



MATHEMATICS

BONUS

Math Word Problems, 6-8

GRADES 6-8

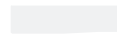
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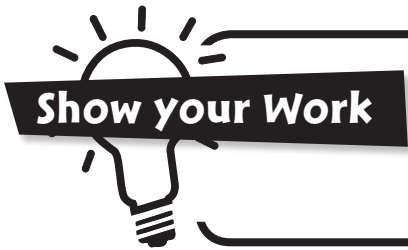
NAME: _____



Activity One



1a) Jenna, Charmaine, Rhonda and Aubrey go shopping for the afternoon at the mall. Jenna spends $\frac{3}{5}$ of her money, Charmaine spends 70% of her money, Rhonda spends .72 of her money and Aubrey spends $\frac{13}{20}$ of her money. Who has the largest percentage of money left?



Answer: _____

b) If Bert is older than Ken, Ken is older than Shawn, Shawn is younger than Bert and Laurie is older than Bert. List the people from oldest to youngest.

c) Find two numbers whose difference is 376. Now find three other pairs of numbers whose difference is 376.

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d) Joanie is flying to visit her friend, Cecelia, in Portland. It is a six hour flight and the girls live 1860 miles (2993 kilometers) apart. How fast will the plane average in Joanie's flight?



Answer: _____

NAME: _____



Activity Two

- 2a)** Jasper takes a road trip to the Grand Canyon this summer. On the way he records his car's odometer reading. He is careful about traveling the whole way at about the same speed and makes only one 30 minute stop to stretch his legs and gas up.

Time	Reading (miles)	Reading (kilometers)
9:00 am	12 344	19 866
10:00 am	12 396	19 949
11:00 am	12 447	20 080
12:00 noon	12 501	20 118
1:00 pm	12 534	20 172
2:00 pm	12 593	20 267

When did Jasper probably make his pit stop? Answer: _____

- b)** How many addition signs should be put between the digits of the number 987654321 and where should we put them to get a total of 99?

Answer: _____

- c)** Kyle and his parents are moving to the other end of the city. They have hired a moving company to move them. The company charges a flat fee of \$240.00 plus a rate of \$36.50 per hour. If their bill was \$678.00, how many hours did it take the company to move them?

Show your Work

Answer: _____

- d)** Jasmine's family purchased a new wide screen television for the family room. They put \$375.00 down on the set and made six monthly payments of \$212.50. At the end of the six months they still owe \$408.25. What was the original price of the television?

Answer: _____



Activity Three

3a) Complete the following chart.

Decimal	Percent	Fraction
0.75		
	30%	
		$\frac{2}{5}$
0.85		
	15%	
1.25		

b) Calculate the percent for each of the following.

i) 

Answer: _____%

ii) The percentage of sunflowers.



Answer: _____%

c) Nadine went to the store for a few groceries. Calculate the change Nadine would receive from a \$20 bill if she purchased the following items:

- 3 cans of soup at \$1.37 per can
- 4 lbs of hamburger at \$1.59 / lb (.72/kg.)
- 6 bottles of cola at .99¢ per bottle

Show your Work

Answer: _____

NAME: _____



Activity Four

4a) On Monday, a particular stock was worth \$75.00. On Tuesday, the price went up 10%. On Wednesday, it dropped by 20%. Then on Thursday, it rose by another 30%. What was it worth by then?

Show your Work

Answer: _____

b) Two unknown numbers have a sum of 8 and a product of 15. What are the two numbers?

Answer: _____

c) Determine which of the following pairs of fractions is larger by including either $>$ or $<$.

- i) $\frac{3}{5}$ $\frac{2}{4}$ ii) $\frac{7}{8}$ $\frac{9}{10}$ iii) $\frac{2}{7}$ $\frac{3}{8}$ iv) $\frac{4}{5}$ $\frac{5}{7}$

d) Determine the missing numerator or denominator.

- i) $\frac{4}{7} = \frac{\quad}{21}$ ii) $\frac{1}{5} = \frac{\quad}{30}$ iii) $\frac{3}{\quad} = \frac{9}{15}$ iv) $\frac{7}{8} = \frac{49}{\quad}$

e) In a math test with 40 questions, Charles had $\frac{4}{5}$ of the questions right and Barbara had 25% incorrect. Who had the better mark?

Show your Work

Answer: _____



Activity Five

5a) What number, when placed in the box, would make the following equation true?

i) $7 \times \square - 6 = 40 + 3$

ii) $9 \times 3 + \square = 46 - 16$

iii) $89 + 32 = 11 \times \square$

b) Sammy has a total of twenty toy trucks in his collection. Seven of them were red, three were blue, two were black and the rest were green. How many were green?

Answer: _____

c) Round the following to the nearest thousands.

i) 64 237 _____

ii) 3 672.12 _____

iii) 987 _____

d) Calculate the following.

i) $\frac{1}{3} \div \frac{1}{3} =$ _____

ii) $\frac{3}{4} \div \frac{2}{3} =$ _____

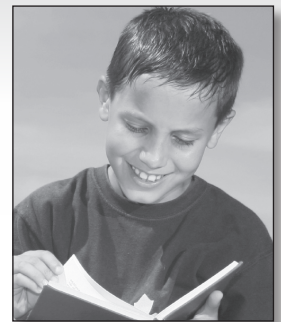
iii) $\frac{5}{8} \div \frac{3}{8} =$ _____

e) What number is missing from this pattern? 8, ____, 26, 35, 44

Answer: _____

f) For the school Read-a-thon this year, Jacob and friends read the following number of books.

Student	# of Books
Jacob	12
Jesse	31
Aaron	19
Nicholas	14
Sara	12



Investigate the following from these statistics:

Mean	Mode	Median

NAME: _____



Activity Six



6a) If $A:B = 7:3$ What is B if A is 35?

Answer: _____

b) If $C:D = 5:1$ What is C if D is 5?

Answer: _____

c) If $A:B = 1:11$ What is B if A is 4?

Answer: _____

d) If $C:D = 6:2$ What is C if D is 16?

Answer: _____

e) What are the reciprocals of the following fractions?

i) $\frac{3}{5}$ _____ ii) $\frac{9}{10}$ _____ iii) $\frac{1}{2}$ _____ iv) $1\frac{2}{3}$ _____

f) Multiply the following mixed numbers (show your work).

i) $1\frac{2}{3} \times 2\frac{1}{3} = \underline{\hspace{2cm}}$

ii) $4\frac{5}{8} \times 2\frac{1}{2} = \underline{\hspace{2cm}}$

g) What number does $2^2 \times 5 \times 3^3$ represent?

Answer: _____

1.

a) Convert to decimals. Jenna has .40 left, Charmaine .30 left, Rhonda .28 left and Aubrey .35 left. Therefore Jenna has the most left.

b) Laurie – Bert
– Ken – Shawn

c) Answers will vary (i.e. $400 - 24 = 376$)

d) 310 m/hr
(499 km/hr)

1A

2.

a) Between noon and 1:00 p.m. (Then he travels only 33 miles (53 km), compared to 50+ miles (80 km.) at all other times.)

b) $9+8+7+65+4+3+2+1 = 99$

c) $\$678 - \$240.00 = \$438 / \$36.50 = 12$ hours.

d) $\$212.50 \times 6 = \$1275 + \$375 + \$408.25 = \$2058.25$

2A

3.

a) 75% $\frac{3}{4}$
0.30 $\frac{3}{10}$
0.40 40%
85% $\frac{85}{100}$ or $\frac{17}{20}$
0.15 $\frac{15}{100}$ or $\frac{3}{20}$
125% $1 \frac{1}{4}$

b) i) 25%
ii) 40%

c) $\$20.00 - 16.41 = \3.59

3A

4.

a) $\$75 \times 1.1 = \82.50
 $\times .80 = \$66.00 \times 1.3 = \85.80

b) 3 and 5

c) i) $>$
ii) $<$
iii) $<$
iv) $>$

d) i) $12/21$
ii) $6/30$
iii) $3/5$
iv) $49/56$

e) Charles -
Charles ~ 32/40
Barbara ~ 30/40

4A

5.

a) i) 7
ii) 3
iii) 11

b) 8

c) i) 64 000
ii) 4 000
iii) 1000

d) i) 1
ii) $1^1/8$
iii) $1^2/3$

e) 17

f) Mean = 17.6
Mode = 12
Median = 14

5A

6.

a) B=15
b) C=25

c) B=44
d) C=48

e) i) $5/3$
ii) $10/9$
iii) $2/1$
iv) $3/5$

f) i) 3 8/9
ii) 11 9/16

g) 540

6A

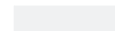


(these answers are for the 6 free bonus pages, see page 3 for download instructions)

NAME: _____



Activity One



1a) Charlie is saving up for an iPod. He has already saved \$110, and can put away \$20 a week toward his purchase. Write an expression that can be used to determine Charlie's savings after w weeks.

b) If the iPod costs \$250.00, how many weeks must Charlie save for the purchase?

c) What is the solution to this equation:

$$4x + 58 = 10x - 2$$

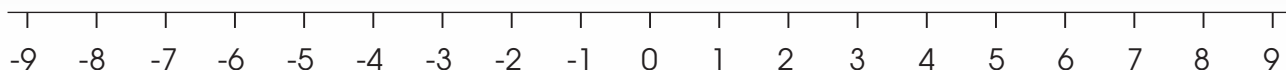


Show Your Work

Answer: _____

d) Graph the letter on the accompanying number line.

$$7 > x \geq -6$$



NAME: _____



Activity Two

2a) Ella is mailing a package to her cousin, Hope. She takes it to a courier where the flat rate for mailing a package is \$15 plus \$2 per pound. Write an expression to determine the total cost of mailing a package that weighs p pounds.

Answer: _____

b) Using the expression you developed in a), calculate the cost of a package that weighs 4 pounds.

Show Your Work

Answer: _____

c) Examine the input-output table shown below.

Input	Output
2	6
3	10
4	14
5	18

Which of these rules describes the data?

i) Multiply by 3 subtract 3

ii) Multiply by 3 add 2

iii) Multiply by 2 add 3

iv) Multiply by 4 subtract 2



Activity Three

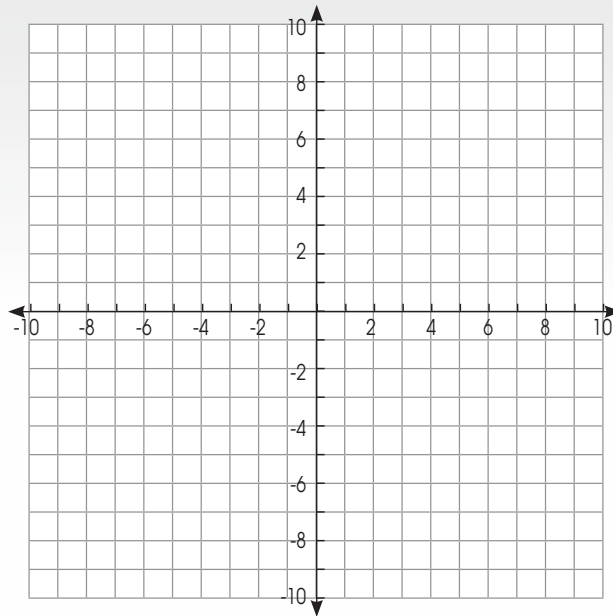
3a) Angelica is paid \$9 an hour at her summer job at the community pool. The formula to calculate her pay is:

$$P = 9h$$

Which of the following statements is true?

- i) P is the only variable. ii) h is the only constant.
 iii) P and h are variables. iv) P and h are constants.

b) Plot the following points: **A (3,5)**, **B (0,-8)**, **C (-8,-5)**, **D (-2, 2)**



c) René shows her steps in solving the following equation for z:

$$5z - 2 = 13$$

$$\text{Step 1: } 5z - 2 + 2 = 13 - 2$$

$$\text{Step 2: } 5z = 11$$

$$\text{Step 3: } z = 11 / 5$$

$$\text{Step 4: } z = 2 \frac{1}{5}$$

In which step did René make an error?

- i) Step 1 ii) Step 2 iii) Step 3 iv) Step 4



Activity Four

- 4) Jeremiah's school is holding a carwash fundraiser. The school spent \$35 for the equipment and supplies needed for the carwash. It will cost them \$2 for water/supplies for each car washed. They will charge \$4 for each car washed.
- a) Jeremiah's school had a most successful day washing a total of 120 cars. Use the following expression to calculate the total cost to wash x cars: $C = 35 + 2x$

Show Your Work

Answer: _____

- b) Which of the following expressions would best calculate their profits for the day if x = number of cars washed?

i) $P = 4x - (35 + 2x)$ ii) $P = 35 + 2x + 4x$ iii) $P = 4x \times 2x + 35$ iv) $P = 4x$

- c) On the number line below, graph the solution to x :

$$2x + 3 = 13$$



- d) Expand and simplify these equations.

i) $2(x - 5y) + 5(x + 3y)$

ii) $(2x + y)(5x - 2y)$



Activity Five

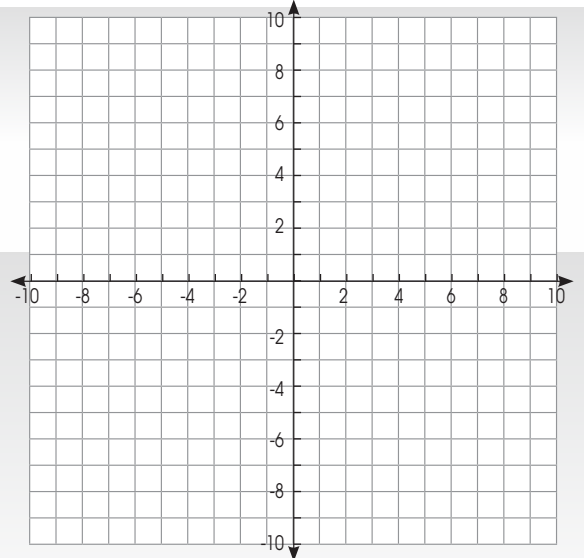
5a) Plot the following coordinates on the accompanying chart:

$$A = (-8, 2)$$

$$B = (0, 7)$$

$$C = (5, -6)$$

$$D = (9, 7)$$



b) Which pattern follows the following rule: multiply by 2, subtract by 3, add 2?

i) 4, 7, 14, 21, 28

ii) 7, 13, 25, 49, 97

iii) 5, 10, 14, 20, 26

iv) 6, 11, 21, 31, 40

c) Solve:

$$\text{i) } 4x + 13 = 25$$

$$\text{ii) } 7y - 4 = 37 - 6$$

$$\text{iii) } 2(4x - 3) = x + 1$$

d) Tim went to an amusement park. It cost him \$35 for admittance and \$5 per ride. He goes on 14 rides. Using an algebraic expression, where r = rides, determine the cost of Tim's day at the park.

Show Your Work

Answer: _____



Activity Six

6a) Write equations for the following sentences.

- i) Ten less than a number is 6. _____
- ii) Two greater than a number is 3. _____
- iii) The sum of 8 and a number is 11. _____
- iv) Four more than 3 times a number is equal to 13. _____

b) Find the value of x if: $x + 3^2 = 12$

Show Your Work

Answer: _____

c) Patterns can be observed in many construction jobs. When Seema was helping her dad build a fence in the backyard, for instance, she noticed that if she counted the number of vertical posts, subtracted one and multiplied by two, she could find the number of horizontal boards. Fill in the chart below indicating the horizontal boards.

Number of Vertical Posts	Number of Horizontal Posts
2	
4	
5	
7	

1.

a) $C = 110 + 20w$

b) $250 = 110 + 20w$
 $250 - 110 = 20w$
 $140 = 20w$
 $w = 140 / 20$
 $w = 7$ weeks

c) $4x + 58 = 10x - 2$
 $4x + 58 - 58 = 10x - 2$
 -58
 $4x = 10x - 60$
 $4x - 10x = -60$
 $-6x = -60$
 $-x = -10$
 $x = 10$

d) Label from -6 to 6.

