Study the following words.

arithmetic (uh-**rith**-muh-tik) - using numbers in adding, subtracting, multiplying, and dividing. (I learned my multiplication tables in arithmetic class.)

addition (uh-**dish**-uhn) - the act of adding or putting things together and finding out how much you have when you put it together. (I used addition to find out how many CDs my friend and I had together.)

sum (**suhm**) - the answer to an addition problem. (The sum of 3 and 4 is 7.)

subtraction (suhb-**trakt**-shun) - the act of taking something away from something else. (I used subtraction to find out how many mice I had after 2 ran away.)

difference (**dif**-ruhnss) – the answer to a subtraction problem. (The difference of 10 and 2 is 8.)

Say each word out loud and write it in the blank.

arithmetic_____
addition_____
sum_____
subtraction_____
difference_____

Write each definition in your own words.

arithmetic

addition

sum

subtraction

difference

Write two sentences using each word.
arithmetic
1.

2.
addition
1.

2.

sum
1.

2.

subtraction
1.

2.

difference
1.

2.

Matching.

arithmetic	the answer to an addition problem.
addition	the act of taking something away from something else
sum	using numbers in adding, subtracting, multiplying, and dividing.
subtraction	the answer to a subtraction problem
difference	the act of adding (putting things together) and finding out how much you have when you put it together.

Study the following.

You can show addition by using pictures.

Example: $2 + 3 = 5$ two   ▲ ▲
                          add   three   （▲ ▲ ▲）

                          answer   ▲ ▲ ▲ ▲ ▲

$5 + 1 = 6$ five   ● ● ● ● ●
                   add one   （●）

                   answer   ● ● ● ● ● ●

Use pictures to show the following.

1. $3 + 1 = 4$

2. $2 + 4 = 6$
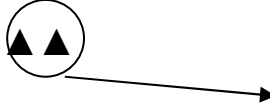
3. $5 + 3 = 8$

4. $6 + 3 = 9$

Study the following.

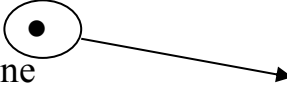You can show subtraction by using pictures.

Example: 6 - 2 = 4   six   ▲ ▲ ▲ ▲ ▲ ▲
                         Take away two

                         answer   ▲ ▲ ▲ ▲

         3 - 1 = 2   three ● ● ●
                         take away one

                         answer   ● ●

Use pictures to show the following.

1.   8 – 1 = 7

2.   7 – 4 = 3

3.   4 – 3 = 1

4.   6 – 2 = 4

Study the following.

In addition and subtraction
You sometimes see the following words.

addend (**ad**-end) – the numbers you are adding

minuend (**min**-yoo-end) – the number you are subtracting from

subtrahend (**suhb**-truh-hend) – the number you are subtracting

$$
\begin{array}{r}
2 \\
+ \ \ 4 \\
\hline
6
\end{array}
$$

    2 ← **addend**
+   4 ← **addend**
     6 ← sum

   10 ← **minuend**
–   6 ← **subtrahend**
    4 ← difference

Say each word out loud and write it in the blank.

addend_____
minuend_____
subtrahend_____

Write each definition in your own words.

addend

minuend

subtrahend

Study the following.

Subtraction is the opposite of addition.

Example: take 7 and <u>add 2</u> to get 9, then <u>subtract 2</u>, and you are back where you started at 7.

Write an example of subtraction being the opposite of addition.

Label the number that each arrow is pointing to.

```
   3 ←
+  2 ←
   5 ←
```

```
   8 ←
−  6 ←
   2 ←
```

Fill in the blank.

Subtraction is the opposite of _____.

