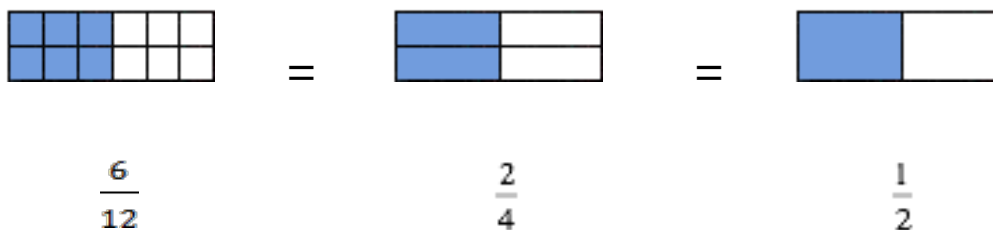


Concept: Percent to Fraction/Decimal

Name:

Warm-Up:

1. Simplifying fractions means to make the fraction as simple as possible.



2. Greatest Common Factor (GCF)

- The largest factor that divides into two numbers evenly

the factors of 18 are...

1, 2, 3, 6, 9, 18

the factors of 48 are ...

1, 2, 3, 4, 6, 8, 12, 24, 48

The greatest common factor is 6

3. Circle the fractions that are in simplest form?

$$\frac{1}{2}$$

$$\frac{4}{10}$$

$$\frac{2}{3}$$

$$\frac{3}{5}$$


$$\frac{11}{32}$$

$$\frac{2}{6}$$

$$\frac{3}{7}$$

$$\frac{7}{18}$$

COMPUTER COMPONENT

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

Percent > Percent to Fraction/Decimal



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

- *Expressing a Percent as a Fraction*
- *Expressing a Percent as a Decimal*
- *Number Line*



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

NOTES:
Express Percent as a Fraction:

Simplest fractions are often used for sizes of screws, nails and thicknesses of metal. You would not talk about a 2/16” drill bit; instead you would say 1/8”.

There are two ways to simplify a fraction:

Method 1: Repeated Division

Divide the numerator and denominator by the same number until you cannot divide any further. Complete the following by filling in the parts that are missing.

$$\begin{array}{ccccc}
 & & \div 2 & & \div 3 \\
 \frac{18}{48} & \begin{array}{c} \curvearrowright \\ = \\ \curvearrowleft \end{array} & \frac{9}{24} & \begin{array}{c} \curvearrowright \\ = \\ \curvearrowleft \end{array} & \frac{3}{8} \\
 & & \div 2 & & \div 3
 \end{array}$$

Practice: Simplify using Method 1:

(a) $\frac{44}{66} = \frac{22}{33} = \frac{2}{3}$

(b) $\frac{99}{121} = \frac{9}{11}$

Method 2: Simplifying

$$\frac{8}{12} = \frac{8 \div 4}{12 \div 4} = \frac{2}{3}$$

$\xrightarrow{\div \text{ GCF}}$
 $\xleftarrow{\div \text{ GCF}}$

the factors of 8 are...

 1, 2, **4**, 8

the factors of 12 are ...

 1, 2, 3, **4**, 6, 12

GCF

 The greatest common factor is **4**
Practice: Simplify using Method 2:

(a) $\frac{12}{16} = \frac{12 \div 4}{16 \div 4} = \frac{3}{4}$

the factors of 12 are...

1, 2, 3, 4, 6, 12

the factors of 16 are ...

1, 2, 4, 8, 16

GCF

 The greatest common factor is **4**

(b) $\frac{8}{16} = \frac{8 \div 8}{16 \div 8} = \frac{1}{2}$

the factors of 8 are...

 1, 2, **4**, 8

the factors of 16 are ...

 1, 2, **4**, **4**, 8, 16

 The greatest common factor is **4**

Percent means **Per Centum** which means Per 100 or out of 100

$$42\% \text{ means } 42 \text{ per } 100 \text{ or } \frac{42}{100}$$

Practice: Write each percent as a fraction in simplest form.

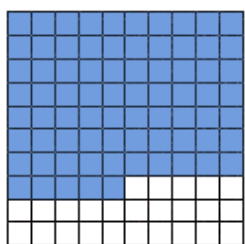
$$(a) 75\% = \frac{75}{100} = \frac{3}{4}$$

$$(b) 37\% = \frac{37}{100}$$

$$(c) 60\% = \frac{60}{100} = \frac{3}{5}$$

$$(d) 12\% = \frac{12}{100} = \frac{6}{50} = \frac{3}{25}$$

Expressing Percent as a Decimal:



75% means 75 per 100 or $\frac{75}{100}$

If you divide 75 by 100 you get **0.75**

$$\begin{array}{r}
 0.75 \\
 \hline
 100 \overline{) 75.00} \\
 \underline{70\ 0} \\
 5\ 00 \\
 \underline{5\ 00} \\
 0
 \end{array}$$

When dividing by 100, move the decimal place **2** units to the **left**.

From Percent		To Decimal
75%	0.75	0.75
	<small>2 Places</small>	

Practice: Express a Percent as a Decimal below using long division.

$$(a) \quad 64\%$$

$$(b) \quad 37\%$$

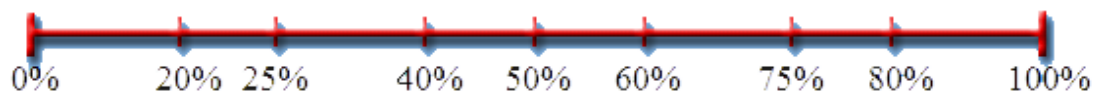
$$= 0.64$$

$$= 0.37$$

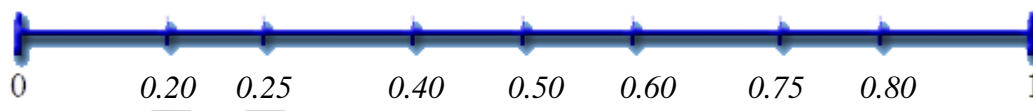
OFF COMPUTER EXERCISES

1. Fill in the following number lines.

Percent Representation



Decimal Representation



Fraction Representation (Enter the simplest fraction representation of the percents above)



2. Fill in the missing values in the chart.

	Percent	Fraction (in lowest term)	Decimal
(a)	45%	$\frac{45}{100} = \frac{9}{10}$	0.45
(b)	20%	$\frac{20}{100} = \frac{1}{5}$	0.20

(c)	70%	$\frac{70}{100} = \frac{35}{50} = \frac{7}{10}$	0.70
(d)	81%	$\frac{81}{100}$	0.81
(e)	21%	$\frac{21}{100}$	0.21
(f)	100%	$\frac{100}{100} = \frac{1}{1}$	1.00

3. In a college class of 100 students, 18% of the students were absent on a certain day.

(a) What does 18% of 100 students mean? *Hint – Diagrams might help support your words.*

$$\frac{\text{Students(Absent)}}{\text{Students(Total)}} = \frac{18}{100} = \frac{9}{50} \quad \text{or} \quad 18\% \text{ of } 100 = 18 \text{ (Move decimal 2 places to the left)}$$

(b) Express the number of absences as a fraction in lowest terms.

$$\frac{9}{50}$$

4. On the school soccer team, 58% of the players have brown eyes.

(a) Express the percentage of brown eyes as a fraction.

$$\frac{\text{Players}(\text{brown eyes})}{\text{Players}(\text{all})} = 58\% = \frac{58}{100} = \frac{29}{50}$$

(b) *Why would percent be useful for making comparisons between different groups?*

Percents can be used to quickly make comparisons between different groups to show trends, preferences and typical outcomes etc.

(Responses will vary)