1A

2.

a) $C = 15 + 2p$

b) $C = 15 + 2(4)$
 $C = 15 + 8$
 $C = 23$

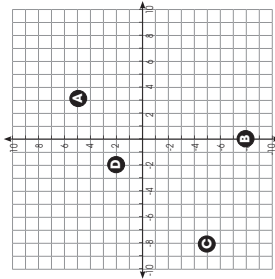
c) iv) Multiply by 4
 subtract 2

2A

3.

a) iii) P and h are variables

b)



c) i) Step 1

3A

4.

a) $C = 35 + 2x$
 $C = 35 + 2(120)$
 $C = 35 + 240$
 $C = 275$

b) i) $P = 4x - (35 + 2x)$

c) Label 5

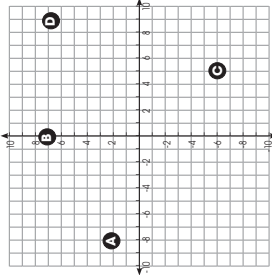
d) i) $2x - 10y + 5x + 15y$
 $= 7x + 5y$

ii) $(2x \times 5x) + (2x \times -2y)$
 $+ (y \times 5x) + (y \times -2y)$
 $= 10x^2 - 4xy + 5xy - 2y^2$
 $= 10x^2 + xy - 2y^2$

4A

5.

a)



b) ii) 7, 13, 25, 49, 97

c) i) $4x + 13 = 25$
 $4x = 25 - 13$
 $4x = 12$
 $x = 3$

ii) $7y - 4 = 37 - 6$
 $7y = 37 - 6 + 4$
 $7y = 35$
 $y = 5$

iii) $2(4x - 3) = x + 1$
 $8x - 6 = x + 1$
 $8x - x = 6 + 1$
 $7x = 7$
 $x = 1$

d) $C = 35 + 5r$
 $C = 35 + 5(14)$
 $C = 35 + 70$
 $C = 105$

5A

6.

a) i) $x - 10 = 6$
 ii) $x + 2 = 3$
 iii) $8 + x = 11$
 iv) $3x + 4 = 13$

b) $x + 3^2 = 12$
 $x + 9 = 12$
 $x = 12 - 9$
 $x = 3$

c) 2 6 8 12

6A

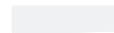


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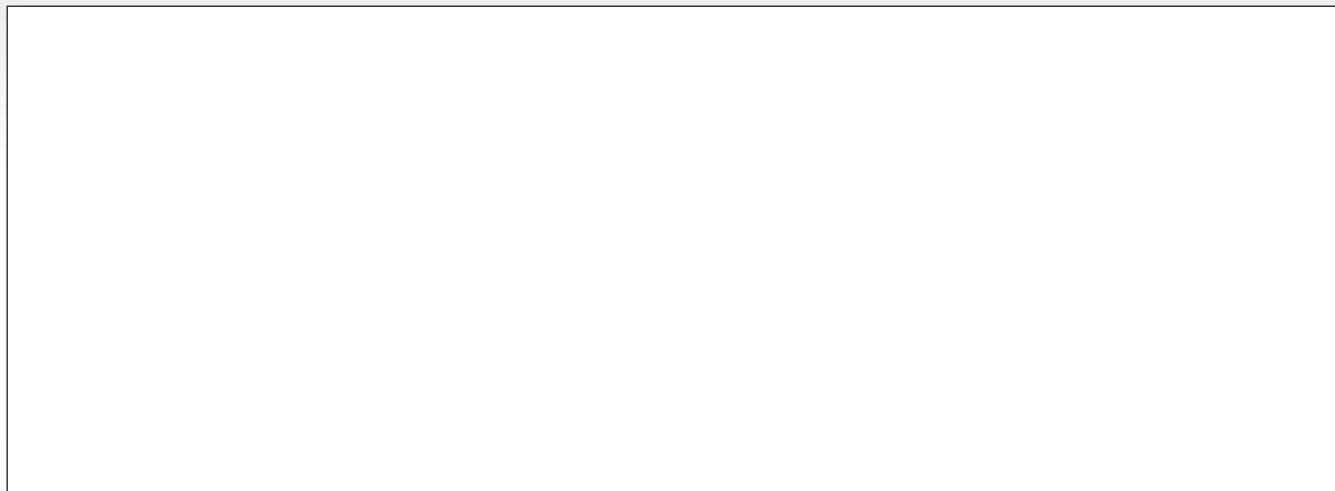


Activity One



Decomposing Shapes

1a) Divide the rectangle into two triangles.



b) Put the two triangles together. How many different shapes can be made with the two triangles? Draw the shapes below.



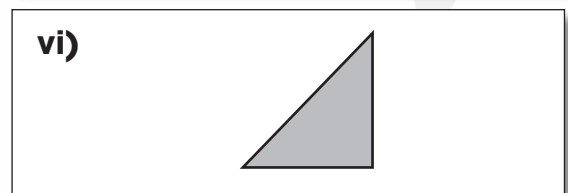
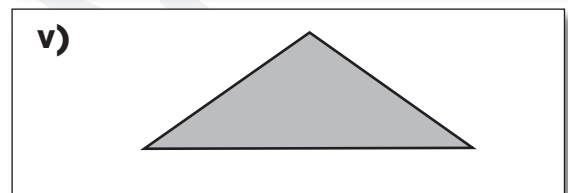
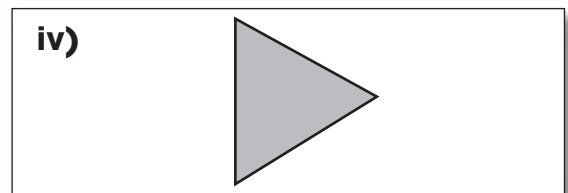
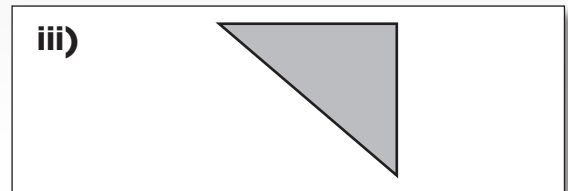
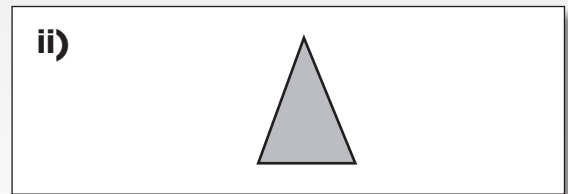
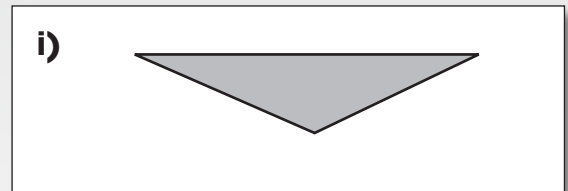
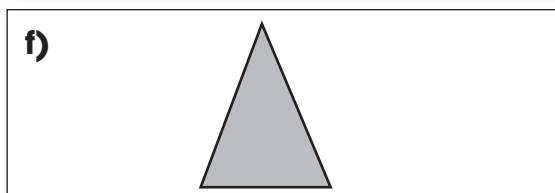
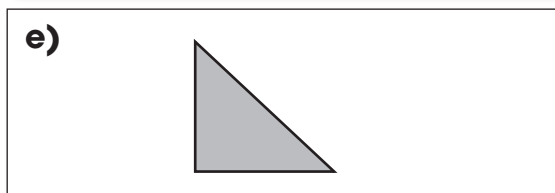
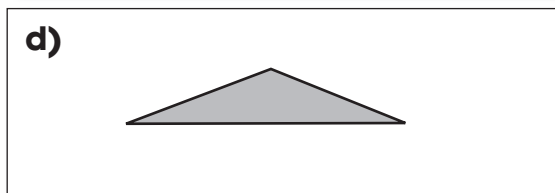
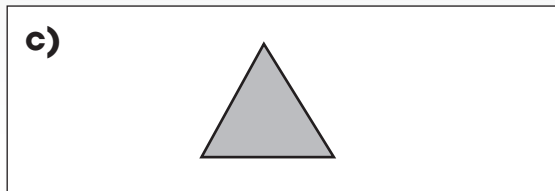
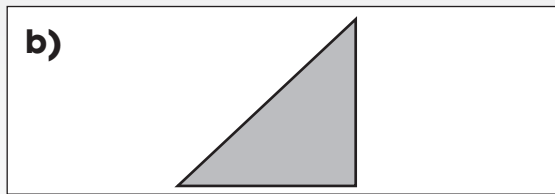
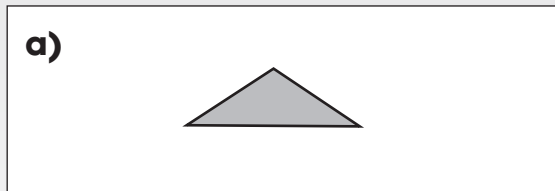


Activity Two

Similar Triangles

2) Two triangles are similar if one is a different size than the other, and that is their only difference. Similar triangles will have the same angles and their sides will be in the same proportion.

Match up the similar triangles by connecting them with a line.



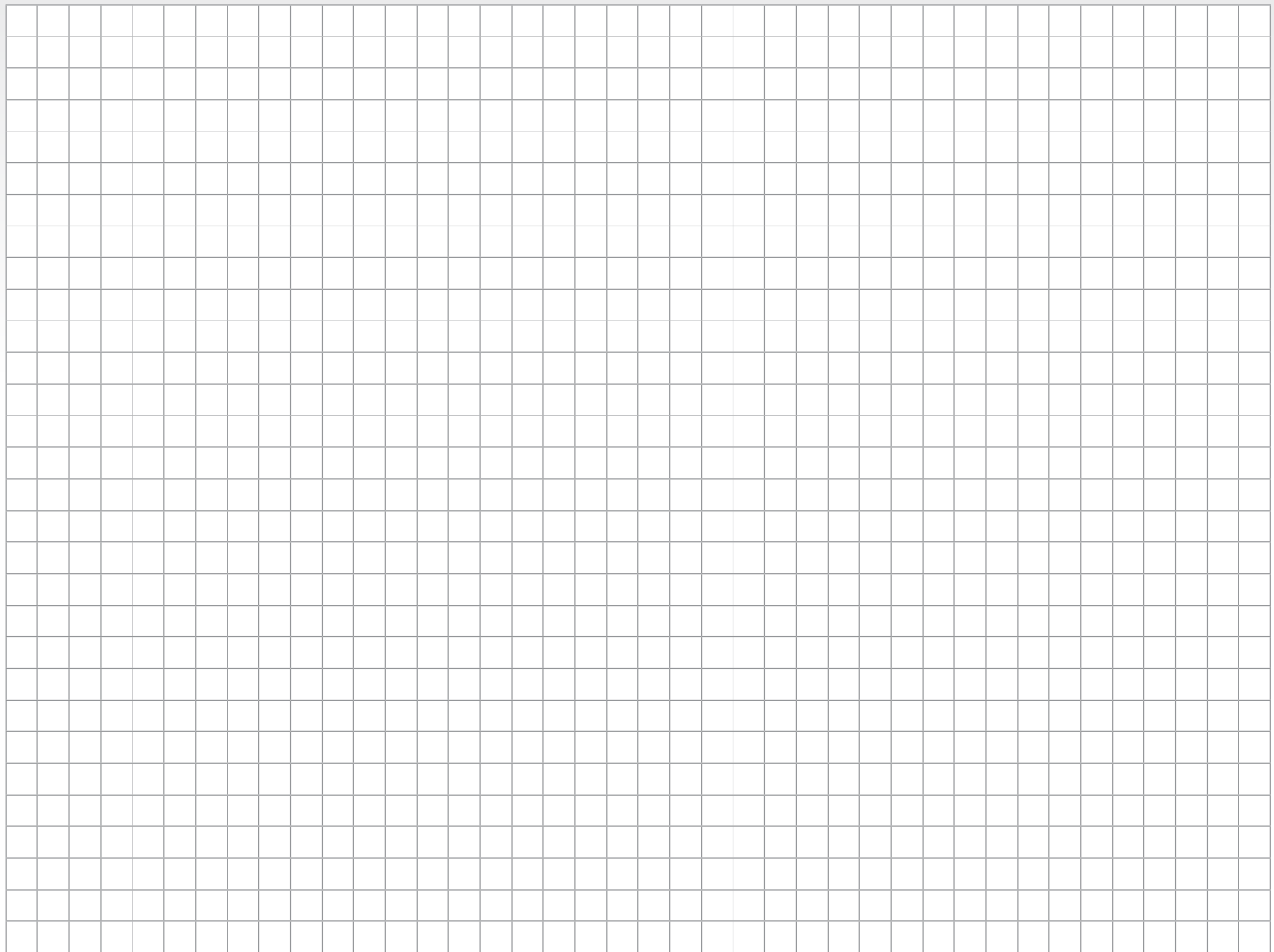
NAME: _____



Activity Three

Making Rectangular Prisms

- 3) Using centimeter or inch cubes, how many rectangular prisms can be made using 24 cubes? Draw the different rectangular prisms in the grid below. What is the volume of each rectangular prism?

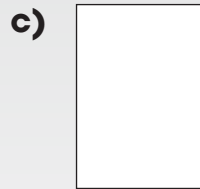
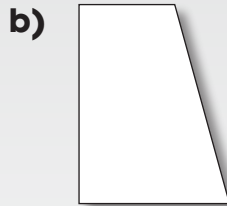


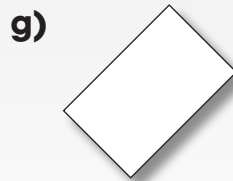


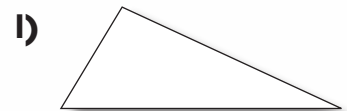
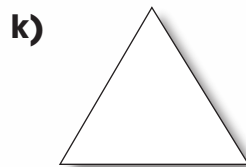
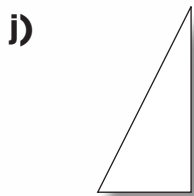
Activity Four

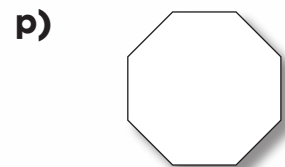
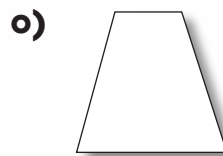
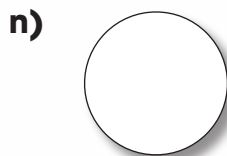
How Many Lines of Symmetry?

4) Trace each shape onto another piece of paper. Cut out and fold each shape. How many lines of symmetry does each shape have?









NAME: _____



Activity Five

Drawing Angles

5a) Use a protractor to draw the following angles.

i) 45°

ii) 115°

iii) 10°

iv) 65°

v) 90°

vi) 135°

vii) 30°

viii) 100°

ix) 180°

b) Which angles are acute angles? _____

c) Which angles are obtuse angles? _____

d) Which angle makes a straight line? _____

NAME: _____



Activity Six

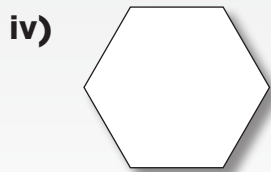
Seeing 90° Angles

6a) Name each shape.



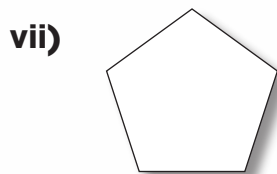


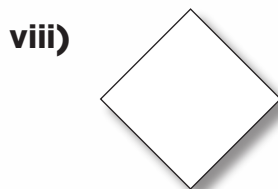


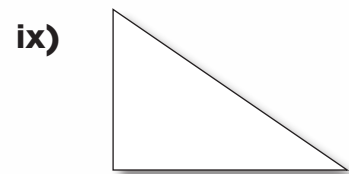












b) Which shapes have at least one 90° angle? _____

c) Which shapes are symmetrical? _____

d) Which shape does not have any angles? _____

1.

Answers may vary. Possible answers include: parallelogram and triangle.

1A

2.

a) v

b) vi

c) iv

d) i

e) iii

f) ii

2A

3.

