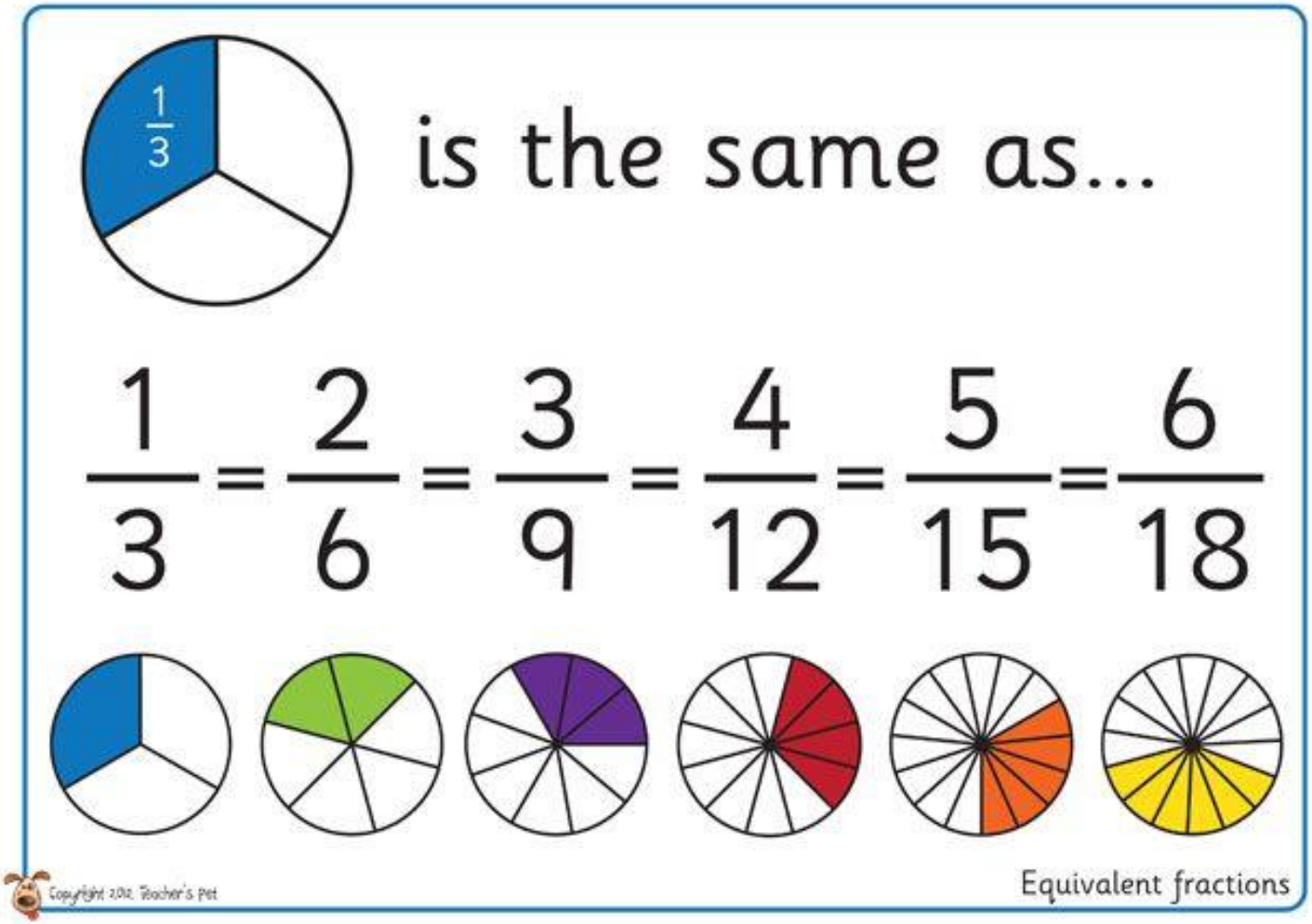
EQUIVALENT FRACTIONS

Observe:


1/3
is the same as...
1/3 = 2/6 = 3/9 = 4/12 = 5/15 = 6/18
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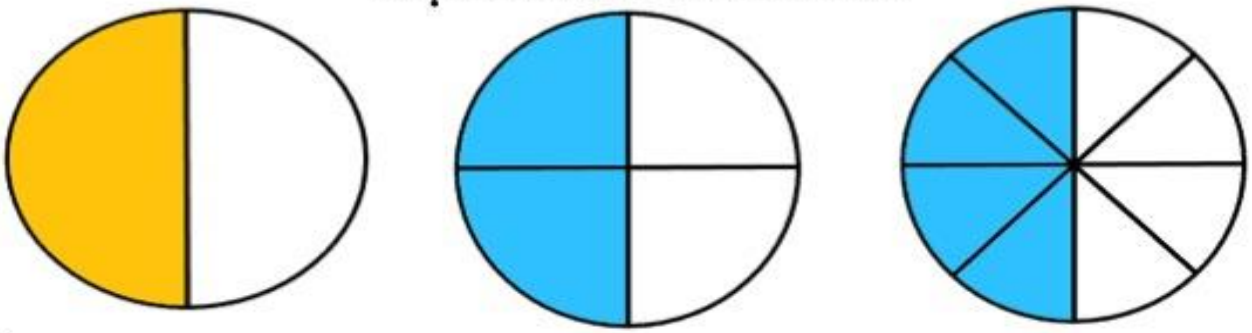
Equivalent fractions

What is an equivalent fraction?

