

Concept: Equivalent Fractions

Name: _____

COMPUTER COMPONENT

Instructions: In  follow the **Content Menu** path:

Fractions > Equivalent Fractions



Work through all Sub Lessons of the following Lessons **in order**:

- *Introduction*
- *Pattern Blocks*
- *Fraction Strips*
- *The Clock*
- *On a square grid*
- *On a dot grid*
- *Slicing*
- *An explanation with sets*
- *Equivalent Fractions on a Number Line*
- *Comparison of Fractions*
- *Equivalent Fractions in a Multiplication Table*
- *One*
- *Equivalent Fractions ... The Pattern*
- *Simplifying Fractions to Simplest Form*
- *Memory Game*
- *A Challenge...Think About It*



As you work through the computer exercises, you will be prompted to make notes in your notebook/math journal.

NOTES

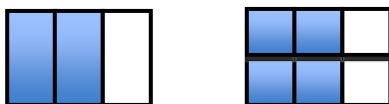
1. Draw two different examples of **equivalent** fractions.

For instance,



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

Example 1:



$$\frac{2}{3} = \frac{4}{6}$$

Example 2:

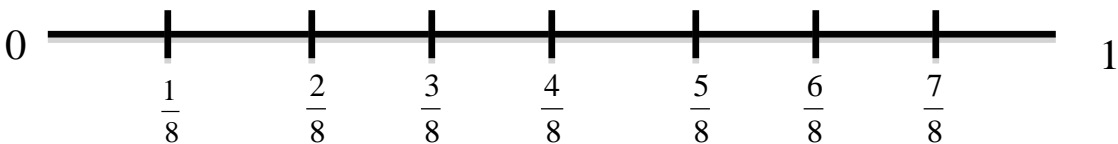
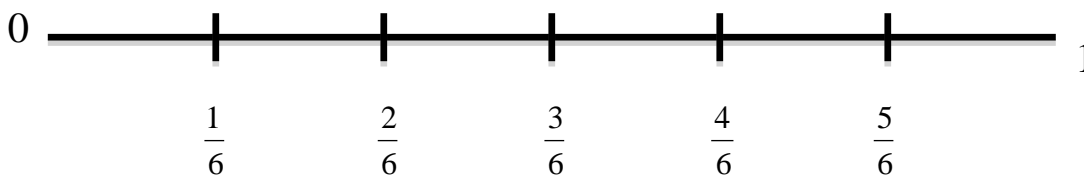
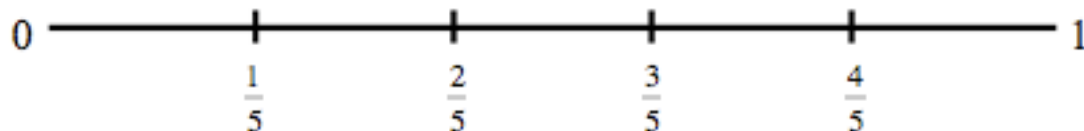
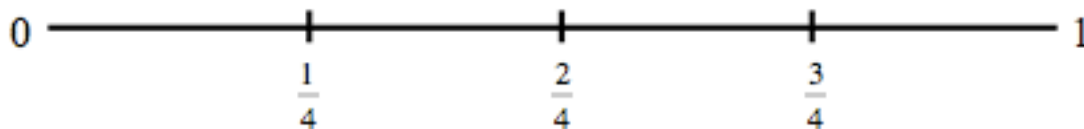
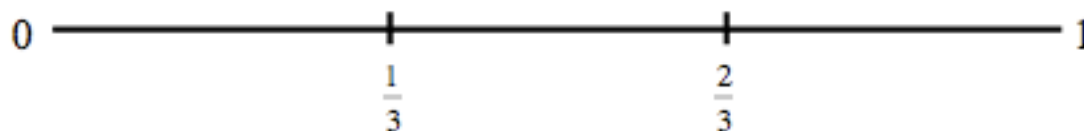
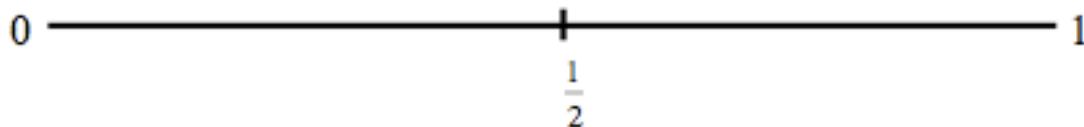


$$\frac{3}{4} = \frac{6}{8}$$

2. A number line is a very effective way to illustrate equivalent fractions.

(a) On the lines below, enter the equivalent fractions as precisely as possible by lining up the equivalent positions using a ruler.