Answers may vary. Possible answers include:

- $l = 4, w = 3, h = 2;$
- $l = 8, w = 3, h = 1;$
- $l = 12, w = 2, h = 1;$
- $l = 6, w = 2, h = 2;$
- $l = 6, w = 4, h = 1$

The volume of each rectangular prism will be 24 cubic units.

3A

4.

a) 1

b) 0

c) 2

d) 1

e) 4

f) 0

g) 4

h) 1

i) 2

j) 0

k) 3

l) 0

m) 0

n) infinite

o) 1

p) 8

4A

5.

a) Check to make sure the student drew the appropriate angles.

b) i) 45° , iii) 10° , iv) 65° ,
vii) 30°

c) ii) 115° , vi) 135° ,
viii) 100° , ix) 180°

d) ix) 180°

5A

6.

a) i) Rectangle

ii) Parallelogram

iii) Trapezoid

iv) Hexagon

v) Square

vi) Oval

vii) Pentagon

viii) Rhombus

ix) Right triangle

b) i) Rectangle,
v) Square,
viii) Rhombus,
ix) Right triangle

c) i) Rectangle,
iii) Trapezoid,
iv) Hexagon,
v) Square, vi) Oval,
vii) Pentagon,
viii) Rhombus

d) vi) Oval

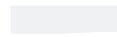
6A



(these answers are for the 6 free bonus pages, see page 3 for download instructions)



Activity One

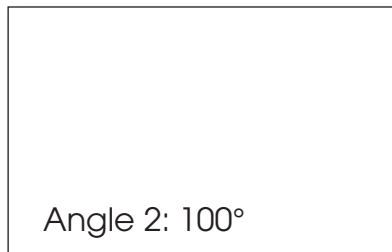


1a) Conversions

- | | | |
|----------------------|---------------------------|-------------------------|
| 1.5 tons = _____ lbs | 6 lbs = _____ oz | 12,000 lbs = _____ tons |
| 5 cm = _____ mm | 2.5 km = _____ m | 182 mm = _____ cm |
| 80 L = _____ kL | 10 quarts = _____ gallons | 6 pints = _____ cups |
| 5 ft = _____ in | 2.5 yd = _____ ft | 7.5 yard = _____ in |

b) Angle Measurement

Draw the three angles described below using a protractor or other angle measurement device.



c) Short Answers

- i) What is the perimeter of a rectangle with a length of 5 cm (2 in) and a width of 8 cm (3 in)?

Answer: _____

- ii) Which temperature is closest to the freezing point?

25°F (-4°C) or 35°F (2°C)

- iii) The radius of a circle is half as long as this part of a circle. Name the part.

Answer: _____

- iv) What is the area of a triangle with a base of 4 inches (10 cm) and a height of 5 inches (13 cm)?

Answer: _____

NAME: _____



Activity Two

- 2a) Tad noticed that the average elephant weighs at least 2000 pounds (907 kilograms) when it is an adult. Based on this data, how much did he determine a group of twenty adult elephants would weigh?**

Answer: _____

- b) Amy recorded a temperature equal to 20 degrees below freezing on the Celsius (Fahrenheit) scale. What temperature did she record?**

Answer: _____

- c) A triangle has a height of 4 inches (10 cm). Each side equals 7 inches (18 cm). What is the area of this triangle?**

Answer: _____

- d) Ruiz spent fifty-five dollars on lacrosse equipment at a local sporting goods store. After tax, his total was \$57.75. What percentage of tax did he pay on his purchase?**

Answer: _____

- e) Li's father fills up his car with an average of 12 gallons (45 liters) of gas each week. During one complete year, how many total gallons of gas does his car use?**

Answer: _____

- f) Grace ran a 400 meter dash at school. Her time for the dash during three heats was 50.1 seconds, 49.8 seconds, and 52.4 seconds. What was her average time for the three heats?**

Answer: _____



Activity Three

- 3a) Jaime needed at least 30 quarts (28 liters) of ice cream to serve as a dessert at a party. She had 5 gallons (19 liters) of ice cream already. How many more gallons (liters) will she have to purchase to make sure she can serve 30 quarts at her party?**

Answer: _____

- b) A plane flies a round trip of 3,510 miles (5,649 kilometers). It makes a stop two-thirds of the way through each trip. How many miles (kilometers) had it flown when it stopped for the first time?**

Answer: _____

- c) A rectangle has a length of 5 inches (13 cm) and a width that is three times that amount. What is the perimeter of the rectangle?**

Answer: _____

- d) A truck weighs 18 tons. If it is traveling on a route that excludes trucks over 30,000 pounds, how many tons would this truck need to shed in order to travel on the route?**

Answer: _____

- e) Karl measures an angle. It is equal to one and one-third of a right angle. What is the measurement of the angle?**

Answer: _____

- f) The students in Ms. Chen's science class are conducting an experiment. In it, they are slowly boiling water with a starting temperature of 68°F (20°C). How much hotter will the water have to get before it boils?**

Answer: _____

- g) The area of a square is 64 square cm (9 square in). How long is each side?**

Answer: _____



Activity Four

- 4a) Greg drew a small circle using a compass. His circle had a diameter of 8 cm (3 in). What was the area of Greg's circle?**

Answer: _____

- b) Jesse changes the water in his 10 gallon (38 liter) fish tank once every two weeks. During the course of one year, how many gallons (liters) of water has Jesse used to fill his tank?**

Answer: _____

- c) Prasanth measured a triangle. The first angle in the triangle measured 45° . The second angle measured 100° . What was the measure of the third angle?**

Answer: _____

- d) Carlos runs 5 kilometers (3 miles) a day three times a week. During a four week period, how many total meters (feet) will he run if he continues his current running schedule?**

Answer: _____

- e) Emily is filling a large square box with white paper to use as snow during a school play. If all sides of the box are 12 inches (30 cm), what is the volume of the box?**

Answer: _____

- f) The students in Mr. DeLanoro's class were building scale models of their school. The scale ratio used on the models was 1 cm = 18 inches. If the height of the model of their school was 35.25 cm, how tall is the school in feet?**

Answer: _____

- g) Alex was conducting a science experiment on how much a pumpkin grew over the course of the month. At the beginning of the month, the pumpkin weighed 15 ounces (425 grams). By the end of the month, it had weighed 12.5 pounds (5.7 kilograms). How much had the pumpkin grown during the course of the month?**

Answer: _____

NAME: _____



Activity Five

5a) Jeffrey is measuring the sides of a cube. Each side is 4 cm (2 in). What is the surface area of the cube?

Answer: _____

b) Maria's swimming pool holds 22,000 gallons (83,255 liters) of water. Each year, her family has to replace approximately 5 percent of the water. How much water does Maria's family replace each year in terms of quarts (milliliters)?

Answer: _____

c) The diameter of a circle is 10 cm (4 in). What is the area of the circle?

Answer: _____

d) Chen runs in a standard 26.2 mile (42.2 kilometer) marathon. If he completes the race in 4 hours, 20 minutes, what is his rate of running per mile (kilometer)?

Answer: _____

e) Dana drew a map of his yard. In the middle of the yard is a square garden. The portion of the garden is 1 to 500. If Dana's garden on the map is 1.5 square feet (0.14 square meter), how large is the garden?

Answer: _____

f) Mrs. Jefferson drew an angle on the whiteboard. The angle was $\frac{1}{3}$ the length of a straight angle. How large is the angle?

Answer: _____

g) Adele is measuring a square in class. The area of a square is 36 square centimeters (6 square inches). How many millimeters (inches) long is each side?

Answer: _____

h) An equilateral triangle had a side measure of 7 inches (18 cm). What is the perimeter of the triangle?

Answer: _____



Activity Six

6) It's All In Proportion

For the following project, select a small object in the classroom. Your job is to measure its length, or width, or height (or find its area). Then, you are to do the following, with the supervision of an adult:

- a)** Write the name of the object. List the measurement you found.

Answer: _____

- b)** Measure an object that is twice the size of the object. Name the object. List the measurement. Then, list the scale for the object compared to the first object.

Answer: _____

- c)** Measure an object that is three times the size of the object. Name the object. List the measurement. Then, list the scale for the object compared to the first object.

Answer: _____

- d)** Measure an object that is four times the size of the object. Name the object. List the measurement. Then, list the scale for the object compared to the first object.

Answer: _____

- e)** Measure an object that is five times the size of the object. Name the object. List the measurement. Then, list the scale for the object compared to the first object.

Answer: _____

When you are done, share your results in class. Find similarities and differences between the items that were measured, using the same scales.

1.

- a)** 3000 lbs
96 oz
6 tons
50 mm
2500 m
18.2cm
.08 kL
2.5 gallons
12 cups
60 in
7.5ft
270 in

b) Pictures should look like angles described.

c) i) 26 cm (10 in)

ii) 35°F (2°C)

iii) diameter

iv) 10 sq. in. (65 sq. cm)

1A

2.

a) 40,000 pounds
(18,140 kg)

b) - 20°C (12°F)

c) 14 sq. inches
(90 sq. cm)

d) 5 percent

e) 624 gallons
(2340 liters)

f) 50.767 seconds

2A

3.

a) 3 gallons (she will have 2 quarts extra)
(9 liters)

b) 1170 miles
(1883 km)

c) 40 inches (104 cm)

d) 3 tons (6,000 pounds)

e) 120 °

f) 144°F (80°C)

g) 8 cm (3 in)

3A

4.

a) 50.24 sq. cm
(7.07 sq. in)

b) 260 gallons
(988 liters)

c) 35°

d) 60,000 m
(190,080 feet)

e) 1728 in³
(27000 cm³)

f) 52.875 feet

g) 185 oz (5700 g) or
11.56 lbs (5.28 kg)

4A

5.

a) 96 sq. cm (24 sq. in)

b) 4400 quarts
(4,162,750 ml)

c) 78.5 sq. cm (12.56 sq. in)

d) 6.05 mph (9.75 kph) or .1 mp/h

e) 750 sq. ft (70 sq. m)

f) 60 °

g) 60 mm (2.45 in)

h) 21 in (54 cm)

5A

6.

Answers may vary.

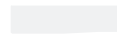


(these answers are for the 6 free bonus pages, see page 3 for download instructions)

NAME: _____



Activity One



1) The temperatures at Kits Beach for the last 9 days were as follows:

32°C, 28°C, 30°C, 29°C, 33°C, 32°C, 27°C, 34°C, 32°C
(90°F, 82°F, 86°F, 84°F, 91°F, 90°F, 81°F, 93°F, 90°F)

Answer the following questions.

a) What is the mean temperature?

b) What is the mode for the temperatures?

c) What is the median for the temperatures?

d) What is the range for the temperatures?

e) Is there an outlier?

f) What is the probability that the temperature will be over 30°C on the tenth day?

g) What inferences can you make about the data above?

h) Which graph or graphs would best represent the data?

NAME: _____



Activity Two

2a) Create groups of five. Each member of the team will shoot 10 shots each on a hockey net in the gym. Tally all the shots and the goals scored.

Shots on Goal	Goals Scored

b) Gather the data from all the groups and complete the chart below.

Team	Number of Goals Scored

c) Create a graph to represent the data from the chart showing all the teams goals in the space below.

d) What is the probability of each team increasing their score by ten with 20 more shots on the goal? Explain.



Activity Three

3a) William recorded the amount of time he spent doing chores each day in minutes for one week. Here are his results:

12, 9, 18, 3, 8, 14, 21

i) What is the mean and mode?

ii) What is the median and range?

b) Kyra tallied the number of songs she bought each week for her iPod. Here are her results:

5, 2, 4, 2, 7, 16, 3

i) What is the mean and mode?

ii) What is the median and range?

iii) Is there an outlier? If so, what is it?

iv) How does the outlier change the outcome of the mean, median, and mode?

c) What is a possible set of numbers if the mode is 6 and the median is 12?

d) Swimmers Danya and Lorna swam in five heats. These are their times.

Danya = 1.23, 1.18, 2.03, 1.53, 1.36

Lorna = 1.13, 1.19, 1.48, 1.49, 1.25

Danya

Lorna

i) What is the mode for both girls?

ii) What is the mean for both girls?

iii) What is the median for both girls?

NAME: _____



Activity Four

4) In the tally chart below, record how many pets each of your classmates have in their home.

Number of Pets										
Frequency										

- a) What is the mean?
- b) What is the mode?
- c) What is the median?
- d) What is the range?
- e) What is the outlier? Why?

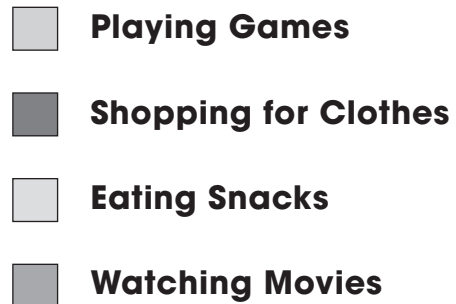
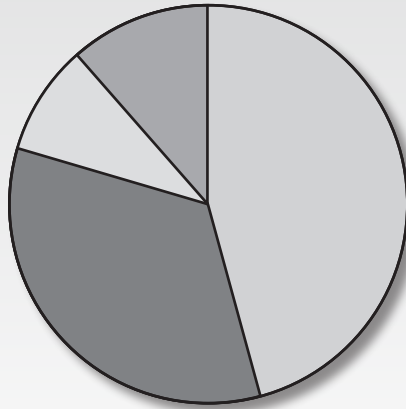
f) Create a graph with the information above in the space below.

g) What other information could have been asked during the survey to create greater detail on a graph?



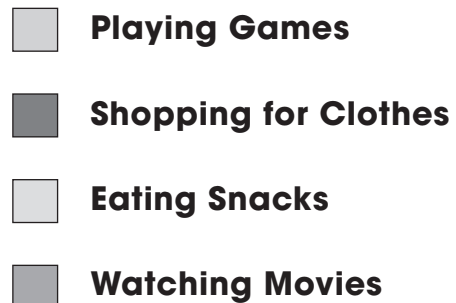
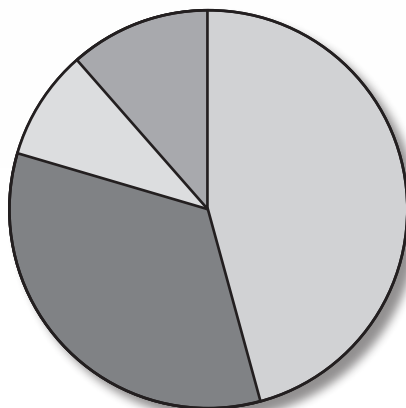
Activity Five

- 5) Below is a circle graph showing how much time ShayInn spends doing different activities.



Using the Circle graph above, answer the questions below.

- What activity does ShayInn spend the most time doing?
- What activity does ShayInn spend the least amount of time doing?
- What information is missing from the graph?
- How would you make the graph more informative?
- Re-graph the information gathered in question d) onto the circle graph below.





Activity Six



- 6a) Number and label the grid below.
- b) Place a 😊 in various squares on the grid followed by the letter. Example: 😊 A
- c) Create a pattern as you plot your 😊.
- d) What pattern did you create?
- e) Was the pattern easy to create on this graph? Why or why not?
- f) List the coordinates for each 😊 you put on the grid.

1.

a) 31°C (87°F)

b) 32°C (90°F)

c) 32°C (90°F)

d) 7 (12)

e) No

f) 56% Likely

g) Answers may vary.

h) Answers may vary.

1A

2.

Answers will vary.

2A

3.

a) i) Mean = 12,
Mode = none

ii) Median = 12,
Range = 18

b) i) Mean = 6,
Mode = 2

ii) Median = 4,
Range = 14

iii) Outlier = 16

iv) Answers may vary.

c) Answers may vary.

d) i) Danya = none,
Lorna = none

ii) Danya = 1.47,
Lorna = 1.31

iii) Danya = 1.36,
Lorna = 1.25

3A

4.

Answers will vary.

4A

5.

a) Playing Games

b) Eating Snacks

c) Answers may vary. Possible answer includes: values.

d) Answers may vary. Possible answers include: values, headings, and time.

5A

6.

Answers will vary.