 Label each number.

```
   7 ←
+  1 ←
   8 ←
```

```
   12 ←
−   2 ←
   10 ←
```

Study the following words.

multiply (**muhl**-tuh-plye) - to take a number and add it a certain amount of times.
   Example: $2 \times 3 = 2 + 2 + 2$

multiplication (muhl-tuh-pli-**kay**-shun) - the act of multiplying, a quicker way to add.

product (**prod**-uhkt) – the answer to a multiplication problem

divide (duh-**vide**) - to split up a number into groups of whatever you are dividing by

division (di-**vizh**-uhn) - the act of dividing. Example: 35 divided by 7 equals 5 (Take the number 35 and split it into groups of 7. There are 5 groups of 7 in the number 35.)

quotient (**kwoh**-shuhnt) - the answer to a division problem

Say each word out loud and write it in the blank.

multiply_____
multiplication_____
product_____
divide_____
division_____
quotient_____

Write each definition in your own words.

multiply

multiplication

product

divide

division

quotient

Write two sentences using each word.

multiply

1.

2.

multiplication

1.

2.

product

1.

2.

divide

1.

2.

division

1.

2.

quotient
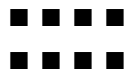
1.

2.

Matching.

multiply

to take a number and add it a certain amount of times.
   Example: $2 \times 3 = 2 + 2 + 2$

multiplication

the answer to a division problem

product

the act of multiplying, a quicker way to add.

divide

the answer to a multiplication problem

division

the act of dividing. Example: 35 divided by 7 equals 5 (Take the number 35 and split it into groups of 7. There are 5 groups of 7 in the number 35.)

quotient

to split up a number into groups of whatever you are dividing by

Study the following.

You can show multiplication using pictures. Each problem can be shown two different ways.

Examples: $2 \times 4 = 8$
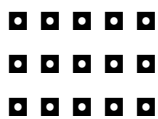
Two rows of 4 in each row   **or** 4 rows of 2 in each row

■ ■ ■ ■   ■■
■ ■ ■ ■   ■■
                                                                      ■■
                                                                      ■■

$3 \times 5 = 15$

three rows of 5 in each row   or   5 rows of three in each row

                                                                      ◨◨◨
◨ ◨ ◨ ◨ ◨   ◨◨◨
◨ ◨ ◨ ◨ ◨   ◨◨◨
◨ ◨ ◨ ◨ ◨   ◨◨◨
                                                                      ◨◨◨

Show the following multiplication problems using pictures.

1. $5 \times 4 = 20$

2. $6 \times 2 = 12$

3. $3 \times 3 = 9$

4. $10 \times 2 = 20$

Study the following.

You can show division two different ways using pictures.

Here is method 1.

Example: 10 ÷ 2 = 5

Write 10 symbols.   ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

Divide it into groups of 2 with circles .

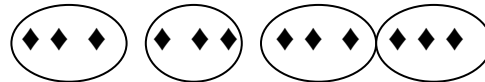Count the circled groups to get the answer.   1   2   3   4   5

The answer is 5.

Example: 12 ÷ 3 = 4

Write 12 symbols.   ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

Divide it into groups of 3 with circles .

Count the circled groups to get the answer.   1   2   3   4

The answer is 4.

Use method 1 to divide the following using pictures.

1. $9 \div 3 = 3$

2. $18 \div 6 = 3$

3. $20 \div 4 = 5$

4. $30 \div 10 = 3$

Study the following.

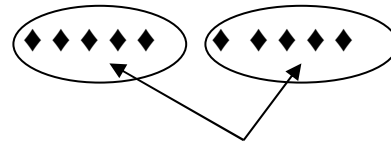You can show division two different ways using pictures.

Here is method 2.

Example: $10 \div 2 = 5$

Write 10 symbols.   ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

Divide it into 2 equal size groups with circles .

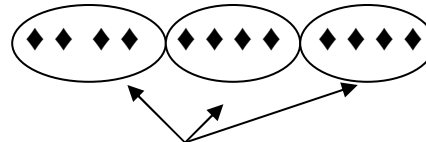Count the number in each circled group to get the answer.   5 in each group

The answer is 5.

