Name & Surname: _____ Class: _____ Date: _____

Same Size, More Pieces

Equivalent fractions with visual models

About 30 minutes Level ★★★☆☆

Same Amount in Steps

Two fractions are **equivalent** when they show the **same size** of the same whole.

- Count **shaded** parts on top and all **equal** parts below.
- Cut each part into n **equal** pieces.
- Multiply top and bottom by n. More parts, each **smaller**, same size.

% Task A

/12

Fill the missing forms. Find equivalent values with the same size.

Fraction	Decimal	Percentage
$\frac{1}{2}$		
$\frac{3}{4}$		
$\frac{3}{10}$		
	0.25	
	0.6	
		40%

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Make Equal Matches

Make matches by multiplying top and bottom.

Key words

equivalent: same value, different numbers

numerator: top number that counts shaded parts

denominator: bottom number that counts all parts

whole: the full shape or amount

Task B

/10

Use bars if needed. Multiply top and bottom together.

WARM UP

1 Write the fraction: 1 **shaded** part of 2 **equal** parts.

Answer: _____

2 Write the fraction: 2 **shaded** parts of 4 **equal** parts.

Answer: _____

3 Find the missing **bottom** number: $\frac{1}{2} = 2/?$

Answer: _____

4 Find the missing **top** number: $\frac{2}{3} = ?/6$

Answer: _____

PRACTICE

5 Multiply by 2 to match $\frac{3}{4}$. Write the **equivalent** fraction.

Answer: _____

6 Multiply by 3 to match $\frac{1}{3}$. Write the **equivalent** fraction.

Answer: _____

7 Why do $\frac{1}{2}$ and $\frac{2}{4}$ cover the **same size** with different **parts**?

Answer: _____

PROBLEM SOLVING

8 An 8-inch strip shows $\frac{1}{2}$ **shaded**. How many **shaded** inches?

Answer: _____

9 A bar shows $\frac{2}{3}$ **shaded**. Cut thirds in 2. Write the **equivalent** fraction.

Answer: _____

10 12 squares, $\frac{3}{4}$ **shaded**. How many **shaded** squares?

Answer: _____

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More Cuts Same Amount

Prove matches with pictures and numbers.

Task C

/10

Cut into equal pieces. Check number and size.

WARM UP

1 Write the fraction: 3 **shaded** parts of 6 **equal** parts.

Answer: _____

2 Find the missing **bottom** number: $\frac{2}{3} = 6/?$

Answer: _____

3 Find the missing **top** number: $\frac{3}{4} = ?/12$

Answer: _____

4 Do $\frac{1}{3}$ and $\frac{2}{6}$ share the **same point** on a **number line**?

Answer: _____

PRACTICE

5 Multiply $\frac{2}{5}$ by 2. Write the **equivalent** fraction.

Answer: _____

6 Divide $\frac{4}{6}$ by 2. Write the **equivalent** fraction.

Answer: _____

7 Student A says $\frac{6}{8} > \frac{3}{4}$. Explain the **mistake**.

Answer: _____

PROBLEM SOLVING

8 Write $\frac{3}{10}$ as hundredths. An **equivalent** fraction with 100 at the **bottom**.

Answer: _____

9 Add using **equivalents**: $\frac{3}{10} + \frac{4}{100} = ?/100$

Answer: _____

10 20 squares, $\frac{1}{5}$ **shaded**. How many **shaded** squares?

Answer: _____

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See It Line Up

Shade, name and compare to prove same size.

Task D

/5

Shade or name. Shade equivalent rows to the same size.

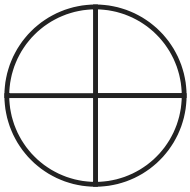
1



Fraction shaded: $\frac{\square}{\square}$

2

Shade $\frac{3}{4}$



3



$= \frac{1}{2}$



$= \frac{\square}{4}$

4



$= \frac{2}{3}$



$= \frac{\square}{6}$

5



$\frac{1}{2}$



$\frac{2}{4}$

$\frac{1}{2}$ $\square$ $\frac{2}{4}$ Write <, > or =

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Same Size, More Pieces

Task E

Example done for you

/4

Tick true or false. Think about number and size.

Statement	True	False
$\frac{1}{2} = \frac{2}{4}$. Same **size**, but $\frac{2}{4}$ has more **smaller** parts.	✓	
$\frac{2}{4}$ is **bigger** than $\frac{1}{2}$ because 2 > 1 and 4 > 2.		
Multiply **top** and bottom by the same number to keep **value**.		
$\frac{1}{2} = \frac{2}{3}$ because you **add** 1 to the top and **bottom**.		
$\frac{3}{4} = \frac{6}{8}$ because (2 x 3)/(2 x 4) is the **same size**.		