6A



(these answers are for the 6 free bonus pages, see page 3 for download instructions)

NAME: _____



Activity One

a) List the following numbers in order from greatest to least:

i) 1.7021, 17.012, 17.021, 1.7012 _____

ii) 0.0053, 0.1053, 0.0353, 0.0035 _____

b) Write the following numbers in words.

i) 234 812 _____

ii) 1 349 025 _____

c) Mrs. Gillette has 24 students in her Instrumental Music class. If 8 play the clarinet and the rest play the flute, what is the ration of clarinet to flute players? _____: _____

d) Solve the following.

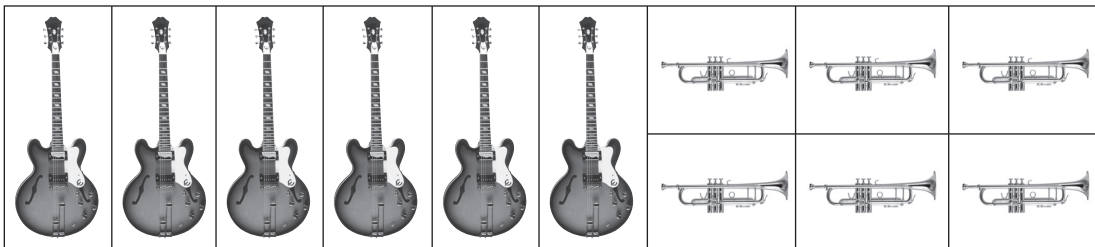
i) $36 - 48 \div 8 =$

ii) $124 - 24 - (10 + 20 \div 5) =$

iii) $(80 \div 8) + 12 \times 12 =$

iv) $66 \div 6 + (12 + 12 + 12) =$

e) What percentage of the musical instruments below are guitars? _____



f) Use >, <, or = to compare the fractions shown below.

i) $6/8$ $3/4$

ii) $1/2$ $3/5$

iii) $7/10$ $4/7$

g) Calculate the mean, the median and the mode for the following.

i) 43, 61, 55, 27, 43, 59, 62

ii) 112, 98, 118, 96, 100, 118, 107



Activity Two

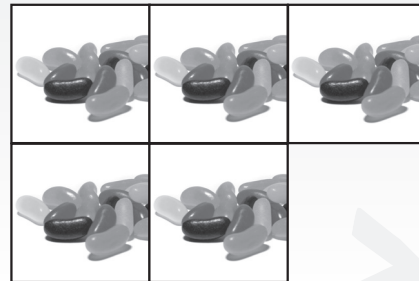
a) Round each number to the nearest 1000.

- i) 11 349 _____ ii) 501 _____ iii) 172 601 _____

b) Write each number in expanded form.

- i) 15 603 = _____
 ii) 263 499 = _____

c) For the following picture, write as many multiplication and division sentences that you can.



Answer:

d) Multiply the following.

i)
$$\begin{array}{r} 7159 \\ \times 37 \\ \hline \end{array}$$

ii)
$$\begin{array}{r} \$50.25 \\ \times 33 \\ \hline \end{array}$$

iii)
$$\begin{array}{r} 49.2 \\ \times 7.1 \\ \hline \end{array}$$

iv)
$$\begin{array}{r} \$225.90 \\ \times 82 \\ \hline \end{array}$$

e) What is the least common multiple (LCM) of the following numbers (excluding 1).

i) 3 and 7 =

ii) 5 and 2 =

iii) 6 and 10 =

f) Solve the following.

i) $8^2 =$

ii) $12^2 + 2^2 =$

iii) $4^3 =$

iv) $6^3 + 6^1 =$



Activity Three

- a) The following chart shows the fraction of Sara's total time spent at each attraction at an amusement park last summer. Convert these fractions into percentages.

		Fraction	Percent
i)	The Hurricane	$\frac{3}{10}$	
ii)	Laser Tag	$\frac{1}{10}$	
iii)	Bumper Boats	$\frac{1}{5}$	
iv)	Rock Wall	$\frac{2}{5}$	

- b) Record the following numbers in the accompanying place value charts.

i) 45691.003

Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths

ii) 70834.321

Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths

- c) Write the improper fraction equivalent for each mixed number.

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

ii) $8 \frac{1}{3} =$

iii) $5 \frac{2}{5} =$

iv) $9 \frac{3}{8} =$

v) $7 \frac{2}{7} =$

vi) $10 \frac{5}{9} =$

- d) Find the value of each percent.

i) 15% of 2500

ii) 30% of 360

- e) Circle the larger fraction in each pair.

i) $\frac{2}{5}$ or $\frac{2}{6}$

ii) $\frac{1}{3}$ or $\frac{2}{5}$

iii) $\frac{1}{2}$ or $\frac{3}{5}$

- f) Solve the following.

i) $0.01 \times 620 =$ _____

ii) $23.7 \times 100 =$ _____

iii) $10^2 \times 45 =$ _____



Activity Four

a) Reduce the following to their simplest form.

i) $5/25 =$

ii) $8/72 =$

iii) $12/144 =$

iv) $9/81 =$

b) Multiply the following.

i)
$$\begin{array}{r} \$361.98 \\ \times \quad 44 \\ \hline \end{array}$$

ii)
$$\begin{array}{r} 77.902 \\ \times \quad 0.7 \\ \hline \end{array}$$

iii)
$$\begin{array}{r} \$2470.50 \\ \times \quad 371 \\ \hline \end{array}$$

iv)
$$\begin{array}{r} 0.8061 \\ \times 0.84 \\ \hline \end{array}$$

c) Write the next numbers in the following patterns.

i) 121, 132, 143, _____, _____

ii) 77, _____, 61, 53, _____

d) Solve the following.

i) $(12 \times 3) (6 \times 4) =$

ii) $12 + 10 \div 5 - (4 \times 2) =$

iii) $2.6 + 3.2 (7) =$

iv) $4 \times 6 \times 4 \times 8 =$

v) $1/3 \times 1/2 =$

vi) $3/8 \div 4/5 =$

vii) $0.001 \times 539 =$

viii) $10^2 \times 23.4 =$

ix) $98 \times 10^3 =$

x) $\$45.00 \div 9 =$

xi) $2/5 \times 1/2 \times 3/4 =$

xii) $3/7 \div 2/3 =$

NAME: _____



Activity Five

a) Find the value of each percent.

i) 30% of 60 =

ii) 80% of 40 =

iii) 75% of 32 =

iv) 15% of 300 =

b) Use <, >, or = to compare the fractions shown below.

i) $\frac{1}{8}$ $\frac{4}{32}$ ii) $\frac{7}{10}$ $\frac{12}{18}$ iii) $\frac{6}{11}$ $\frac{15}{30}$

c) Write the place value of the underlined digit.

i) 13 467.371 _____ ii) 901 342.331 _____

d) Write the following number in expanded form.

982 754 = _____

e) What is the greatest common factor of the following pairs of numbers?

i) 10 and 15 ii) 16 and 24

f) Show each of the following fractions as a percent.

i) $\frac{5}{20}$ = ii) $\frac{3}{60}$ = iii) $\frac{7}{25}$ = iv) $\frac{19}{50}$ =

g) Divisor = 7, Dividend = 936, Remainder = 5. What is the quotient? _____

h) Divisor = 8, Dividend = 407, Remainder = 7. What is the quotient? _____

NAME: _____



Activity Six



a) Round each number to the nearest hundredth.

i) $34.671 =$ _____

ii) $2.901 =$ _____

iii) $18.111 =$ _____

b) Multiply or divide the following.

i) $\begin{array}{r} \$23.99 \\ \times 46 \\ \hline \end{array}$

ii) $\begin{array}{r} 901.6 \\ \times 2.5 \\ \hline \end{array}$

iii) $\begin{array}{r} \$156.75 \\ \times 143 \\ \hline \end{array}$

iv) $\begin{array}{r} 23.781 \\ \times 0.006 \\ \hline \end{array}$

v) $2/3 \times 5 \times 1/2 =$

vi) $0.20 \times 54 =$

vii) $2/7 \div 8/9 =$

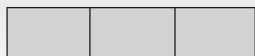
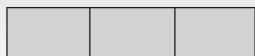
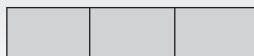
viii) $3/5 \div 2/6 \times 1/3 =$

c) Write the following numbers in words.

i) $65\,234 =$ _____

ii) $178\,935 =$ _____

d) What fraction does the following represent?



$=$ _____

e) Find the prime factors of the following numbers.

i) $24 =$

ii) $60 =$

iii) $28 =$

1.

a)

- i) 17,021, 17,012, 1,7021, 1,7012
- ii) 0.1053, 0.0353, 0.0053, 0.0035

b)

- i) two hundred thirty-four thousand eight hundred twelve
- ii) one million three hundred forty-nine thousand twenty-five

c) 8:16

d)

- i) 30 ii) 86
- iii) 154 iv) 47

e) 50%

f)

- i) = ii) < iii) >

g)

- i) Mean = 50, Median = 55, Mode = 43
- ii) Mean = 107, Median = 107, Mode = 118

1A

2.

a)

- i) 11 000 ii) 1000
- iii) 173 000

b)

- i) 10 000 + 5000 + 600 + 3
- ii) 200 000 + 60 000 + 3000 + 400 + 90 + 9

c)

- $9 \times 5 = 45, 5 \times 9 = 45,$
- $45 \div 9 = 5, 45 \div 5 = 9$

d)

- i) 264 883 ii) \$1658.25
- iii) 349.32 iv) \$18 523.80

e)

- i) 21 ii) 10 iii) 30

f)

- i) 64 ii) 148
- iii) 64 iv) 222

2A

3.

a)

- i) 30% ii) 10%
- iii) 20% iv) 40%

b)

Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
4	5	6	9	1	0	0	3
7	0	8	3	4	3	2	1

c)

- i) 9/2 ii) 25/3
- iii) 27/5 iv) 75/8
- v) 51/7 vi) 95/9

d)

- i) 375 ii) 108

e)

- i) 2/5 ii) 2/5 iii) 3/5

f)

- i) 6.2 ii) 2370 iii) 4500

3A

4.

a)

- i) 1/5 ii) 1/9
- iii) 1/12 iv) 1/9

b)

- i) \$15 927.12
- ii) 54,5314
- iii) \$916555.50
- iv) 0.677124

c)

- i) 154, 165 ii) 69, 45

d)

- i) 864 ii) 6
- iii) 25 iv) 768
- v) 1/6 vi) 15/32
- vii) 0.539 viii) 2340
- ix) 98000 x) \$5.00
- xi) 6/40 or 3/20
- xii) 9/14

4A

5.

a)

- i) 18 ii) 32
- iii) 24 iv) 45

b)

- i) = ii) > iii) >

c)

- i) hundredths
- ii) hundred thousands

d)

- $900\ 000 + 80\ 000 + 2000 + 700 + 50 + 4$

e)

- i) 5 ii) 8

f)

- i) 25% ii) 5%
- iii) 28% iv) 38%

g) 133

h) 50

5A

6.

a)

- i) 34.67
- ii) 2.90
- iii) 18.11

b)

- i) \$1103.54
- ii) 2254
- iii) \$22415.25
- iv) 0.142686
- v) 10/6 or 1 2/3
- vi) 10.8
- vii) 18/56 or 9/28
- viii) 18/30 or 3/5

c)

- i) sixty-five thousand
- ii) two hundred thirty-four
- iii) one hundred
- iv) seventy-eight
- v) thousand nine
- vi) hundred thirty-five

d) 3 2/3

e)

- i) $2 \times 2 \times 2 \times 3$
- ii) $2 \times 2 \times 3 \times 5$
- iii) $2 \times 2 \times 7$

6A

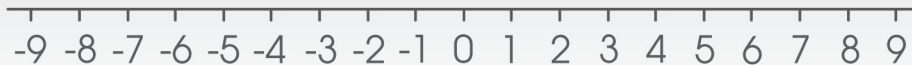




Activity One

a) Graph the following on the accompanying number line:

$x < 6 \text{ and } x > -2$



b) Find the value of $5 \times x$ if:

i) $x = 5$ _____

ii) $x = 9$ _____

iii) $x = -4$ _____

iv) $x = -16$ _____

c) Solve:

i) If $6 \times y = 48$ and $z - y = 4$, what is z ? $z =$ _____

ii) If $7 \times y = 56$ and $z - y = 1$, what is $z \times y$? $z \times y =$ _____

d) What is the 14th figure in this pattern?



14th figure = _____

e) Write an algebraic expression to represent:

i) y is increased by 13 = _____

ii) Twice $b =$ _____

iii) x cubed = _____

iv) The quotient of 12 and $y =$ _____

f) Solve each equation for the variable given.

i) $5a - 9 = 16$

ii) $7y + 14 = 28$

iii) $8c \div 4 = 12$

iv) $15x \times 4 = 180$

g) What is the missing term in these patterns?

i) 77, 62, _____, 32, 17

ii) -912, -813, _____, -615, -516

h) Solve the following.

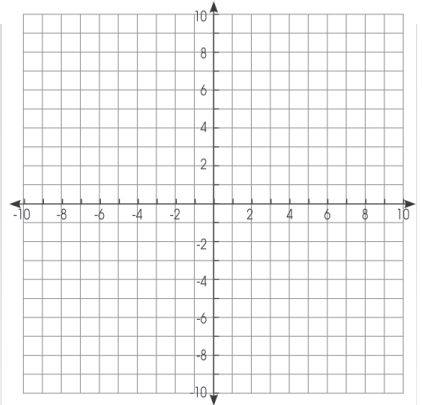
i) Since $9 \times 12 = 108$;
then $108 \div 12 =$ _____

ii) Since $7 \times 14 = 98$;
then $98 \div 7 =$ _____



Activity Two

- a) Plot the following equation on the grid: $y = 2x + 1$**
Draw a straight line through the coordinates.
First - complete the chart below.



x	-3	-2	-1	0	1	2	3
$y = 2x + 1$							

- b) Simplify the following expressions.**

i) $(x^2 + 2x - 1) + 3x(3 - 2x)$

ii) $3(x^2 - x + 5) + 2x(2x + 1)$

iii) $2(x^2 - 5x + 2) - x(3x - 4)$

iv) $7(-3x^2 + 4x + 9) + 2x(2x - 0)$

- c) Evaluate each algebraic expression with the given values.**

i) $y - 2x$; where $x = 3, y = 7$

ii) $3a + 2b$; where $a = -3, b = 3$

iii) $2c \times d - 5$; where $c = 2, d = 1$

iv) $3(2y + 2x)$; where $x = 2, y = 4$

v) $3(2x - y)^2$; where $x = 3, y = 1$

vi) $7(x \times 3y)^2$; where $x = 4, y = 2$

- d) Write each as a verbal expression.**

i) $x^3 =$ _____

ii) $b - 5 =$ _____

- e) Solve the following.**

i) If $2a + 4 = 10$ and $a + b + 5 = 14$,

a = _____ and b = _____

ii) If $c + d = 9$ and $c + d + e = 12$

e = _____

iii) If $7 + f = 11$ and $3 + f + g = 15$

f = _____ and g = _____

- f) Find each Quotient.**

i) $10 \div -5 =$ _____

ii) $-20 \div -4 =$ _____

iii) $55 \div -11 =$ _____

iv) $-64 \div 8 =$ _____



Activity Three

a) Solve these equations.

i) $-24 = -3x - 5x$

ii) $72 = 3 - 6x + 9$

iii) $4x - 3 = -12 + 10x$

iv) $2x + 12 = -6x - 4$

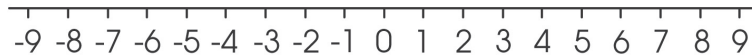
v) $9.6 \div 1.6 = x$

vi) $(4 \div 2) \times 2x = 8 \div 2$

vii) $x + (3 \times 4) = 7$

viii) $-8x + 2 = -4x + 6$

b) Graph the solution to x on the number line. $x - 7 = -4$



c) Solve each equation for the variable given.

i) $5a = 65$, $a = \underline{\hspace{2cm}}$

ii) $7b = 63$, $b = \underline{\hspace{2cm}}$

iii) $12c = 132$, $c = \underline{\hspace{2cm}}$

iv) $9d = 144$, $d = \underline{\hspace{2cm}}$

v) $8e = -96$, $e = \underline{\hspace{2cm}}$

vi) $-14f = 56$, $f = \underline{\hspace{2cm}}$

d) On the following grid, cite the coordinates for the five objects indicated.