Equivalent Fraction

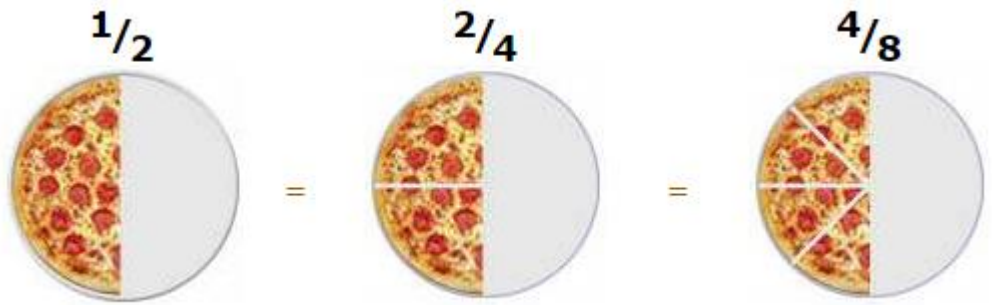
Equivalent Fractions have the same value, even though they may look different. They are fractions that name the same amount or part.

For example: 1/2 , 2/4 and 4/8 are all equivalent fractions



- ***Equivalent Fractions*** *have the same value, even though they may look different.*

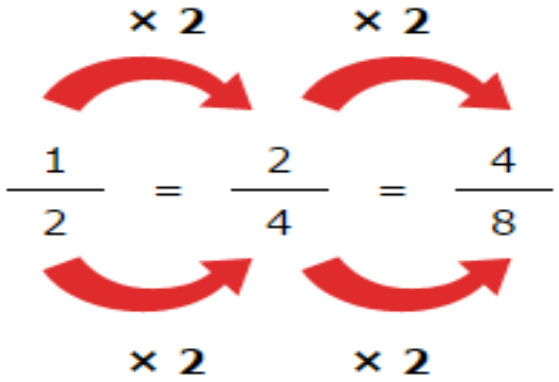
$$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$$



- **Why are they the same?** Because when you multiply or divide **both** the top and bottom by the same number, the fraction keeps it's value.

Rule:

Multiply or divide the numerator and denominator by the same number, so the value is the same, bigger or smaller but the same.



So,

How to make Fractions Equivalent by Multiplying…

$$\frac{1}{2} \xrightarrow{\times 2} \frac{2}{4} \xrightarrow{\times 2} \frac{4}{8}$$

$$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$$

$$\times 2 \qquad \times 2$$

Rule #1:
Whatever you multiply the top by…

…you must multiply the bottom by too!

And… Dividing or reducing

How to make Fractions Equivalent by Dividing…

$$\frac{4}{8} \xrightarrow{\div 2} \frac{2}{4} \xrightarrow{\div 2} \frac{1}{2}$$

$$\frac{4}{8} = \frac{2}{4} = \frac{1}{2}$$

$$\frac{4}{8} \xrightarrow{\div 2} \frac{2}{4} \qquad \frac{4}{8} \xrightarrow{\div 2} \frac{2}{4} \xrightarrow{\div 2} \frac{1}{2}$$

Only divide when the top and bottom would still be whole numbers

Rule #1:
Whatever you divide the top by…

…you must divide the bottom by too!

Remember: When you divide fractions , you are REDUCING

Reduce

means to make something smaller and with fractions, this means by dividing

$$\frac{2}{4} \xrightarrow{\div 2} \frac{4}{8} \qquad \frac{2}{4} = \frac{4}{8} \qquad \frac{4}{8} \xrightarrow{\div 2} \frac{2}{4}$$

Simplest Form

To *simplify* a fraction, divide the top and bottom by the highest number that can divide into both numbers exactly

(this is called the Greatest Common Factor)

$\frac{10}{20}$

10 and 20 have 2,5 and 10 in common.

The GREATEST number is 10

SO, divide BOTH the top and bottom by 10 and you get…

$= \frac{10 \div 10}{20 \div 10} = \frac{1}{2}$

If you divided by just 5 then you would not be in simplest form …

$\frac{10 \div 5}{20 \div 5} = \frac{2}{4}$ This can still be reduced!