(b) Using a colored pencil, circle each pair of equivalent fractions.



3. A *Multiplication Table* is another great tool that may be used to illustrate equivalent fractions.

Complete the following example using the appropriate rows of the Multiplication Table.

x	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

2	2	4	6	8	10	12	14	16	18
---	---	---	---	---	----	----	----	----	----

7	7	14	21	28	35	42	49	56	63
---	---	----	----	----	----	----	----	----	----

Now we know that $\frac{2}{7} = \frac{4}{14} = \frac{6}{21} = \frac{8}{28} = \frac{10}{35} \Rightarrow \infty$

We can get equivalent fractions if we multiply or divide the numerator and denominator by the same number.

4. Fill in the two boxes to demonstrate two methods of simplifying fractions.

REPEATED DIVISIONS

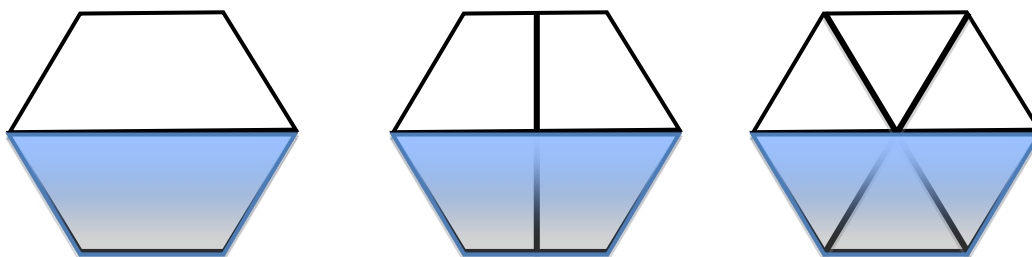
$$\frac{18}{48} = \frac{9}{24} = \frac{3}{8}$$

DIVIDING BY THE GREATEST COMMON FACTOR

$$\frac{18}{48} \div \frac{6}{6} = \frac{3}{8}$$

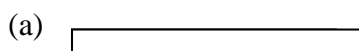
OFF COMPUTER EXERCISES

1. Shade the fraction equivalent to one half on each of the hexagons.



$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6}$$

2. Shade in the fraction equivalent to one half on each of the strips.



represents one



represents $\frac{1}{2}$



represents $\frac{2}{4}$



represents $\frac{3}{6}$



represents $\frac{4}{8}$

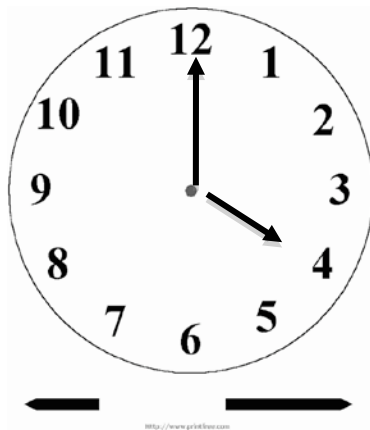


represents $\frac{5}{10}$

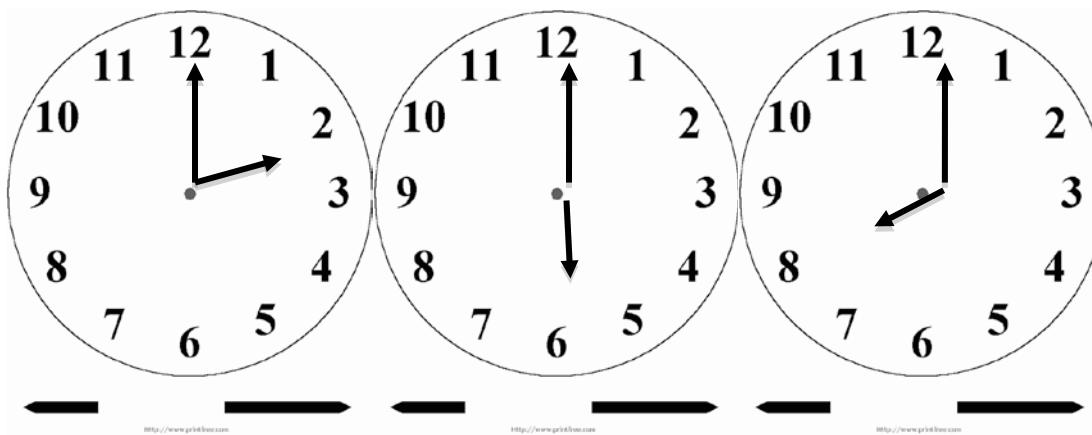
3. When the hour hand moves from 12 to 4, 4 hours have gone by.