= _____



= _____



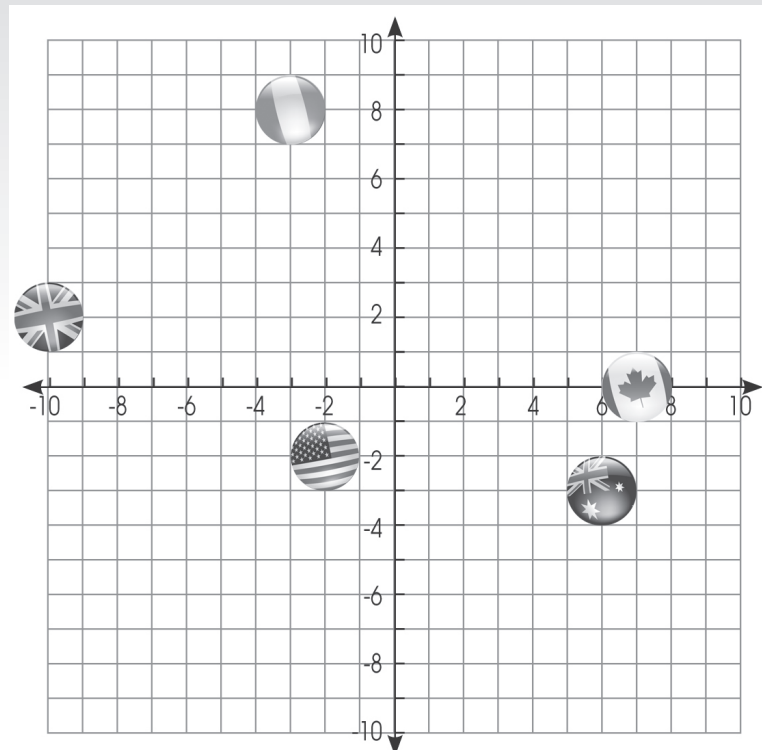
= _____



= _____



= _____



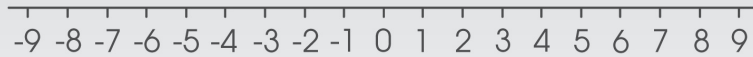
NAME: _____



Activity Four

a) Graph the solution to x on the number line.

$$-(-2) + 2x + 3 = 9$$



b) Evaluate each algebraic expression with the given values.

i) $3y - x$; where $x = 3, y = 7$

ii) $5a + 7b$; where $a = -2, b = 6$

iii) $-4c \times 2d - 13$; where $c = -4, d = 2$

iv) $-2(4y + 5x)$; where $x = -2, y = -4$

v) $4(3x - 2y)^2$; where $x = 2, y = 1$

vi) $-3(2x \times y)^2$; where $x = 3, y = 2$

c) Write each number as a scientific notation.

i) $800 =$ _____

ii) $7000 =$ _____

iii) $0.00042 =$ _____

d) Write each as a standard notation.

i) $0.7 \times 10^{-3} =$ _____

ii) $6.66 \times 10^5 =$ _____

iii) $3.5 \times 10^{-4} =$ _____

e) Solve the following.

i) Since $9 \times 15 = 135$

then $135 \div 15 =$ _____

ii) Since $3510 \div 45 = 78$

then $45 \times 78 =$ _____

f) Complete the following patterns.

i) $-21, -35, -49, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}.$

ii) $17, 8, -1, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}.$

g) Simplify each expression.

i) $\frac{-90x^2}{18x} =$

ii) $\frac{16y}{48y^3} =$

iii) $\frac{36}{36x+72} =$



Activity Five

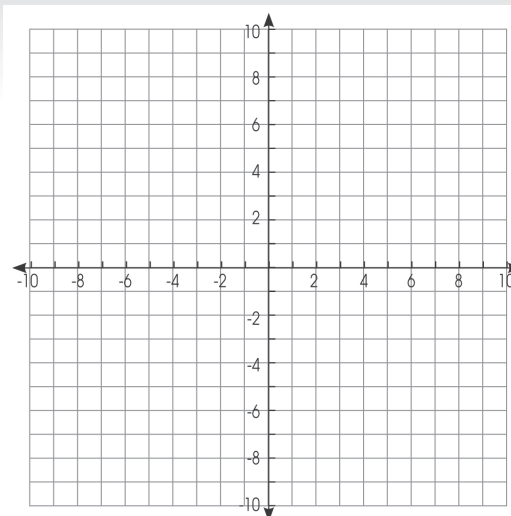
a) Plot the coordinates on the following grid.

$$A = (-2, 4)$$

$$B = (0, -3)$$

$$C = (8, 0)$$

$$D = (-5, -5)$$



b) What is the missing term in these patterns?

i) $-23, -12, \underline{\hspace{2cm}}, 10, 21$

ii) $701, 751, \underline{\hspace{2cm}}, 851$

c) Simplify and solve each equation.

i) $\sqrt{X} = 5$

ii) $\sqrt{X} = 13$

d) Find each sum.

i) $(-0.15) + (-0.12) = \underline{\hspace{2cm}}$

ii) $(-1.6) + (3.8) = \underline{\hspace{2cm}}$

e) Solve the following.

i) $a + 36 = 92$

ii) $8 \times b = 64$

iii) $552 + c = 601$

iv) $-2.71 + d = 8.8$

v) $23 - (-e) = 41$

vi) $77.2 + f - 13.5 = 77.2$

vii) $g + 12.03 = 34.2$

viii) $h + 2.1 = 4.5 - 1.2$

ix) $9i + 11 = 65$

x) $-3.2 + j = 7.1 - 0.09$



Activity Six

a) Solve the following.

i) If $4a + 6 = 18$ and $a + b + 6 = 16$, $a = \underline{\hspace{2cm}}$ and $b = \underline{\hspace{2cm}}$

ii) If $-2c + 4 = 14$ and $c + d = 11$ $d = \underline{\hspace{2cm}}$

iii) If $12 + f = 23$ and $6 + f + g = 23$ $f = \underline{\hspace{2cm}}$ and $g = \underline{\hspace{2cm}}$

b) Find each Quotient.

i) $26 \div -13 = \underline{\hspace{2cm}}$ ii) $-6 \div -4 = \underline{\hspace{2cm}}$ iii) $17 \div -1 = \underline{\hspace{2cm}}$ iv) $-12 \div 3 = \underline{\hspace{2cm}}$

c) Solve and simplify each expression.

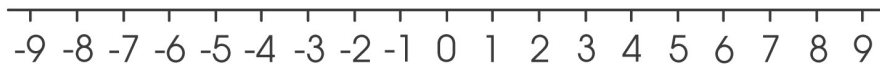
i) $\frac{-22x^2}{11x} =$

ii) $\frac{5y}{35y^3} =$

iii) $\frac{18}{36x+54} =$

iv) $\frac{12y-3}{27} =$

d) Graph the following on the accompanying number line. $x \leq 6$ and $x > -7$



e) Simplify the following expression.

i) $5(x^2 + 3x^2 + 3x + 7 - 4) - x^2 + 3x$

ii) $-2y^2 + 3x^2 - 3x + y^2 + 14y - 6x - 7y$

iii) $-2x(3x - 5) - x(x + 5) - x(-x + 8)$

iv) $-2x^2 - 3 - 7x - x^2 - 2x - 3x$

v) $3x^2 + 6 - 3y^2 - 2x + 3(x^2 - 3)$

vi) $2.4 + 34 - 12 + 2x + 3x^2$

vii) $7(x + 3) - 2x(x - 1)$

viii) $14(x^2 + 2x - 3) + 4x(x - 2)$

1.**a)**

Label -1 to 5 on the number line.

b)

- i) 25 ii) 45 iii) -20
iv) -80

c)

- i) $z = 12$
ii) $z \times y = 72$

**d)****e)**

- i) $y + 13$ ii) $2b$
iii) x^3 iv) $12 \div y$

f)

- i) $a = 5$ ii) $y = 2$
iii) $c = 6$ iv) $x = 3$

g)

- i) 47 ii) -714

h)

- i) 9 ii) 14

1A**2.****a)**

Label the following coordinates: (-3, -5), (-2, -3), (-1, -1), (0, 1), (1, 3), (2, 5), (3, 7)

b)

- i) $-5x^2 + 11x - 1$
ii) $7x^2 - x + 15$
iii) $-x^2 - 6x + 4$
iv) $-17x^2 + 28x + 63$

c)

- i) 1 ii) -3
iii) -1 iv) 36
v) 75 vi) 4032

d)

- i) A number cubed
ii) Five subtracted from a number

e)

- i) $a = 3, b = 6$
ii) $e = 3$
iii) $f = 4, g = 8$

f)

- i) -2 ii) 5 iii) -5
iv) -8

2A**3.****a)**

- i) $x = 3$ ii) $x = -10$
iii) $x = 1.5$ iv) $x = -2$
v) $x = 6$ vi) $x = 1$
vii) $x = -5$ viii) $x = -1$

b)

i) Label 3 on the number line.

c)

- i) $a = 13$ ii) $b = 9$
iii) $c = 11$ iv) $d = 16$
v) $e = -12$ vi) $f = -4$

d)

= (-2, -2)



= (7, 0)



= (-10, 2)



= (6, -3)



= (-3, 8)

3A**4.****a)**

Label 2 on the number line.

b)

- i) 18 ii) 32
iii) 51 iv) 52
v) 64 vi) -432

c)

- i) 8×10^2 ii) 7×10^3
iii) 4.2×10^{-4}

d)

- i) 0.0007 ii) 666000
iii) 0.00035

e)

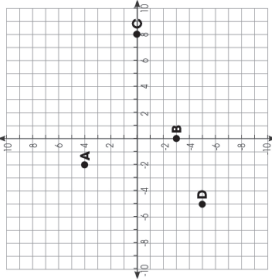
- i) 9 ii) 3510

f)

- i) -63, -77 ii) -10, -19

g)

- i) $-5x$ ii) $1/3y^2$
iii) $1/1x + 2$

4A**5.****a)****b)**

- i) -1 ii) 801

c)

- i) 25 ii) 169

d)

- i) -0.27 ii) 2.2

e)

- i) $a = 56$ ii) $b = 8$
iii) $c = 49$ iv) $d = 11.51$
v) $e = 18$ vi) $f = 13.5$
vii) $g = 22.17$
viii) $h = 1.2$ ix) $j = 6$
x) $j = 10.21$

5A**6.****a)**

- i) $a = 3, b = 7$
ii) $d = 16$
iii) $f = 11, g = 6$

b)

- i) -2 ii) 1.5
iii) -17 iv) -4

c)

- i) $-2x$ ii) $1/7y^2$
iii) $1/(2x + 3)$
iv) $(4y - 1)/9$

d)

Label from -6 to 6 on the number line.

e)

- i) $19x^2 + 18x + 15$
ii) $-y^2 + 3x^2 - 9x + 7y$
iii) $-6x^2 - 3x$
iv) $-3x^2 - 12x - 3$
v) $6x^2 - 3y^2 - 2x - 3$
vi) $3x^2 + 2x + 24.4$
vii) $-2x^2 + 9x + 21$
viii) $18x^2 + 20x - 42$

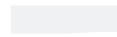
6A

(these answers are for the 6 free bonus pages, see page 3 for download instructions)

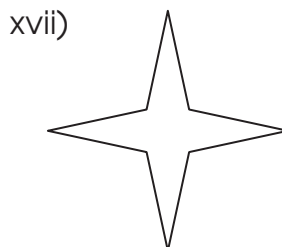
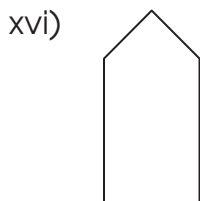
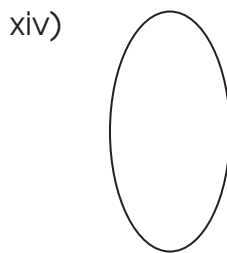
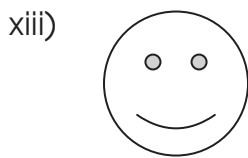
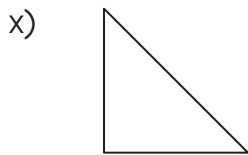
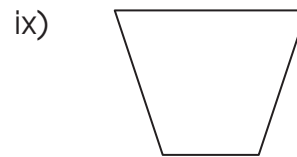
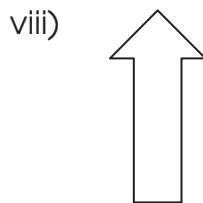
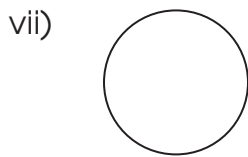
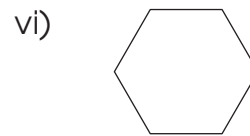
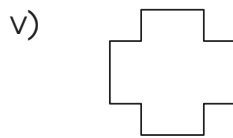
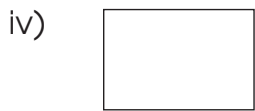
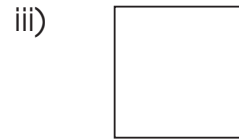
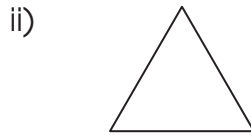
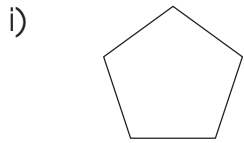
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Activity One



a) Two shapes are congruent if they are the same size and the same shape. Draw the congruent shape for the following shapes.

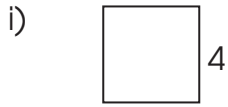


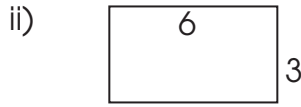
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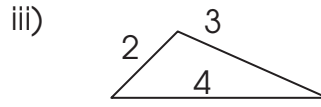


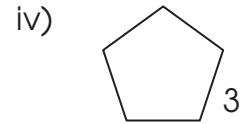
Activity Two

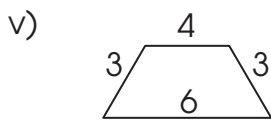
a) Find the perimeter of each shape. Add the sides together to find the perimeter.

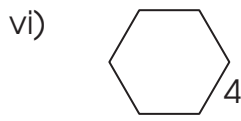


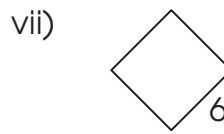


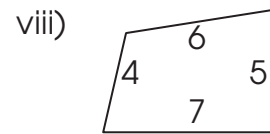












b) Draw 4 different rectangles with perimeters of 24 units.

i)

ii)

iii)

iv)

c) Draw 4 different triangles with perimeters of 15 units.

i)

ii)

iii)

iv)

d) Draw 4 different trapezoids with perimeters of 20 units.

i)

ii)

iii)

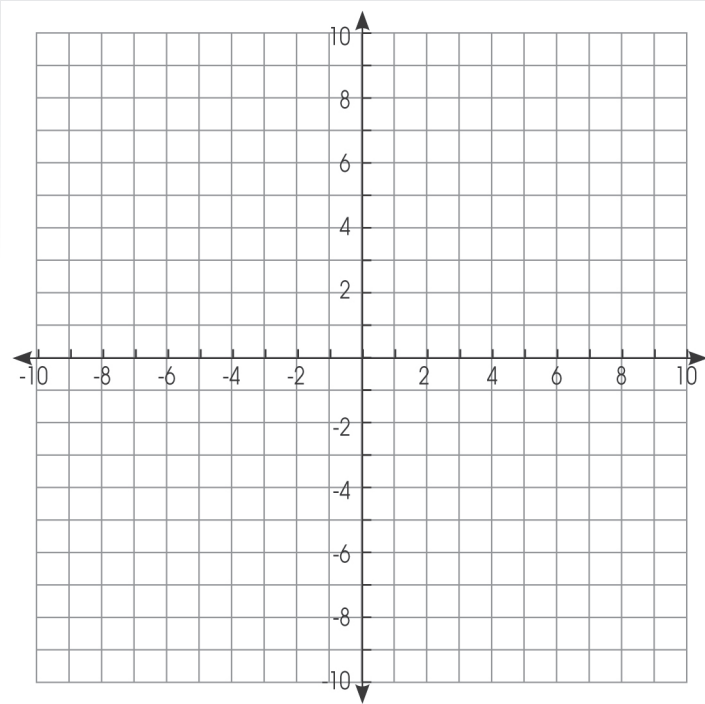
iv)

NAME: _____



Activity Three

a) Draw a different shape in each quadrant. Write the coordinates for each shape in the chart below.



