

## Simplifying Fractions Activity

**Supplies:** Class set of Page 3 for students to use in pairs (Leave the left column intact. Cut the decomposition column and simplified fractions into game pieces to match to the left column.)

One copy of Page 3 for the key

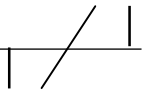
Student record sheets (Page 4), one per student

**Objective:** Students will use decomposition as a method for simplifying fractions.

**Standards:** 6NS 1.0 Students solve problems involving fractions, ratios, proportions and percentages.  
6.RP.3a Make tables of equivalent ratios.

**Introduction:** Many fractions can be simplified to show the part of a whole they represent. When simplifying, it is often faster to decompose than it is to divide the numerator and denominator by the same number.

**I Do (Note-taking):** We can decompose in different ways and get the same simplified fraction.

	Decompose		Traditional	
—	$\frac{36}{100}$		$\frac{36}{100}$	$\frac{36}{100}$
	$= \frac{\bullet}{\bullet}$		$= \frac{36 \div 2}{100 \div 2}$	$= \frac{36 \div 4}{100 \div 4}$
= —	= —		$= \frac{18}{50}$	= —
			$= \frac{\div}{\div}$	
			= —	

**We Do:**

Decompose

$$\frac{\quad}{\quad} = \frac{\bullet}{\bullet}$$

Traditional

$$\frac{\quad}{\quad} = \frac{30}{48} \frac{6}{6}$$

**You Do (Partner Activity):** Hand out fraction strips and playing pieces. “With your partner, you will have a strip of 10 fractions to simplify, cards for the decomposition for each problem, and cards with the simplified fraction for each problem.” Demonstrate the first match and the equivalent form of one.

$\frac{\quad}{\quad}$	$\frac{\quad}{\bullet}$	$\frac{1}{5}$
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“It will be your job to match the cards with each problem. Some may have more than one answer.” Have students complete the matching activity. Debrief the matches after most groups are finished and have students record their work on the worksheets (Page 4). Explain that the two extra decomposition cards to show that there are different correct ways to decompose. Only one right answer needs to be shown on the worksheet.

**\*Extension to Multiplying Fractions (Partner Activity):** “Decomposition is also efficient for multiplying fractions.” Repeat the same matching activity with the cards and records sheet on pages 8-9. (Record sheets for simplifying and multiplying can be copied back to back.)

—	— •	$\frac{1}{5}$
$\frac{18}{81}$	• — •	$\frac{2}{9}$
—	• • — • • • •	$\frac{1}{4}$

—

Name \_\_\_\_\_

Period \_\_\_\_\_

Decomposition

Simplified Fraction

—		
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•  
—  
•

# Warm-Up

**CST/CAHSEE: 6NS 1.1/ 6.NS.6**

Which of the following fractions is closest to 0? Justify your choice.

A  $-\frac{1}{4}$

B  $-\frac{2}{3}$

C  $-\frac{1}{2}$

D  $\frac{3}{4}$

**Review: 5NS 1.4/ 4.OA.4**

Prime factor:

a) 60

b) 600

**Current: 6NS 1.0/6.RP.3a**

Simplify:  $\frac{20}{24}$

**Other: 6NS 1.1/ 6.NS.6**

Which point shows the location of  $-\frac{1}{2}$  on the number line?



How do you know?

# Warm-Up KEY

CST/CAHSEE: 6NS 1.1/ 6.NS.6

Review: 5NS 1.4/ 4.OA.4

Which of the following fractions is closest to 0? Justify your choice.

Ⓐ — less than one half to the left of 0 on a number line

B  $-\frac{2}{3}$

C —

D  $\frac{3}{4}$

Prime factor:

a) 60  
 $= 6 \cdot 10$   
 $= 2 \cdot 3 \cdot 2 \cdot 5$

b) 600  
 $= 6 \cdot 10 \cdot 10$   
 $= 2 \cdot 3 \cdot 2 \cdot 5 \cdot 2 \cdot 5$

Current: 6NS 1.0/6.RP.3a

Other: 6NS 1.1/ 6.NS.6

Simplify:

—  
—————  
—

Which point shows the location of  $-\frac{3}{2}$  on the number line? [B]



How do you know?

$[\frac{3}{2} = 1\frac{1}{2}$  which is between 1 and 2 on a number line.]

$-\bullet-$	$\frac{3\bullet 2}{2\bullet 2\bullet 5}$	$-$
$-\frac{2}{3}\bullet\frac{9}{4}$	$-1\bullet\frac{2\bullet 3\bullet 3}{3\bullet 2\bullet 2}$	$--$
$-\bullet-$	$\frac{\bullet}{\bullet}$	$-$
$\frac{1}{3}\bullet\frac{5}{7}$	$\frac{1\bullet 5}{3\bullet 7}$	$\frac{5}{21}$
$\frac{1}{2}\bullet 8$	$!\bullet\frac{\bullet\bullet}{\bullet}$	$-4$
$--$	$\frac{\bullet}{\bullet\bullet}$	$\frac{7}{12}$
$-\square-$	$\frac{\bullet}{\bullet\bullet}$	$\frac{1}{2}$
$\frac{2}{3}\bullet\frac{3}{8}$	$\frac{2\bullet 3\bullet}{3\bullet 2\bullet 4\bullet}$	$-$

$$\frac{1}{4}\bullet\frac{16}{5}$$

