Equivalent Fractions

Name: _____ **Date:** _____

Quick Review

Equivalent fractions are fractions that represent the same value, even though their numerators and denominators are different.

For example:

1/2 = 2/4 = 3/6 = 4/8

We can create equivalent fractions by multiplying or dividing the numerator and denominator by the **same non-zero number**.

Multiplying: $2/3 = (2 \times 2)/(3 \times 2) = 4/6$

Dividing: $6/9 = (6 \div 3)/(9 \div 3) = 2/3$

A fraction is in **lowest terms** when its numerator and denominator have no common factor greater than 1.

Part A — Multiple Choice

1. Which fraction is equivalent to 1/2?

A. 2/3
B. 3/6
C. 3/4
D. 2/5

2. Which fraction is equivalent to 2/3?

A. 4/6
B. 3/5
C. 2/6
D. 5/6

3. Which fraction is already in lowest terms?

A. 4/8
B. 6/9
C. 3/7
D. 10/15

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Equivalent Fractions

4. What must we do to create an equivalent fraction?

A. Add the same number to the numerator and denominator
B. Multiply or divide both by the same non-zero number
C. Change only the numerator
D. Change only the denominator

5. What is 8/12 in lowest terms?

A. 4/6
B. 2/3
C. 3/4
D. 1/2

Part B — Generate Equivalent Fractions

Complete each equivalent fraction.

1. 1/3 = ____/6 **2.** 2/5 = ____/15 **3.** 3/4 = 12/____

4. 4/7 = ____/21 **5.** 5/6 = 20/____ **6.** 3/8 = ____/40

Part C — Simplify to Lowest Terms

Simplify each fraction completely.

1. 4/8 = _____ **2.** 6/9 = _____ **3.** 10/15 = _____

4. 12/16 = _____ **5.** 18/24 = _____ **6.** 20/30 = _____

Part D — Equivalent or Not Equivalent?

Write **Equivalent** or **Not Equivalent**.

1. 1/2 and 3/6 _____ **2.** 2/3 and 4/9 _____

3. 3/5 and 6/10 _____ **4.** 4/7 and 8/14 _____

5. 2/4 and 3/8 _____

Part E — Visual Models

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Equivalent Fractions

Each square represents an equal part of the same-sized whole. ■ means shaded, and □ means unshaded.

1. Compare the models.

Model A: ■ □ Model B: ■ ■ □ □

a) What fraction is shaded in Model A? _____

b) What fraction is shaded in Model B? _____

c) Are the fractions equivalent? _____

2. Complete the model.

Model A: ■ ■ □ □ □ □ Model B: □ □ □ □ □ □ □ □ □ □ □ □

a) What fraction is shaded in Model A? _____

b) Shade the correct number of squares in Model B to show an equivalent fraction.

c) Write the equivalent fractions: _____ = _____

3. Draw two equal-sized rectangles.

- Divide the first rectangle into 3 equal parts and shade 1 part.
- Divide the second rectangle into 6 equal parts and shade 2 parts.

Write the equivalent fractions: _____ = _____

Drawing:

Part F — Explain Your Thinking

1. Why are 2/3 and 4/6 equivalent?

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2. A student says that 2/4 and 3/5 are equivalent because both numerators and denominators increased. Is the student correct? Explain.

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3. Why must we multiply or divide both the numerator and denominator by the same non-zero number?

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Equivalent Fractions

Part G — Real-Life Application

1. A pizza is divided into 4 equal slices. Sam eats 2 slices. Another identical pizza is divided into 8 equal slices. Alex eats 4 slices.

a) What fraction of the first pizza did Sam eat? _____

b) What fraction of the second pizza did Alex eat? _____

c) Did they eat the same amount of pizza? Explain.

2. A recipe requires 3/6 of a cup of sugar. Write this amount in lowest terms.

3. A class has 20 students. Eight students wear glasses. Write the fraction of students wearing glasses in lowest terms.

Exit Ticket

1. What are equivalent fractions?

2. Complete: 2/3 = ____/12

3. Simplify 15/20 to lowest terms.

4. Are 3/4 and 9/12 equivalent?

5. Explain why multiplying both the numerator and denominator by 3 does not change the value of a fraction.

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Equivalent Fractions

Equivalent Fractions — Answer Key

Part A — Multiple Choice

1. B — 3/6
2. A — 4/6
3. C — 3/7
4. B — Multiply or divide both by the same non-zero number
5. B — 2/3

Part B — Generate Equivalent Fractions

1. 1/3 = 2/6
2. 2/5 = 6/15
3. 3/4 = 12/16
4. 4/7 = 12/21
5. 5/6 = 20/24
6. 3/8 = 15/40

Part C — Simplify to Lowest Terms

Question	Original fraction	Lowest terms
1	4/8	1/2
2	6/9	2/3
3	10/15	2/3
4	12/16	3/4
5	18/24	3/4
6	20/30	2/3

Part D — Equivalent or Not Equivalent?

1. 1/2 and 3/6 — Equivalent
2. 2/3 and 4/9 — Not Equivalent
3. 3/5 and 6/10 — Equivalent
4. 4/7 and 8/14 — Equivalent
5. 2/4 and 3/8 — Not Equivalent

Part E — Visual Models

1. Compare the models.

Model A: ■ □ Model B: ■ ■ □ □

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Equivalent Fractions

a) ½ b) 2/4

c) Yes, they are equivalent. Both represent half of the same-sized whole.