Shape 1

X	Y

Shape 2

X	Y

Shape 3

X	Y

Shape 4

X	Y

NAME: _____



Activity Four

a) Transform each shape.

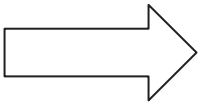
i) 90° Rotation



iii) 180° Rotation



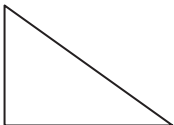
v) Horizontal Reflection



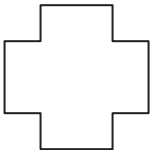
vii) Vertical Reflection



ix) 90° Rotation



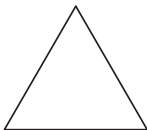
xi) Translation



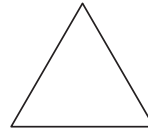
xiii) 90° Rotation



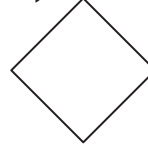
xv) 90° Rotation



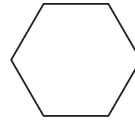
ii) Translation



iv) Horizontal Reflection



vi) 90° Rotation



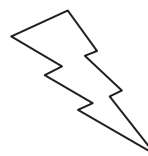
viii) Vertical Reflection



x) Horizontal Reflection



xii) Horizontal Reflection



xiv) Translation



xvi) Vertical Reflection



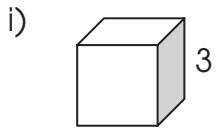
NAME: _____

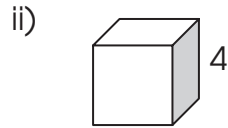


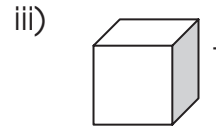
Activity Five

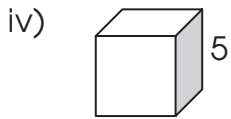
a) Find the surface area for each cube.

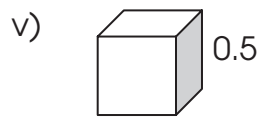
Formula: $6a^2$ ($a = \text{side}$)

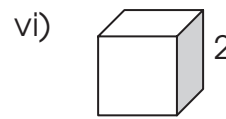






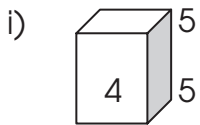


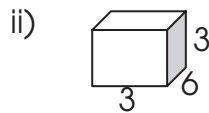


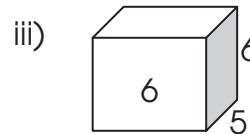


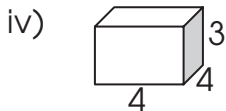
b) Find the surface area for each rectangular prism.

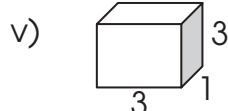
Formula: $2ab + 2bc + 2ac$ ($abc = \text{height, width, length}$)

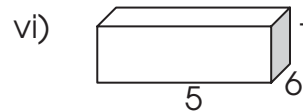






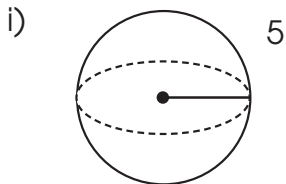


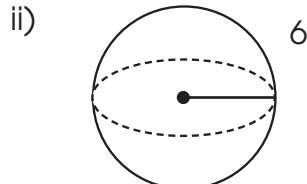


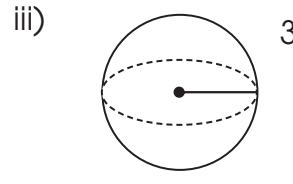


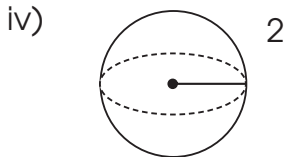
c) Find the surface area for each sphere.

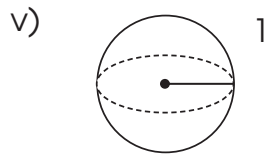
Formula: $4\pi r^2$ ($\pi = 3.14$)

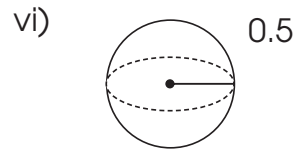










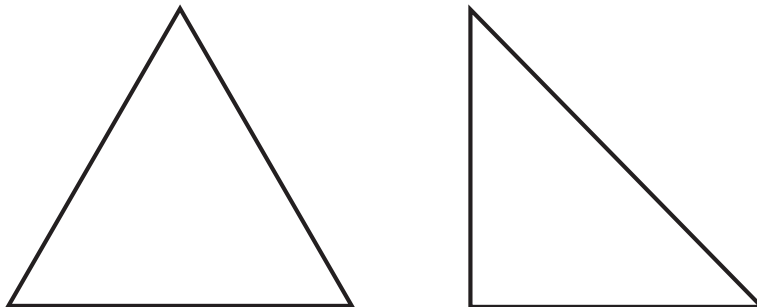


NAME: _____

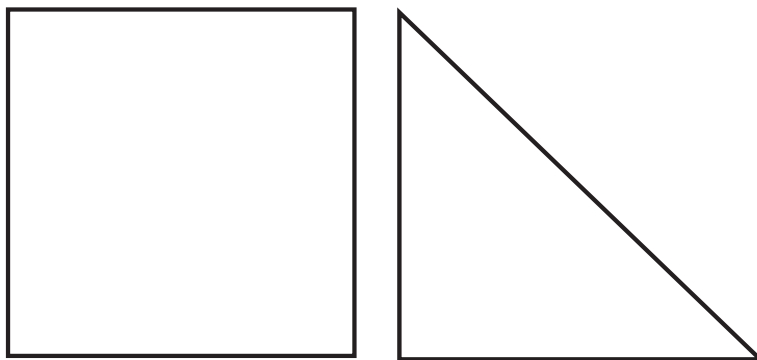


Activity Six

- a) How many different shapes can you make using the two triangles below? Label each shape you make. (Trace the triangles onto another sheet of paper and cut them out. Use them as tracing patterns to make the different shapes.)



- b) How many different shapes can you make using the square and triangle below? Label each shape you make. (Trace the triangles onto another sheet of paper and cut them out. Use them as tracing patterns to make the different shapes.)



1.

a)

Check to make sure the student drew the congruent shape.

1A

2.

a)

- i) 16 units ii) 18 units
- iii) 9 units iv) 15 units
- v) 16 units vi) 24 units
- vii) 24 units viii) 22 units

b)

Make sure the student drew rectangles with sides equaling to 24 units.

2A

3.




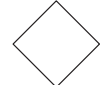


a)

Check to make sure the student wrote the correct coordinates for each shape.

3A

4.

a)

- i) 
- ii) 
- iii) 
- iv) 
- v) 
- vi) 

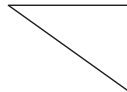
vii)



viii)



ix)



x)



xi)



xii)



xiii)



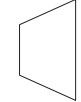
xiv)



xv)



xvi)



4A

5.

a)

- i) 54 units squared
- ii) 96 units squared
- iii) 6 units squared
- iv) 150 units squared
- v) 1.5 units squared
- vi) 24 units squared

Shapes will vary.

b)

- i) 130 units squared
- ii) 90 units squared
- iii) 192 units squared
- iv) 80 units squared
- v) 30 units squared
- vi) 82 units squared

b)

Shapes will vary.

c)

- i) 314 units squared
- ii) 452.16 units squared
- iii) 113.04 units squared
- iv) 50.24 units squared
- v) 12.56 units squared
- vi) 3.14 units squared

5A

6A



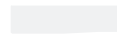
6.

(these answers are for the 6 free bonus pages, see page 3 for download instructions)

NAME: _____



Activity One



a) Complete the following measurement word problems below.

- i) A rectangle has an area of 12 square inches (77.5 square cm). If the length is 3 inches (7.6 cm), what is the width? _____
- ii) A student was able to toss a softball 50 yards (45.7 meters) during a field day competition. How many inches (cm) did the softball travel? _____
- iii) An equilateral triangle has a perimeter of 18 inches (45.7 cm). What is the length of each side? _____
- iv) The volume of a cube is 1.7 cubic inches (27 cubic cm). What is the length of each side? _____
- v) Janice uses a 1 gallon (4 liter) jug to fill up an aquarium. She fills the jug six times, and empties five and one-half jugs of water into the aquarium. How many quarts (liters) of water does the aquarium hold? _____
- vi) A square has an area of 22 sq inches (144 sq cm). What is the perimeter of the square? _____
- vii) A circle has a diameter of 2 inches (5 cm). What is its area? _____
- viii) The base of a triangle measures 7 inches (18 cm)? The area is 8.5 sq in (54 sq cm). What is the height of the triangle? _____
- ix) A regular hexagon has a perimeter of 11 sq in (72 sq cm). What is the length of each side? _____
- x) Albert measures the temperature on a cold winter day. It is 18°F (-8°C). What would the temperature be 15 degrees warmer? _____
- xi) The length of a tree shadow is 18 feet (5.5 meters). How many inches (cm) is the shadow? _____
- xii) The area of a basketball court is 600 square feet (55.5 square meters). If the length is 30 feet (9 meters), how wide is the court? _____
- xiii) Carlos left home at 7:30 am to walk to school. It took him one-quarter of an hour to arrive at a local market, where he bought milk for lunch. It took him one third of that time to get to school. How long, in total, did it take Carlos to walk to school?

- xiv) A car measures a length of 236 inches (600 cm). How many feet (meters) long is it?

- xv) A round trip between Millville and Boonesboro is 52,800 feet (16,093.4 meters). How many miles (km) is this trip one way? _____

NAME: _____



Activity Two

a) Look at the measurements below. List three other standard or metric equivalents that equal the same measurement.

i) 1500 milligrams = _____ = _____ = _____

ii) 12500 ounces = _____ = _____ = _____

iii) 185 kilograms = _____ = _____ = _____

iv) 32 tons = _____ = _____ = _____

v) 1290 grams = _____ = _____ = _____

vi) 4500 pounds = _____ = _____ = _____

vii) 800 centigrams = _____ = _____ = _____

viii) 29,200 ounces = _____ = _____ = _____

ix) 2575 milligrams = _____ = _____ = _____

x) 895 decagrams = _____ = _____ = _____

xi) 950 grams = _____ = _____ = _____

xii) 8200 pounds = _____ = _____ = _____

xiii) 3400 milligrams = _____ = _____ = _____

xiv) 74 kilograms = _____ = _____ = _____

xv) 2950 grams = _____ = _____ = _____

xvi) 5.5 tons = _____ = _____ = _____

xvii) 19 kilograms = _____ = _____ = _____

xviii) 245 grams = _____ = _____ = _____

xix) 18,295 milligrams = _____ = _____ = _____

xx) 36000 ounces = _____ = _____ = _____



Activity Three

a) Objects on the moon weigh about $\frac{1}{6}$ of their weight on the Earth because the moon has $\frac{1}{6}$ the gravity of the Earth. For this reason, a man weighing 100 pounds (45.5 kilograms) on Earth weighs about 16.7 pounds (7.6 kilograms) on the moon. You have been placed in charge of opening a zoo at a space station on the moon. Based on the gravity found on the moon, what would the following animals weigh at the zoo?

	Animal	Weight on Earth	Weight on the Moon
i)	Aardvark	180 pounds (81.7 kg)	
ii)	Alligator	500 pounds (226.8 kg)	
iii)	Baboon	90 pounds (40.8 kg)	
iv)	Bear (black)	450 pounds (204.1 kg)	
v)	Bison	2200 pounds (997.9 kg)	
vi)	Cheetah	140 pounds (63.5 kg)	
vii)	Coyote	20 pounds (9.1 kg)	
viii)	Elephant (African)	8000 pounds (3628.7 kg)	
ix)	Giraffe	1800 pounds (816.5 kg)	
x)	Hippopotamus	4500 pounds (2041.2 kg)	
xi)	Koala Bear	18 pounds (8.2 kg)	
xii)	Leopard	100 pounds (45.4 kg)	
xiii)	Lion	400 pounds (181.4 kg)	
xiv)	Mongoose	10 pounds (4.5 kg)	
xv)	Monkey	21 pounds (9.5 kg)	
xvi)	Rhinoceros	4000 pounds (1814.4 kg)	
xvii)	Tiger (Bengal)	600 pounds (272.2 kg)	
xviii)	Turtle	300 pounds (136.1 kg)	
xix)	Wolverine	25 pounds (11.3 kg)	
xx)	Zebra	800 pounds (362.9 kg)	

NAME: _____



Activity Five

a) Convert the following temperatures in Fahrenheit to Celsius.

- i) $18^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ ii) $25^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ iii) $47^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$
- iv) $84^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ v) $160^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ vi) $-4^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$
- vii) $320^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ viii) $188^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ ix) $270^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$
- x) $-40^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ xi) $99^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ xii) $318^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$
- xiii) $72^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ xiv) $-100^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ xv) $450^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$
- xvi) $800^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ xvii) $325^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$ xviii) $56^{\circ}\text{F} =$ _____ $^{\circ}\text{C}$

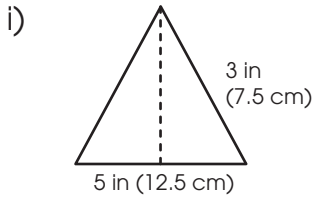
b) Convert the following temperatures in Celsius to Fahrenheit.

- i) $12^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ ii) $80^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ iii) $101^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$
- iv) $92^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ v) $-5^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ vi) $200^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$
- vii) $120^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ viii) $45^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ ix) $-18^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$
- x) $47^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ xi) $290^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ xii) $32^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$
- xiii) $158^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ xiv) $492^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ xv) $-27^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$
- xvi) $44^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ xvii) $-9^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$ xviii) $188^{\circ}\text{C} =$ _____ $^{\circ}\text{F}$

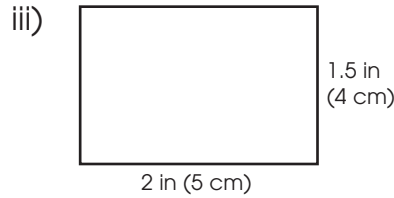


Activity Six

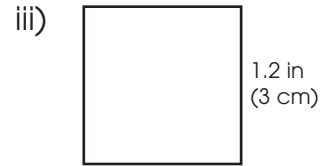
a) Look at the shapes below. The measurements of each shape are labeled. Use these measurements to find the area of each shape. Then, use the measurements to find the perimeter of each shape as well. Note: measurements are not to scale.