Example: $12 \div 3 = 4$

Write 12 symbols.   ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

Divide it into 3 equal size groups with circles .

Count the number in each circled group to get the answer.   4 in each group.

The answer is 4.

Use method 2 to divide the following using pictures.

1.　　$9 \div 3 = 3$

2.　　$18 \div 6 = 3$

3.　　$20 \div 4 = 5$

4.　　$30 \div 10 = 3$

Use both methods to show the following in pictures.

1.a.
$6 \div 3 = 2$ method 1

1.b.
$6 \div 3 = 2$ method 2

2.a.
$8 \div 4 = 2$ method 1

2.b.
$8 \div 4 = 2$ method 2

3.a.
$12 \div 3 = 4$ method 1

3.b
$12 \div 3 = 4$ method 2

Study the following.

In multiplication and division the word **factor** is used quite often.

Occasionally you see the words **divisor** and **dividend**.

factor (fak-tur) - the numbers you are multiplying

divisor (di-vye-zur) – the number you are dividing by

dividend (div-i-dend) - the number you are dividing

```
   9  ← factor
×  5  ← factor
  45  ← product
```

$$16 \div 2 = 8$$

dividend   **divisor**   quotient

Say each word out loud and write it in the blank.

factor_____
divisor_____
dividend_____

Write each definition in your own words.

factor

divisor

dividend

Study the following.

Multiplication is the opposite of division.

Example: Take 3 and <u>multiply it by 5</u> to get 15. Then <u>divide it by 5</u> and you get 3, your original number.

Write an example of multiplication being the opposite of division.

Label the number that each arrow is pointing to.

```
    8←
×   5  ←
   40  ←
```

```
   16    ÷    2    =    8
    ↑         ↑         ↑
```


Fill in the blank.

Multiplication is the opposite of _____.

Label the number that each arrow is pointing to.


```
    6←
×   5  ←
     30 ←
```

```
   14    ÷    2    =    7
    ↑         ↑         ↑
```

Study the following words.

<u>equal</u> (**ee**-kwuhl) - the same as. (She has an equal number of left shoes as right shoes.)

<u>greater than</u> (**grayt**-ur **TH**an) - bigger or larger than. (8 is greater than 7.) (My left foot is greater than my right foot.)

<u>less than</u> (**less TH**an) - smaller than. (7 is less than 8.) (This paycheck is less than the one I got last week.)

Say each word out loud and write it in the blank.

equal_____

greater than_____

less than_____

Write each definition in your own words.

equal

greater than

less than

Write 2 sentences using each word.
equal
1.

2.

greater than
1.

2.

less than
1.

2.

Matching.

equal   larger than

greater than   smaller than

less than   the same as

Circle the pairs of numbers that are <u>equal</u>.

5, 5   8, 10   9, 9   7, 8   4, 9   10, 10   13,
13   1, 2   32, 32

Circle the number in each pair that is <u>greater than</u> the other.

5, ⑨   8, 9   7, 2   6, 4   0, 3   3, 4   8, 7
     1, 2

Circle the number in each pair that is <u>less than</u> the other.

⑤, 9   8, 9   7, 2   6, 4   0, 3   3, 4   8, 7
     1, 2

Arithmetic Review

Show the following in pictures.

1. $9 + 2 = 11$

2. $7 - 3 = 4$

3. $7 \times 2 = 14$

4. $15 \div 5 = 3$

Fill in the blanks.

5. _____ is the opposite of _____.

6. _____ is the opposite of _____.

Label the number that each arrow is pointing to.

```
   2 ←
+  2 ←
   4 ←
```

```
   8  ←
−  6 ←
   2 ←
```

```
   9 ←
×  5  ←
  45  ←
```

$$16 \quad \div \quad 2 \quad = \quad 8$$
$$\uparrow \qquad \uparrow \qquad \quad \uparrow$$