2. Complete the model.

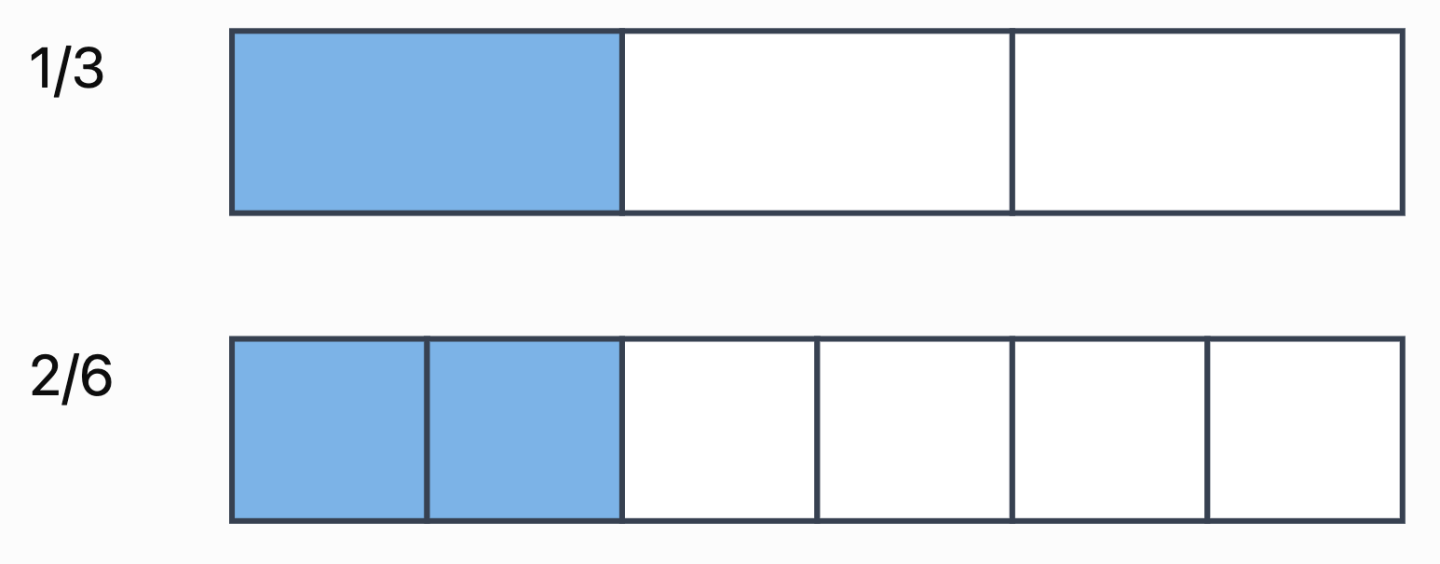
Model A: ■ ■ □ □ □ □ Model B: ■ ■ ■ ■ □ □ □ □ □ □ □ □

a) 2/6

b) Shade 4 out of 12 squares.

c) 2/6 = 4/12

3. Draw two equal-sized rectangles.



Both rectangles have one-third of their area shaded.

1/3 = 2/6

Part F — Explain Your Thinking

1. Why are 2/3 and 4/6 equivalent?

Multiplying both the numerator and denominator of 2/3 by 2 gives 4/6.

2/3 = (2 × 2)/(3 × 2) = 4/6

Both fractions represent the same proportion of a whole.

2. A student says that 2/4 and 3/5 are equivalent because both numerators and denominators increased. Is the student correct?

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Equivalent Fractions

No. Adding 1 to both the numerator and denominator does not generally create an equivalent fraction.

2/4 = 1/2, while 3/5 is greater than 1/2.

The fractions represent different values.

3. Why must we multiply or divide both the numerator and denominator by the same non-zero number?

Multiplying the numerator and denominator by the same non-zero number is equivalent to multiplying the fraction by 1, so its value remains unchanged.

Dividing both by the same non-zero number also preserves the fraction's value.

Part G — Real-Life Application

1. Pizza problem

a) Sam ate 2/4 of a pizza.

b) Alex ate 4/8 of a pizza.

c) Yes, they ate the same amount.

2/4 = 1/2

4/8 = 1/2

Both ate half of an identical pizza.

2. Recipe

3/6 = 1/2 cup

3. Students wearing glasses

8/20 = 2/5

Divide both the numerator and denominator by 4.

Exit Ticket

1. What are equivalent fractions?

Fractions that have different numerators or denominators but represent the same value.

2. Complete: 2/3 = ____/12

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Equivalent Fractions

8/12

3. Simplify 15/20 to lowest terms.

3/4

4. Are 3/4 and 9/12 equivalent?

Yes. Multiplying both the numerator and denominator of 3/4 by 3 gives 9/12.

5. Explain why multiplying both the numerator and denominator by 3 does not change the value of a fraction.

Multiplying both by 3 is equivalent to multiplying the fraction by 3/3, which equals 1. Multiplying by 1 does not change its value.

Teaching note: In Part E, students may shade different squares or orient their rectangles differently. Accept any representation that uses equal-sized parts and correctly shows the equivalent fraction.

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