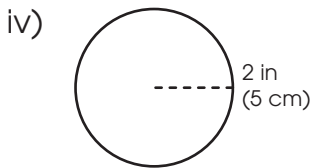
Area = _____
Perimeter = _____



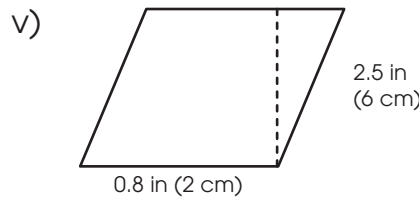
Area = _____
Perimeter = _____



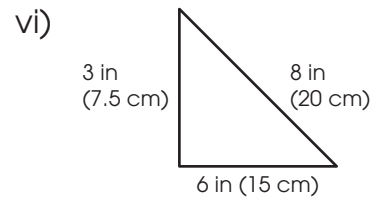
Area = _____
Perimeter = _____



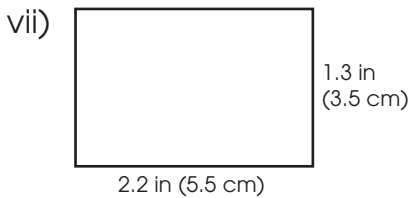
Area = _____
Perimeter = _____



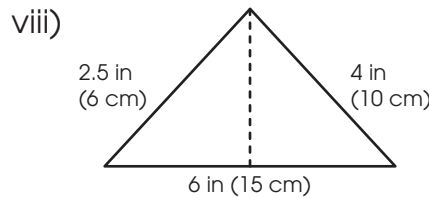
Area = _____
Perimeter = _____



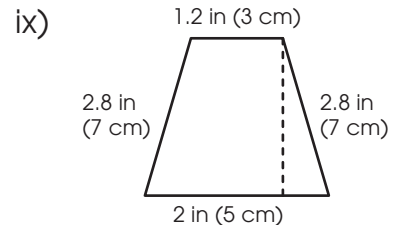
Area = _____
Perimeter = _____



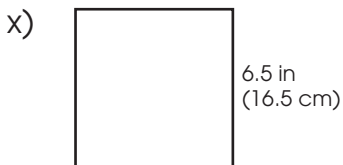
Area = _____
Perimeter = _____



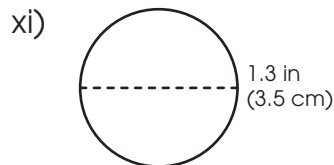
Area = _____
Perimeter = _____



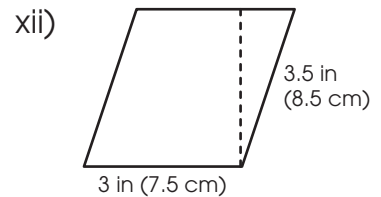
Area = _____
Perimeter = _____



Area = _____
Perimeter = _____



Area = _____
Circumference = _____



Area = _____
Perimeter = _____

1.**a)**

- i) 4 in (10.2 cm)
- ii) 1800 in (4570 cm)
- iii) 6 in (15.23 cm)
- iv) 1.19 in (3 cm)
- v) 22 quarts (22 liters)
- vi) 18.8 in (48 cm)
- vii) 3.14 sq in (19.6 sq cm)
- viii) 2.43 in (6 cm)
- ix) 1.83 in (12 cm)
- x) 33°F (7°C)
- xi) 216 inches (550 cm)
- xii) 20 feet (6.16 meters)
- xiii) 20 minutes
- xiv) 19.7 feet (6 meters)
- xv) 5 miles (8.045 km)

1A**2.****a)**

Answers will vary.

2A**3.****a)**

- i) 30 lbs (13.6 kg)
- ii) 83.3 lbs (37.8 kg)
- iii) 15 lbs (6.8 kg)
- iv) 75 lbs (34.02 kg)
- v) 366.7 lbs (166.32 kg)
- vi) 23.3 lbs (10.58 kg)
- vii) 3.33 lbs (1.52 kg)
- viii) 1333.33 lbs (604.78 kg)
- ix) 300 lbs (136.08 kg)
- x) 750 lbs (340.2 kg)
- xi) 3 lbs (1.37 kg)
- xii) 16.67 lbs (7.57 kg)
- xiii) 66.67 lbs (30.23 kg)
- xiv) 1.67 lbs (0.75 kg)
- xv) 3.5 lbs (1.58 kg)
- xvi) 666.67 lbs (302.4 kg)
- xvii) 100 lbs (45.37 kg)
- xviii) 50 lbs (22.68 kg)
- xix) 4.17 lbs (1.88 kg)
- xx) 133.33 lbs (60.48 kg)

3A**4.****a)**

Answers will vary. Paragraphs should explain that a person must determine the lengths of each side and add them together to find the perimeter. A person then needs to determine the height. The person multiplies the height by the length of the base and divides by two to find the area. Area is measured in square units while perimeter is measured in units. The base of the triangle is 4.1 inches (10.5 cm), the side lengths are 3 inches (7.5 cm), and the height is 2.1 inches (5.3 cm). The area of the triangle is 4.3 square inches (27.8 square cm). The perimeter of the triangle is 10.1 inches (25.5 cm).

4A**5.****a)**

- i) 18°F = -7.78°C
- ii) 25°F = -3.89°C
- iii) 47°F = 8.33°C
- iv) 84°F = 28.89°C
- v) 160°F = 71.11°C
- vi) -4°F = -20°C
- vii) 320°F = 160°C
- viii) 188°F = 86.67°C
- ix) 270°F = 132.22°C
- x) -40°F = -40°C
- xi) 99°F = 37.22°C
- xii) 318°F = 158.89°C
- xiii) 72°F = 22.22°C
- xiv) -100°F = -73.33°C
- xv) 450°F = 232.22°C
- xvi) 800°F = 426.67°C
- xvii) 325°F = 162.78°C
- xviii) 56°F = 13.33°C

5A**b)**

- i) 12°C = 53.6°F
- ii) 80°C = 176°F
- iii) 101°C = 213.8°F
- iv) 92°C = 197.6°F
- v) -5°C = 23°F
- vi) 200°C = 392°F
- vii) 120°C = 248°F
- viii) 45°C = 113°F
- ix) -18°C = -0.4°F
- x) 47°C = 116.6°F
- xi) 290°C = 554°F
- xii) 32°C = 89.6°F
- xiii) 158°C = 316.4°F
- xiv) 492°C = 917.6°F
- xv) -27°C = -16.6°F
- xvi) 44°C = 111.2°F
- xvii) -9°C = 15.8°F
- xviii) 188°C = 370.4°F

6.**a)**

- i) Area = 7.5 sq in (46.9 sq cm), Perimeter = 11 in (27.5 cm)
- ii) Area = 3 sq in (20 sq cm), Perimeter = 7 in (18 cm)
- iii) Area = 1.44 sq in (9 sq cm), Perimeter = 4.8 in (12 cm)
- iv) Area = 12.56 sq in (78.5 sq cm), Circumference = 12.56 in (31.4 cm)
- v) Area = 2 sq in (12 sq cm), Perimeter = 6.6 in (16 cm)
- vi) Area = 9 sq in (56.25 sq cm), Perimeter = 17 in (42.5 cm)
- vii) Area = 2.86 sq in (19.25 sq cm), Perimeter = 7 in (18 cm)
- viii) Area = 7.5 sq in (45 sq cm), Perimeter = 14 in (35 cm)
- ix) Area = 4.48 sq in (28 sq cm), Perimeter = 8.8 in (22 cm)
- x) Area = 42.25 sq in (272.25 sq cm), Perimeter = 26 in (66 cm)
- xi) Area = 1.33 sq in (1.53 sq cm), Circumference = 4.08 in (10.99 cm)
- xii) Area = 10.5 sq in (63.75 sq cm), Perimeter = 13 in (32 cm)

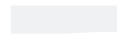
6A

(these answers are for the 6 free bonus pages, see page 3 for download instructions)

NAME: _____



Activity One



a) A paper bag has the letters A, B, C, D, and E inside it. It also has the numbers 1, 2, 3.

- i) What are your chances of pulling out one letter or number and getting an A? _____
- ii) What are your chances of pulling out one letter or number and getting a B or 2? _____
- iii) What are your chances of pulling out one letter or number and getting a vowel? _____
- iv) What are your chances of pulling out one letter or number and getting a consonant? _____
- v) What are your chances of pulling out one letter or number and getting an odd number? _____
- vi) What are your chances of pulling out one letter or number and getting an even number? _____
- vii) What are your chances of pulling out two numbers from the bag? _____
- viii) What are your chances of pulling out a letter from the bag? _____
- ix) What are your chances of pulling a number out of the bag? _____
- x) What is the ratio of letters to numbers? _____
- xi) What is the ratio of odd numbers to even numbers? _____
- xii) There are the same amount of vowels as there are what type of numbers? _____
- xiii) There are as many numbers as there are what type of letters? _____
- xiv) What fraction of the letters and numbers are third in the alphabet or numerical system? _____
- xv) What fraction of the letters and numbers are odd numbers? _____
- xvi) What fraction of the letters and numbers are even numbers or consonants? _____

NAME: _____



Activity Two

a) The table below shows the amount of hits students had during twenty swings in a batting cage.

Batting Results

Name	Number of Hits
Jessica	10
Thomas	8
Erin	12
Gabe	10
Chen	16
Steffani	14

- i) Which student had the most amount of hits? _____
- ii) Which student had the least amount of hits? _____
- iii) Which student hit 80% of the pitches? _____
- iv) Which student hit 60% of the pitches? _____
- v) Which student hit 40% of the pitches? _____
- vi) How many total pitches were hit? _____
- vii) How many total pitches were thrown to these students? _____
- viii) What percent of the total pitches thrown were hits? _____
- ix) What hitters had a 1:1 ratio hits to misses? _____
- x) What is the ratio of hits between Gabe and Thomas? _____
- xi) What fraction of pitches did Erin hit? _____
- xii) Who hit $\frac{4}{5}$ of the pitches thrown? _____
- xiii) Who hit $\frac{2}{5}$ of the pitches thrown? _____
- xiv) What player missed $\frac{2}{5}$ of the pitches thrown? _____
- xv) What player missed $\frac{1}{5}$ of the pitches thrown? _____
- xvi) What percent of the total pitches were misses? _____

NAME: _____



Activity Four

a) The results of a survey given to a group of students in a middle school are shown below.

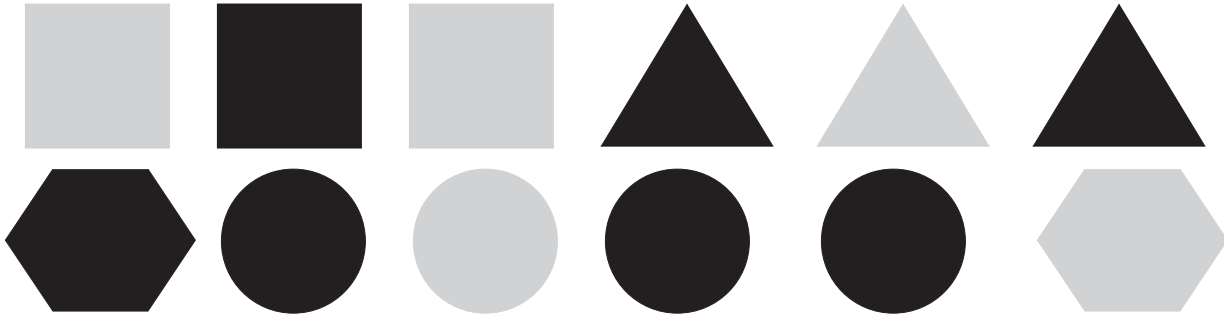
<i>Respondents:</i>	Male: 36	Female: 44
<i>Favorite subject:</i>	Math: 18	Language/Literacy: 12
	Science: 15	History: 15
	Other: 20	
<i>Time spent reading each night:</i>	Less than 10 minutes: 22	
	Between 10 and 30 minutes: 48	
	More than 30 minutes: 10	
<i>Time spent on homework each night: (not including reading)</i>	Less than 10 minutes: 5	
	Between 10 and 30 minutes: 50	
	More than 30 minutes: 25	

- i) How many total respondents were there? _____
- ii) What percent of the respondents were male? _____
- iii) What percent of the respondents were female? _____
- iv) One fourth of the students chose which choice as their favorite subject? _____
- v) What is the ratio of students who preferred math to students who preferred language/literacy? _____
- vi) How many more students liked math than liked history? _____
- vii) The ratio of which two favorite subjects was 1:1? _____
- viii) What fraction of total students like either science or history? _____
- ix) How many students read for more than 10 minutes every night? _____
- x) What fraction of the students read for more than 30 minutes each day? _____
- xi) What percent of the students read only 22 minutes each day? _____
- xii) How many students read 30 minutes or less each night? _____
- xiii) What percent of the students read less than 10 minutes each night? _____
- xiv) What is the ratio of students who read more than 30 minutes to those who read between 10 minutes and 30 minutes? _____
- xv) What percent of students spend less than 30 minutes on homework each night? _____
- xvi) What percent of students spend more than 30 minutes on homework each night? _____



Activity Five

a) The following shape tiles were found inside a bag.



- i) What fraction of the tiles are black? _____
- ii) What percent of the tiles are gray? _____
- iii) What fraction of the tiles are triangles? _____
- iv) What percent of the tiles are hexagons? _____
- v) What are your chances of selecting a gray shape tile from the bag? _____
- vi) What are your chances of selecting a circle from the bag? _____
- vii) What are your chances of selecting a square or triangle from the bag? _____
- viii) What shape are you most likely to choose from the bag? _____
- ix) What shape are you least likely to choose from the bag? _____
- x) What percent chance do you have of choosing a black square from the bag? _____
- xi) What percent chance do you have at choosing a black triangle from the bag? _____
- xii) What percent chance do you have at pulling out a black circle or gray triangle from the bag? _____
- xiii) What is the ratio of black triangles to gray squares? _____
- xiv) What is the ratio of circles to hexagons? _____
- xv) What is the ratio of black shapes to gray shapes? _____
- xvi) What is the ratio of multi-sided shapes to non-sided shapes? _____



Activity Six

- a) The following table shows the popularity of four lunches in sixth, seventh, and eighth grade at Brown Middle School. It shows the number of students who voted for each item as their favorite.

Grade	Pizza	Salad	Sub	Hamburger
6	18	12	7	13
7	22	10	8	16
8	21	12	5	14

- i) How many total students completed this survey? _____
- ii) What is the average number of students per grade? _____
- iii) How many more students liked pizza than salad in grade 6? _____
- iv) Twice as many people in grade 7 liked what food than liked subs in grade 8? _____
- v) Half as many people in what grade liked what food than liked hamburgers in grade 8? _____
- vi) One-sixth more people in what grade liked what food than liked salad in grade 6? _____
- vii) One-seventh of the total students asked in grade 7 chose what as their favorite lunch food? _____
- viii) Fifty percent of the students in grade 8 chose which two items as their favorite? _____
- ix) What is the ratio of students who liked pizza to salad in grade 8? _____
- x) What is the only 1:1 ratio found on this chart? _____
- xi) What is the ratio of people who preferred hamburgers in grade 7 to grade 8? _____
- xii) What fraction of students in grade 7 chose hamburgers as their favorite? _____
- xiii) What is the average number of students who selected salad as a favorite? _____
- xiv) What is the average number of students who selected hamburgers as their favorite? _____
- xv) What is the average number of students who selected pizza as their favorite? _____
- xvi) What is the average number of students who selected sub as their favorite? _____

1.**a)**

- i) 1 in 8
- ii) 2 in 8 or 1 in 4
- iii) 2 in 8 or 1 in 4
- iv) 3 in 8
- v) 2 in 8 or 1 in 4
- vi) 1 in 8
- vii) 2 in 8 or 1 in 4
- viii) 5 in 8
- ix) 3 in 8
- x) 5:3
- xi) 2:1
- xii) odd numbers
- xiii) consonants
- xiv) 1/4
- xv) 1/4
- xvi) 1/2

1A**2.****a)**

- i) Chen
- ii) Thomas
- iii) Chen
- iv) Erin
- v) Thomas
- vi) 70
- vii) 120
- viii) 58.3%
- ix) Jessica and Gabe
- x) 5:4
- xi) 3/5
- xii) Chen
- xiii) Thomas
- xiv) Erin
- xv) Chen
- xvi) 41.7%

2A**3.****a)**

Answers will vary. More snow fell in December 2009 than December 2010. Students might notice the same amount of snow fell on December 8. Two more inches of snow fell on December 9, 2010, than December 9, 2009.

