09.07.2021
WALT: Use equivalent fractions to solve problems

Vocabulary
part
whole
numerator
denominator
multiples
factors

Prior learning:

What is an equivalent fraction?

How many equivalent fractions can you find for 1/2 ?

An equivalent fraction is a fraction with different numbers which represent the **same value**.
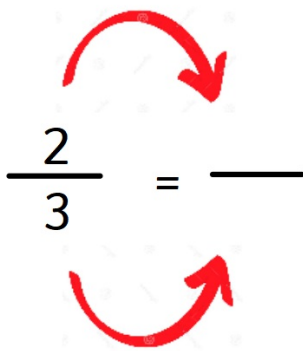
Fractions are equivalent if you can get from one to the other by multiplying the numerator and denominator by the same number.
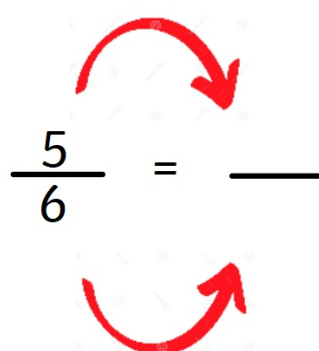
You can also find an equivalent fraction by dividing your numerator and denominator by the same number.

$$\frac{4}{8} \quad \times 2 = 8 \\ \times 2 = 16$$

$$\frac{4}{8} = \frac{8}{16}$$

$$\frac{4}{8} \quad \div 2 = 2 \\ \div 2 = 4$$

$$\frac{4}{8} = \frac{2}{4}$$

An equivalent fraction of... is...

$$\frac{2}{3} = \underline{}$$

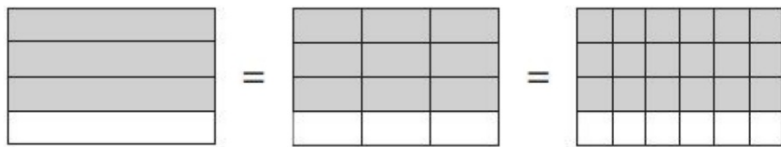$$\frac{5}{6} = \underline{}$$

Vocabulary
part   multiples
whole   factors
numerator
denominator

These diagrams show three equivalent fractions.

Write the missing values.

$$\frac{3}{4} \quad = \quad \frac{9}{\boxed{}} \quad = \quad \frac{\boxed{}}{24}$$

Mrs McLeod says...

> I think that 2/4 is equivalent to 2/8 because the numerators are the same.

Is Mrs McLeod correct?

Explain why.

Asha is using division to find equivalent fractions...

$$\frac{12}{18} = \frac{2}{9}$$
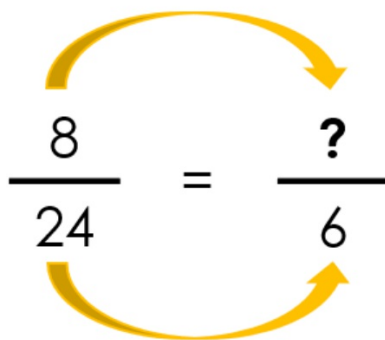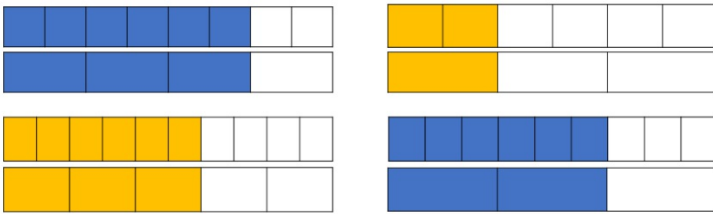
Describe and correct the error that she has made.

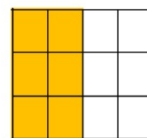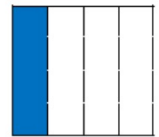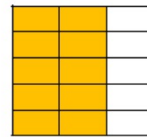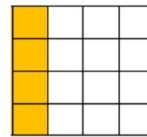$$\frac{8}{24} = \frac{?}{6}$$

A) 16
B) 2
C) 8
D) Not sure **yet**

Can you prove why your answer is correct?

Try it / Use it

1. Use these pairs of diagrams to find equivalent fractions.

2. write each fraction and match up the equivalences.