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Solve With Bars

Follow steps, then use bar models to solve.

Task F

/2

Study each example, then try it the same way.

WORKED EXAMPLE

Make $\frac{1}{2}$ with 4 equal parts.

1. Count 1 **shaded** of 2 parts
2. Cut each part into 2 **equal** parts
3. Now 2 of 4, so $\frac{1}{2} = \frac{2}{4}$

Answer: $\frac{2}{4}$

YOUR TURN

Make $\frac{1}{2}$ with 6 equal parts.

Answer: _____

WORKED EXAMPLE

Make $\frac{2}{3}$ with 6 equal parts.

1. Count 2 **shaded** of 3 parts
2. Cut each part into 2 **equal** parts
3. Now 4 of 6, so $\frac{2}{3} = \frac{4}{6}$

Answer: $\frac{4}{6}$

YOUR TURN

Make $\frac{3}{4}$ with 8 equal parts.

Answer: _____

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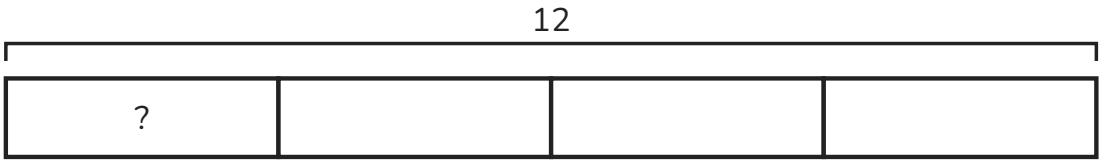
Same Size, More Pieces

Task 6

/4

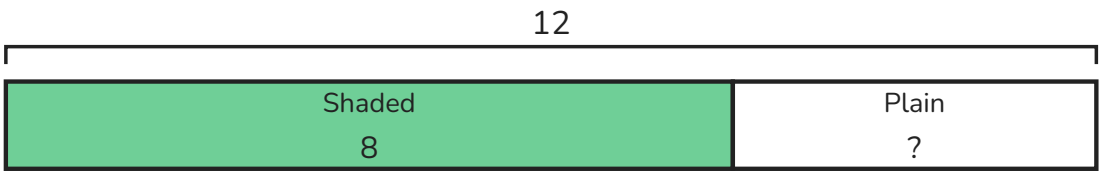
Use the bar to find the missing amount.

1 A 12-inch ribbon shows $\frac{1}{4} = \frac{2}{8}$. It is cut into 4 **equal** parts. How long is 1 **part**?



Answer: _____ **inches**

2 A 12-square bar shows $\frac{2}{3} = \frac{4}{6}$. 8 squares are **shaded** and the rest are **plain**. How many are plain?



Answer: _____ **squares**

How did I do?

Circle a face for each line.

I can explain why a/b = (n x a)/(n x b) with a picture.	☹	😐	☺
I can recognize and make equivalent fractions.	☹	😐	☺
I can tell how part number and part size change.	☹	😐	☺

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Answer sheet: Same Size, More Pieces

Task A

1. $\frac{1}{2}$ = 0.5 = 50%
2. $\frac{3}{4}$ = 0.75 = 75%
3. $\frac{3}{10}$ = 0.3 = 30%
4. $\frac{1}{4}$ = 0.25 = 25%
5. $\frac{3}{5}$ = 0.6 = 60%
6. $\frac{2}{5}$ = 0.4 = 40%

Task B

1. $\frac{1}{2}$
2. $\frac{2}{4}$
3. 4
4. 4
5. $\frac{6}{8}$
6. $\frac{3}{9}$
7. More parts but each part is smaller, so shaded size stays the same.
8. 4 inches
9. $\frac{4}{6}$
10. 9 squares

Task C

1. $\frac{3}{6}$
2. 9
3. 9
4. Yes, they are the same size and same point.
5. $\frac{4}{10}$
6. $\frac{2}{3}$
7. They are equal. More parts but each smaller, same size.
8. $\frac{30}{100}$
9. $\frac{34}{100}$
10. 4 squares

Task D

1. $\frac{1}{2}$
2. Shade 3 of the 4 equal parts ($\frac{3}{4}$).
3. $\frac{1}{2}$ = $\frac{2}{4}$ (shade 2 parts)
4. $\frac{2}{3}$ = $\frac{4}{6}$ (shade 4 parts)
5. $\frac{1}{2}$ = $\frac{2}{4}$

Task E

1. True
2. False
3. True
4. False
5. True

Task F

1. $\frac{3}{6}$
2. $\frac{6}{8}$

Task G

1. 3 inches
2. 4 squares

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