Name _____

## Simplest Form

**Essential Question** How can you write a fraction as an equivalent fraction in simplest form?

Common Core **Number and Operations—Fractions—4.NF.A.1**

**MATHEMATICAL PRACTICES**
**MP4, MP6, MP7**

### Unlock the Problem (Real World)

Vicki made a fruit tart and cut it into 6 equal pieces. Vicki, Silvia, and Elena each took 2 pieces of the tart home. Vicki says she and each of her friends took $\frac{1}{3}$ of the tart home. Is Vicki correct?

- Into how many pieces was the tart cut?

_____

- How many pieces did each girl take?

_____

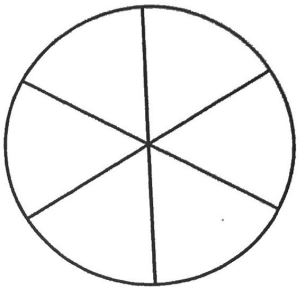
### Activity

**Materials** ■ color pencils

**STEP 1** Use a blue pencil to shade the pieces Vicki took home.

**STEP 2** Use a red pencil to shade the pieces Silvia took home.

**STEP 3** Use a yellow pencil to shade the pieces Elena took home.



The tart is divided into _____ equal-size pieces. The 3 colors on the model show how to combine sixth-size pieces to make

_____ equal third-size pieces.

So, Vicki is correct. Vicki, Silvia, and Elena each took —— of the tart home.

**Math Talk** MATHEMATICAL PRACTICES 4

**Interpret a Result**
Compare the models for $\frac{2}{6}$ and $\frac{1}{3}$. Explain how the sizes of the parts are related.

- What if Vicki took 3 pieces of the tart home and Elena took 3 pieces of the tart home. How could you combine the pieces to write a fraction that represents the part each friend took home? Explain.

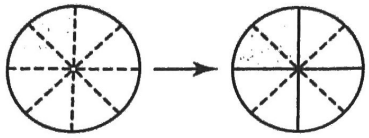
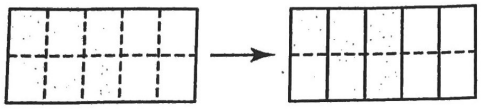
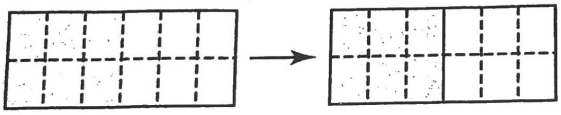
_____

_____

_____

**Simplest Form** A fraction is in **simplest form** when you can represent it using as few equal parts of a whole as possible. You need to describe the part you have in equal-size parts. If you can't describe the part you have using fewer parts, then you cannot simplify the fraction.

## One Way Use models to write an equivalent fraction in simplest form.

| MODEL | WRITE EQUIVALENT FRACTIONS | RELATE EQUIVALENT FRACTIONS |
|---|---|---|
|  | $\frac{2}{8} = \frac{1}{4}$ | $\frac{2 \div 2}{8 \div 2} = \frac{1}{4}$ |
|  | $\frac{6}{10} = \frac{\cdot}{5}$ | $\frac{6 \div}{10 \div} = \frac{}{5}$ |
|  | $\frac{6}{12} = \_\_$ | $\frac{6 \div}{12 \div} = \_\_$ |

To simplify $\frac{6}{10}$, you can combine tenth-size parts into equal groups with 2 parts each.

So, $\frac{6}{10} = \frac{6 \div}{10 \div} = \_\_$.

## Another Way Use common factors to write $\frac{6}{10}$ in simplest form.

A fraction is in simplest form when 1 is the only factor that the numerator and denominator have in common. The parts of the whole cannot be combined into fewer equal-size parts to show the same fraction.

| | |
|---|---|
| **STEP 1** List the factors of the numerator and denominator. Circle common factors. | Factors of 6: _____, _____, _____, _____<br>Factors of 10: _____, _____, _____, _____ |
| **STEP 2** Divide the numerator and denominator by a common factor greater than 1. | $\frac{6}{10} = \frac{6 \div}{10 \div} = \_\_$ |

*Since 1 is the only factor that 3 and 5 have in common, _____ is written in simplest form.*

Name _____

## Share and Show

MATH BOARD

1. Write $\frac{8}{10}$ in simplest form.

$$\frac{8}{10} = \frac{8 \div}{10 \div} = \_$$

**Write the fraction in simplest form.**

2. $\frac{6}{12}$ _____

3. $\frac{2}{10}$ _____

4. $\frac{6}{8}$ _____

5. $\frac{4}{6}$ _____

**Math Talk** MATHEMATICAL PRACTICES 6

Explain how you know a fraction is in simplest form.

## On Your Own

**Write the fraction in simplest form.**

6. $\frac{9}{12}$ _____

7. $\frac{4}{8}$ _____

8. $\frac{10}{12}$ _____

9. $\frac{20}{100}$ _____

**Tell whether the fraction is in simplest form. Write *yes* or *no*.**

10. $\frac{2}{8}$ _____

11. $\frac{9}{12}$ _____

12. $\frac{5}{6}$ _____

13. $\frac{4}{10}$ _____

14. GO DEEPER There are 18 students in Jacob's homeroom. Six students bring their lunch to school. The rest eat lunch in the cafeteria. In simplest form, what fraction of students eat lunch in the cafeteria?

_____

Name _____

## Simplest Form

COMMON CORE STANDARD—4.NF.A.1
*Extend understanding of fraction equivalence and ordering.*

**Write the fraction in simplest form.**

1. $\frac{6}{10}$

$\frac{6}{10} = \frac{6 \div 2}{10 \div 2} = \frac{3}{5}$

2. $\frac{6}{8}$ _____

3. $\frac{5}{5}$ _____

4. $\frac{8}{12}$ _____

5. $\frac{100}{100}$ _____

6. $\frac{2}{6}$ _____

7. $\frac{2}{8}$ _____

8. $\frac{4}{10}$ _____

**Tell whether the fractions are equivalent. Write = or ≠.**

9. $\frac{6}{12} \bigcirc \frac{1}{12}$

10. $\frac{3}{4} \bigcirc \frac{5}{6}$

11. $\frac{6}{10} \bigcirc \frac{3}{5}$

12. $\frac{3}{12} \bigcirc \frac{1}{3}$

## Problem Solving (Real World)

13. At Memorial Hospital, 9 of the 12 babies born on Tuesday were boys. In simplest form, what fraction of the babies born on Tuesday were boys?

14. Cristina uses a ruler to measure the length of her math textbook. She says that the book is $\frac{4}{10}$ meter long. Is her measurement in simplest form? If not, what is the length of the book in simplest form?

15. WRITE ▸ *Math* Explain using words or drawings how to write $\frac{6}{9}$ in simplest form.

## Lesson Check (4.NF.A.1)

1. Six out of the 12 members of the school choir are boys. In simplest form, what fraction of the choir is boys?

2. Write $\frac{10}{12}$ in simplest form.

## Spiral Review (4.OA.A.3, 4.OA.B.4, 4.NBT.B.5, 4.NF.A.1)

3. Each of the 23 students in Ms. Evans' class raised $45 for the school by selling coupon books. How much money did the class raise?

4. List two common factors of 36 and 48.

5. Bart uses $\frac{3}{12}$ cup milk to make muffins. Write a fraction that is equivalent to $\frac{3}{12}$.

6. Ashley bought 4 packages of juice boxes. There are 6 juice boxes in each package. She gave 2 juice boxes to each of 3 friends. How many juice boxes does Ashley have left?



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