3.

$$\frac{5}{15} \quad \begin{matrix} \div 5 = \\ = \\ \div 5 = \end{matrix} \quad \frac{?}{?}$$

$$\frac{12}{36} \quad \begin{matrix} \div 3 = \\ = \\ \div 3 = \end{matrix} \quad \frac{?}{?}$$

$$\frac{18}{42} \quad \begin{matrix} \div 6 = \\ = \\ \div 6 = \end{matrix} \quad \frac{?}{?}$$
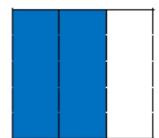
4.

$$\frac{8}{24} = \frac{?}{6}$$

$$\frac{10}{40} = \frac{2}{?}$$

$$\frac{9}{27} = \frac{?}{9}$$

Prove it

Always, Sometimes or Never?

You can use division to help you find equivalent fractions for any fraction.

Prove it!

Which is the odd one out?

$$\frac{20}{100} \qquad \frac{1}{5} \qquad \frac{15}{50} \qquad \frac{3}{15} \qquad \frac{5}{25}$$

Explain your reasoning.

Jane has spilt paint over her work…

$$\frac{\text{\color{red}✹}}{50} = \frac{2}{\text{\color{red}✹}}$$

What could the equivalent fractions be?

Find all possibilities.

Prove it!
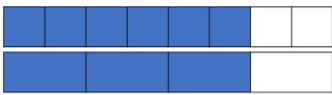Which of these fractions is not in its simplest form?

$$\frac{7}{10} \qquad \frac{6}{9} \qquad \frac{11}{12} \qquad \frac{4}{5}$$
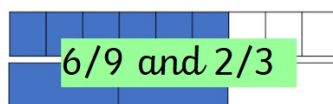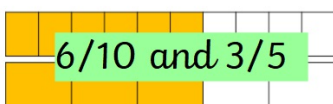
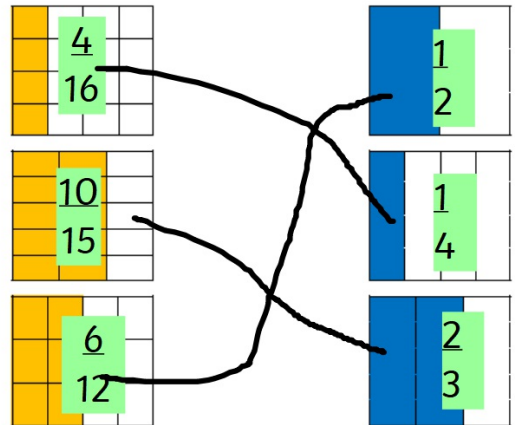Explain how you know!

ANSWERS...

Try it / Use it - Answers

1. 6/8 and 3/⬚   ⬚ 6 and 1/3

6/10 and 3/5   6/9 and 2/3

2. write each fraction and match up the equivalences.

$\frac{4}{16}$ $\frac{1}{2}$

$\frac{10}{15}$ $\frac{1}{4}$

$\frac{6}{12}$ $\frac{2}{3}$

3.

$\frac{5}{15}$ ÷ 5 = $\frac{?}{?}$ $\frac{1}{5}$ $\frac{12}{36}$ ÷ 3 = $\frac{?}{?}$ $\frac{4}{12}$ $\frac{18}{42}$ ÷ 6 = $\frac{?}{?}$ $\frac{3}{7}$
         ÷ 5 =   ÷ 3 =   ÷ 6 =

4.

$\frac{8}{24}$ = $\frac{2}{6}$ $\frac{10}{40}$ = $\frac{2}{8}$ $\frac{9}{27}$ = $\frac{3}{9}$

Prove it - Answers

1. Sometimes

You can use division to find equivalent for some fractions but not all. For example, if the numerator and denonimator are multiples of the same number then you can divide by a common factor.

2.

Problem Solving 1

There are 6 possibilities:

1/50 = 2/100, 25/50 = 2/4, 20/50 = 2/5, 10/50 = 2/10, 4/50 = 2/25, 5/50 = 2/20

3.

Which is the odd one out?

$$\frac{20}{100} \quad \frac{1}{5} \quad \boxed{\frac{15}{50}} \quad \frac{3}{15} \quad \frac{5}{25}$$

Explain your reasoning.

All of the other fractions are equivalent to 1/5

4. **A** – 6/9 is not in its simplest form.

B – 6 and 9 are both multiples of 3 so the numerator and denominator can be divided by 3 to make 2/3. The numerators and denominators in the other fractions do not share any common factors other than 1 so they cannot be simplified any further.