Practice:

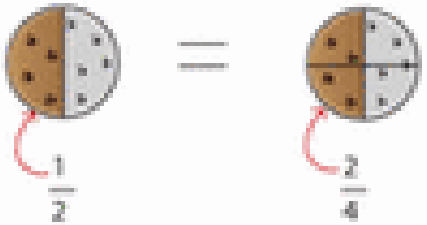
Name: _____

Serving up Equivalent Fractions

Make the fractions equivalent by finding the pattern and either multiplying or dividing.

1) $\frac{12}{24} = \frac{\square}{12}$	2) $\frac{1}{3} = \frac{\square}{9}$
3) $\frac{4}{6} = \frac{\square}{3}$	4) $\frac{\square}{25} = \frac{1}{5}$
5) $\frac{\square}{21} = \frac{1}{3}$	6) $\frac{6}{18} = \frac{12}{\square}$
7) $\frac{12}{24} = \frac{\square}{2}$	8) $\frac{50}{100} = \frac{5}{\square}$
9) $\frac{2}{4} = \frac{\square}{12}$	10) $\frac{8}{14} = \frac{\square}{7}$
11) $\frac{1}{3} = \frac{\square}{27}$	12) $\frac{\square}{5} = \frac{9}{15}$
13) $\frac{3}{11} = \frac{\square}{33}$	14) $\frac{1}{4} = \frac{\square}{12}$
15) $\frac{2}{3} = \frac{\square}{12}$	16) $\frac{3}{4} = \frac{\square}{8}$

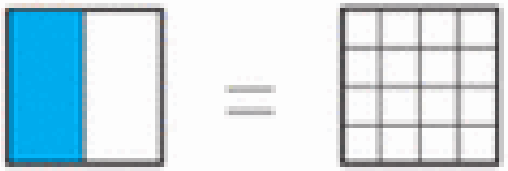
Fractions Practice: Equivalent Fractions



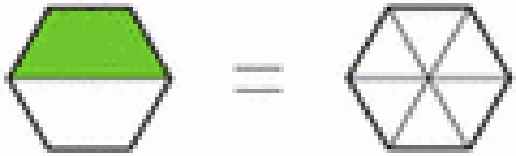
Color the cookie to show the equivalent fraction.
Write out the fraction each picture shows.

1. _____ = _____

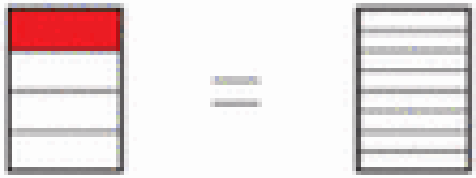
Color each shape to show an equivalent fraction.
Write the fraction each shape shows.



2. _____ = _____



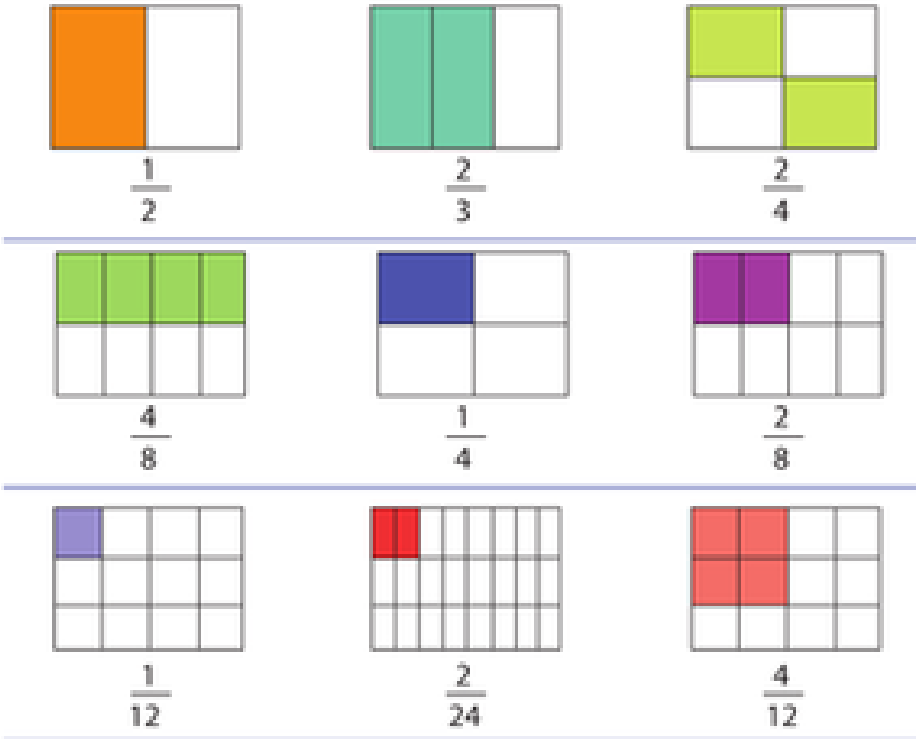
3. _____ = _____



4. _____ = _____

EQUAL FRACTIONS

Observe the first fraction and circle the other equivalent fraction.



Color the figures to have equivalent fractions.