if they can name any other equivalent fractions (e.g.  $\frac{1}{2} = \frac{2}{4}$ ). Demonstrate one or two examples on the board.
6. Distribute the attached sheets. Tell students that they will use the strips (individually, in partners, or in groups) to identify as many equivalent fractions as they can. Encourage them to use a straightedge to help determine that fractions are in fact equivalent (i.e. "close" is not the same as equivalent). Use the fraction strips and straightedge to demonstrate again that  $\frac{3}{4} = \frac{9}{12}$ . Use the fraction strips to demonstrate two fractions that are close, but not equivalent (e.g.  $\frac{3}{4} \neq \frac{8}{10}$ ).
7. Students should record equivalent fractions on their sheet (the last option is left blank so that students may choose a fraction for which to find equivalent fractions). An answer key is included at the end of this document.

## Assessment:

1. Collect and assess the worksheet.
2. Have students write an explanation (using pictures and/or words) to demonstrate why two fractions are equivalent).

**Differentiation:**

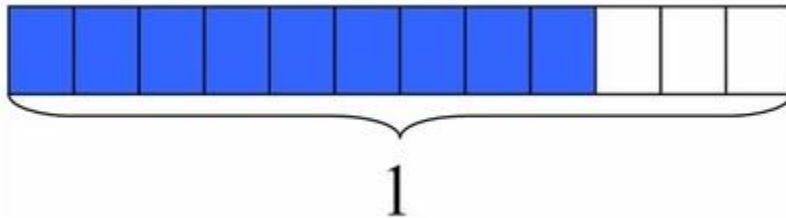
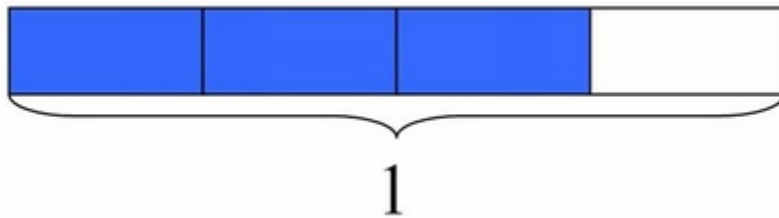
The standards state “grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, 100.” However, some students may enjoy discovering that fractions with the denominators of 7 and 11 have no equivalent fractions among fractions with denominators 12 or less. Students could be encouraged to consider why this is.

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**Commentary:**

As students improve their understanding of fractions, they should move away from solely using models to determine equivalencies. This first step, however, is vital.

**If applicable, include worksheets, diagrams, student work etc. at end**





Equivalent Fraction Recording Sheet

Fraction	Equivalent Fractions	Fraction	Equivalent Fractions
$\frac{1}{2}$		$\frac{3}{3}$	
$\frac{3}{4}$		$\frac{6}{10}$	
$\frac{2}{8}$		$\frac{4}{12}$	
$\frac{4}{5}$			

Equivalent Fraction Recording Sheet

Fraction	Equivalent Fractions	Fraction	Equivalent Fractions
$\frac{1}{2}$		$\frac{3}{3}$	
$\frac{3}{4}$		$\frac{6}{10}$	
$\frac{2}{8}$		$\frac{4}{12}$	
$\frac{4}{5}$			

Equivalent Fraction Recording Sheet – ANSWER KEY

Fraction	Equivalent Fractions	Fraction	Equivalent Fractions
$\frac{1}{2}$	$\frac{2}{4}, \frac{3}{6}, \frac{4}{8}, \frac{5}{10}, \frac{6}{12}$	$\frac{3}{3}$	$1, \frac{2}{2}, \frac{4}{4} \dots$
$\frac{3}{4}$	$\frac{6}{8}, \frac{9}{12}$	$\frac{6}{10}$	$\frac{3}{5}$
$\frac{2}{8}$	$\frac{1}{4}, \frac{3}{12}$	$\frac{4}{12}$	$\frac{1}{3}, \frac{2}{6}, \frac{3}{9}^*$
$\frac{4}{5}$	$\frac{8}{12}$		

\*  $\frac{3}{9}$  is beyond the scope of the grade 4 standards, and should not be counted against students.