This is $\frac{4}{12}$ of the path around the clock.

We may also say that the hour hand has only traveled $\frac{1}{3}$ of the way around the clock.



4. Simplify the following fractions.



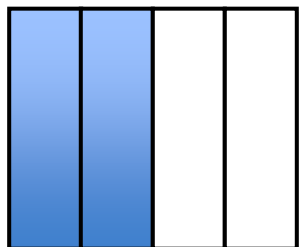
$$\frac{2}{12} = \frac{1}{6}$$

$$\frac{6}{12} = \frac{1}{2}$$

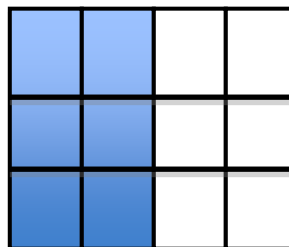
$$\frac{8}{12} = \frac{2}{3}$$

5. Use the *Slicing* strategy to illustrate how:

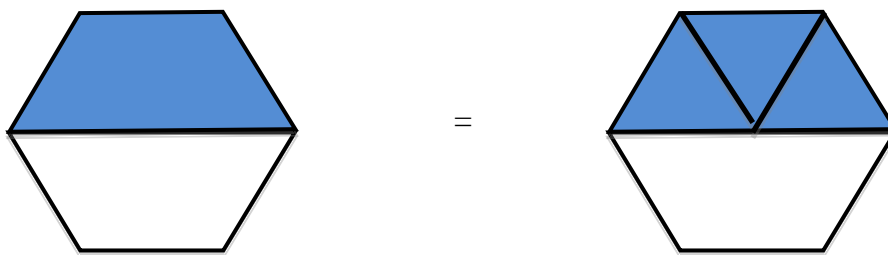
(a) $\frac{2}{4} \equiv \frac{6}{12}$



=



(b) $\frac{1}{2} \equiv \frac{3}{6}$



6. Use the number lines from your **NOTES** to help you, place a $<$ or a $>$ between each set of fractions

(a) $\frac{3}{4} > \frac{4}{6}$

(b) $\frac{5}{6} < \frac{7}{8}$

(c) $\frac{3}{8} < \frac{2}{4}$

(d) $\frac{5}{8} < \frac{2}{3}$

7. Fill in the blanks:

To find an equivalent fraction, we can multiply or divide the numerator and denominator by the **same** number.

8. Express each of the fractions in higher terms as indicated.

(a) $\frac{3}{4} = \frac{6}{8}$

(b) $\frac{5}{8} = \frac{15}{24}$

(c) $\frac{4}{5} = \frac{12}{15}$

(d) $\frac{7}{50} = \frac{14}{100}$

9. Express each of the fractions in lowest terms.

(a) $\frac{6}{8} = \frac{3}{4}$

(b) $\frac{5}{20} = \frac{1}{4}$

(c) $\frac{27}{54} = \frac{1}{2}$

(d) $\frac{48}{72} = \frac{2}{3}$

10. Write two fractions that are equivalent to the following.

(a) $\frac{4}{3} = \frac{8}{6} = \frac{12}{9}$ (b) $\frac{2}{3} = \frac{4}{6} = \frac{6}{9}$

(c) $\frac{3}{5} = \frac{6}{10} = \frac{9}{15}$ (d) $1 = \frac{2}{2} = \frac{3}{3}$

11. Find the equivalent fractions.

Example: $\frac{1 \times 4}{3 \times 4} = \frac{4}{12}$

(a) $\frac{2 \times 3}{3 \times 3} = \frac{6}{9}$ (b) $\frac{2 \times 4}{3 \times 4} = \frac{8}{12}$

(c) $\frac{3 \times 2}{7 \times 2} = \frac{6}{14}$ (d) $\frac{8 \div 4}{12 \div 4} = \frac{2}{3}$

(e) $\frac{2 \div 2}{4 \div 2} = \frac{1}{2}$ (f) $\frac{5 \div 5}{20 \div 5} = \frac{1}{4}$