3A**4.****a)**

- i) 80 respondents
- ii) 45% male
- iii) 55% female
- iv) Other
- v) 3:2
- vi) 3 more students
- vii) Science and History
- viii) 3/8
- ix) 58 students
- x) 1/8
- xi) 60%
- xii) 70 students
- xiii) 27.5%
- xiv) 5:24
- xv) 68.75%
- xvi) 31.25%

4A**5.****a)**

- i) 7/12
- ii) 5/12
- iii) 1/4
- iv) 1/6
- v) 5 in 12
- vi) 4 in 12 or 1 in 3
- vii) 6 in 12 or 1 in 2
- viii) Circle
- ix) Hexagon
- x) 8.3% chance
- xi) 16.7% chance
- xii) 33.3% chance
- xiii) 1:1
- xiv) 2:1
- xv) 7:5
- xvi) 2:1

5A**6.****a)**

- i) 158
- ii) 53 students
- iii) 6 more students
- iv) Salad
- v) Subs in grade 6
- vi) Hamburger in grade 8
- vii) Sub
- viii) Pizza and Sub
- ix) 7:4
- x) Salad in grade 6 and 8
- xi) 8:7
- xii) 2/7
- xiii) 11 students
- xiv) 14 students
- xv) 20 students
- xvi) 7 students

6A

(these answers are for the 6 free bonus pages, see page 3 for download instructions)

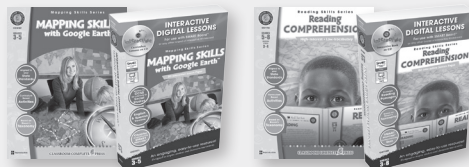


Publication Listing



SOCIAL STUDIES - Books	
ITEM #	TITLE
DAILY LIFE SKILLS SERIES	
CC5790	Daily Marketplace Skills Gr. 6-12
CC5791	Daily Social & Workplace Skills Gr. 6-12
CC5792	Daily Health & Hygiene Skills Gr. 6-12
CC5793	Daily Life Skills Big Book Gr. 6-12
21ST CENTURY SKILLS SERIES	
CC5794	Learning Problem Solving Gr. 3-8
CC5795	Learning Communication & Teamwork Gr. 3-8
CC5796	Learning Skills for Global Competency Gr. 3-8
CC5797	Learning to Learn Big Book Gr. 3-8
MAPPING SKILLS SERIES	
CC5786	Gr. PK-2 Mapping Skills with Google Earth
CC5787	Gr. 3-5 Mapping Skills with Google Earth
CC5788	Gr. 6-8 Mapping Skills with Google Earth
CC5789	Gr. PK-8 Mapping Skills with Google Earth Big Book
NORTH AMERICAN GOVERNMENTS SERIES	
CC5757	American Government Gr. 5-8
CC5758	Canadian Government Gr. 5-8
CC5759	Mexican Government Gr. 5-8
CC5760	Governments of North America Big Book Gr. 5-8
WORLD GOVERNMENTS SERIES	
CC5761	World Political Leaders Gr. 5-8
CC5762	World Electoral Processes Gr. 5-8
CC5763	Capitalism vs. Communism Gr. 5-8
CC5777	World Politics Big Book Gr. 5-8
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CC5500	American Civil War Gr. 5-8
CC5512	American Wars Big Book Gr. 5-8
CC5501	World War I Gr. 5-8
CC5502	World War II Gr. 5-8
CC5503	World Wars I & II Big Book Gr. 5-8
CC5505	Korean War Gr. 5-8
CC5506	Vietnam War Gr. 5-8
CC5507	Korean & Vietnam Wars Big Book Gr. 5-8
CC5508	Persian Gulf War (1990-1991) Gr. 5-8
CC5509	Iraq War (2003-2010) Gr. 5-8
CC5510	Gulf Wars Big Book Gr. 5-8
WORLD CONTINENTS SERIES	
CC5750	North America Gr. 5-8
CC5751	South America Gr. 5-8
CC5768	The Americas Big Book Gr. 5-8
CC5752	Europe Gr. 5-8
CC5753	Africa Gr. 5-8
CC5754	Asia Gr. 5-8
CC5755	Australia Gr. 5-8
CC5756	Antarctica Gr. 5-8
WORLD CONNECTIONS SERIES	
CC5782	Culture, Society & Globalization Gr. 5-8
CC5783	Economy & Globalization Gr. 5-8
CC5784	Technology & Globalization Gr. 5-8
CC5785	Globalization Big Book Gr. 5-8

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ITEM #	TITLE
MAPPING SKILLS SERIES	
CC7770	Gr. PK-2 Mapping Skills with Google Earth
CC7771	Gr. 3-5 Mapping Skills with Google Earth
CC7772	Gr. 6-8 Mapping Skills with Google Earth
CC7773	Gr. PK-8 Mapping Skills with Google Earth Big Box
SCIENCE - Software	
SPACE AND BEYOND SERIES	
CC7557	Solar System Gr. 5-8
CC7558	Galaxies & the Universe Gr. 5-8
CC7559	Travel & Technology Gr. 5-8
CC7560	Space Big Box Gr. 5-8
HUMAN BODY SERIES	
CC7549	Cells, Skeletal & Muscular Systems Gr. 5-8
CC7550	Senses, Nervous & Respiratory Systems Gr. 5-8
CC7551	Circulatory, Digestive & Reproductive Systems Gr. 5-8
CC7552	Human Body Big Box Gr. 5-8
FORCE, MOTION & SIMPLE MACHINES SERIES	
CC7553	Force Gr. 3-8
CC7554	Motion Gr. 3-8
CC7555	Simple Machines Gr. 3-8
CC7556	Force, Motion & Simple Machines Big Box Gr. 3-8
ENVIRONMENTAL STUDIES - Software	
CLIMATE CHANGE SERIES	
CC7747	Global Warming: Causes Gr. 3-8
CC7748	Global Warming: Effects Gr. 3-8
CC7749	Global Warming: Reduction Gr. 3-8
CC7750	Global Warming Big Box Gr. 3-8
LANGUAGE ARTS - Software	
CC7112	Word Families - Short Vowels Gr. PK-2
CC7113	Word Families - Long Vowels Gr. PK-2
CC7114	Word Families - Vowels Big Box Gr. PK-2
CC7100	High Frequency Sight Words Gr. PK-2
CC7101	High Frequency Picture Words Gr. PK-2
CC7102	Sight & Picture Words Big Box Gr. PK-2
CC7104	How to Write a Paragraph Gr. 3-8
CC7105	How to Write a Book Report Gr. 3-8
CC7106	How to Write an Essay Gr. 3-8
CC7107	Master Writing Big Box Gr. 3-8
CC7108	Reading Comprehension Gr. 5-8
CC7109	Literary Devices Gr. 5-8
CC7110	Critical Thinking Gr. 5-8
CC7111	Master Reading Big Box Gr. 5-8
MATHEMATICS - Software	
PRINCIPLES & STANDARDS OF MATH SERIES	
CC7315	Gr. PK-2 Five Strands of Math Big Box
CC7316	Gr. 3-5 Five Strands of Math Big Box
CC7317	Gr. 6-8 Five Strands of Math Big Box



SCIENCE - Books	
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HANDS-ON STEAM SCIENCE SERIES	
CC4100	Physical Science Gr. 1-5
CC4101	Life Science Gr. 1-5
CC4102	Earth & Space Science Gr. 1-5
CC4103	Hands-On Science Big Book Gr. 1-5
ECOLOGY & THE ENVIRONMENT SERIES	
CC4500	Ecosystems Gr. 5-8
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CC4502	Cells Gr. 5-8
CC4503	Ecology & The Environment Big Book Gr. 5-8
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CC4504	Properties of Matter Gr. 5-8
CC4505	Atoms, Molecules & Elements Gr. 5-8
CC4506	Energy Gr. 5-8
CC4507	The Nature of Matter Big Book Gr. 5-8
FORCE & MOTION SERIES	
CC4508	Force Gr. 5-8
CC4509	Motion Gr. 5-8
CC4510	Simple Machines Gr. 5-8
CC4511	Force, Motion & Simple Machines Big Book Gr. 5-8
SPACE & BEYOND SERIES	
CC4512	Solar System Gr. 5-8
CC4513	Galaxies & The Universe Gr. 5-8
CC4514	Travel & Technology Gr. 5-8
CC4515	Space Big Book Gr. 5-8
HUMAN BODY SERIES	
CC4516	Cells, Skeletal & Muscular Systems Gr. 5-8
CC4517	Senses, Nervous & Respiratory Systems Gr. 5-8
CC4518	Circulatory, Digestive & Reproductive Systems Gr. 5-8
CC4519	Human Body Big Book Gr. 5-8
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CC5764	Waste: At the Source Gr. 5-8
CC5765	Prevention, Recycling & Conservation Gr. 5-8
CC5766	Waste: The Global View Gr. 5-8
CC5767	Waste Management Big Book Gr. 5-8
CLIMATE CHANGE SERIES	
CC5769	Global Warming: Causes Gr. 5-8
CC5770	Global Warming: Effects Gr. 5-8
CC5771	Global Warming: Reduction Gr. 5-8
CC5772	Global Warming Big Book Gr. 5-8
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CC5773	Conservation: Fresh Water Resources Gr. 5-8
CC5774	Conservation: Ocean Water Resources Gr. 5-8
CC5775	Conservation: Waterway Habitat Resources Gr. 5-8
CC5776	Water Conservation Big Book Gr. 5-8
CARBON FOOTPRINT SERIES	
CC5778	Reducing Your Own Carbon Footprint Gr. 5-8
CC5779	Reducing Your School's Carbon Footprint Gr. 5-8
CC5780	Reducing Your Community's Carbon Footprint Gr. 5-8
CC5781	Carbon Footprint Big Book Gr. 5-8

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CC2100	Curious George (H. A. Rey)
CC2101	Paper Bag Princess (Robert N. Munsch)
CC2102	Stone Soup (Marcia Brown)
CC2103	The Very Hungry Caterpillar (Eric Carle)
CC2104	Where the Wild Things Are (Maurice Sendak)
CC2105	The One in the Middle is the Green Kangaroo (Judy Bloom)
	GRADES 3-4
CC2300	Babe: The Gallant Pig (Dick King-Smith)
CC2301	Because of Winn-Dixie (Kate DiCamillo)
CC2302	The Tale of Despereaux (Kate DiCamillo)
CC2303	James and the Giant Peach (Roald Dahl)
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CC2315	Cricket in Times Square (George Selden)
CC2316	Fantastic Mr Fox (Roald Dahl)
CC2317	The Hundred Dresses (Eleanor Estes)
CC2318	The War with Grandpa (Robert Kimmel Smith)
CC2319	Chocolate Fever (Robert Kimmel Smith)
CC2320	The Chocolate Touch (Patrick Skene Catling)
CC2321	The BFG (Roald Dahl)
	GRADES 5-6
CC2500	Black Beauty (Anna Sewell)
CC2501	Bridge to Terabithia (Katherine Paterson)
CC2502	Bud, Not Buddy (Christopher Paul Curtis)
CC2503	The Egypt Game (Zilpha Keatley Snyder)
CC2504	The Great Gilly Hopkins (Katherine Paterson)
CC2505	Holes (Louis Sachar)
CC2506	Number the Stars (Lois Lowry)
CC2507	The Sign of the Beaver (E.G. Speare)
CC2508	The Whipping Boy (Sid Fleischman)
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CC2513	Kira-Kira (Cynthia Kadohata)
CC2514	Dear Mr. Henshaw (Beverly Cleary)
CC2515	The Summer of the Swans (Betsy Byars)
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CC2526	A Year Down Yonder (Richard Peck)
CC2527	Maniac Magee (Jerry Spinelli)
CC2528	From the Mixed-Up Files of Mrs. Basil E. Frankweiler (E.L. Konigsburg)

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CC2529	Sing Down the Moon (Scott O'Dell)
CC2530	The Phantom Tollbooth (Norton Juster)
CC2531	Gregor the Overlander (Suzanne Collins)
CC2532	Through the Looking-Glass (Lewis Carroll)
CC2533	Wonder (R.J. Palacio)
CC2534	Freak the Mighty (Rodman Philbrick)
CC2535	Tuck Everlasting (Natalie Babbitt)
CC2536	My Side of the Mountain (Jean Craighead George)
CC2537	Esperanza Rising (Pam Muñoz Ryan)
	GRADES 7-8
CC2700	Cheaper by the Dozen (Frank B. Gilbreth)
CC2701	The Miracle Worker (William Gibson)
CC2702	The Red Pony (John Steinbeck)
CC2703	Treasure Island (Robert Louis Stevenson)
CC2704	Romeo & Juliet (William Shakespeare)
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CC2706	Call It Courage (Armstrong Sperry)
CC2707	The Boy in the Striped Pajamas (John Boyne)
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CC2709	The Cay (Theodore Taylor)
CC2710	The Hunger Games (Suzanne Collins)
CC2711	Catching Fire (Suzanne Collins)
CC2712	The Pearl (John Steinbeck)
	GRADES 9-12
CC2001	To Kill A Mockingbird (Harper Lee)
CC2002	Angela's Ashes (Frank McCourt)
CC2003	The Grapes of Wrath (John Steinbeck)
CC2004	The Good Earth (Pearl S. Buck)
CC2005	The Road (Cormac McCarthy)
CC2006	The Old Man and the Sea (Ernest Hemingway)
CC2007	Lord of the Flies (William Golding)
CC2008	The Color Purple (Alice Walker)
CC2009	The Outsiders (S.E. Hinton)
CC2010	Hamlet (William Shakespeare)
CC2011	The Great Gatsby (F. Scott Fitzgerald)
CC2012	The Adventures of Huckleberry Finn (Mark Twain)
CC2013	Macbeth (William Shakespeare)
CC2014	Fahrenheit 451 (Ray Bradbury)
CC2015	The Crucible (Arthur Miller)
CC2016	Of Mice and Men (John Steinbeck)
CC2017	Divergent (Veronica Roth)

LANGUAGE ARTS - Books

CC1110	Word Families - Short Vowels Gr. K-1
CC1111	Word Families - Long Vowels Gr. K-1
CC1112	Word Families - Vowels Big Book Gr. K-1
CC1113	High Frequency Sight Words Gr. K-1
CC1114	High Frequency Picture Words Gr. K-1
CC1115	Sight & Picture Words Big Book Gr. K-1
CC1100	How to Write a Paragraph Gr. 5-8
CC1101	How to Write a Book Report Gr. 5-8
CC1102	How to Write an Essay Gr. 5-8
CC1103	Master Writing Big Book Gr. 5-8
CC1116	Reading Comprehension Gr. 5-8
CC1117	Literary Devices Gr. 5-8
CC1118	Critical Thinking Gr. 5-8
CC1119	Master Reading Big Book Gr. 5-8
CC1106	Reading Response Forms: Gr. 1-2
CC1107	Reading Response Forms: Gr. 3-4
CC1108	Reading Response Forms: Gr. 5-6
CC1109	Reading Response Forms Big Book: Gr. 1-6

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	TASK SHEETS
CC3100	Gr. PK-2 Number & Operations Task Sheets
CC3101	Gr. PK-2 Algebra Task Sheets
CC3102	Gr. PK-2 Geometry Task Sheets
CC3103	Gr. PK-2 Measurement Task Sheets
CC3104	Gr. PK-2 Data Analysis & Probability Task Sheets
CC3105	Gr. PK-2 Five Strands of Math Big Book Task Sheets
CC3106	Gr. 3-5 Number & Operations Task Sheets
CC3107	Gr. 3-5 Algebra Task Sheets
CC3108	Gr. 3-5 Geometry Task Sheets
CC3109	Gr. 3-5 Measurement Task Sheets
CC3110	Gr. 3-5 Data Analysis & Probability Task Sheets
CC3111	Gr. 3-5 Five Strands of Math Big Book Task Sheets
CC3112	Gr. 6-8 Number & Operations Task Sheets
CC3113	Gr. 6-8 Algebra Task Sheets
CC3114	Gr. 6-8 Geometry Task Sheets
CC3115	Gr. 6-8 Measurement Task Sheets
CC3116	Gr. 6-8 Data Analysis & Probability Task Sheets
CC3117	Gr. 6-8 Five Strands of Math Big Book Task Sheets
	DRILL SHEETS
CC3200	Gr. PK-2 Number & Operations Drill Sheets
CC3201	Gr. PK-2 Algebra Drill Sheets
CC3202	Gr. PK-2 Geometry Drill Sheets
CC3203	Gr. PK-2 Measurement Drill Sheets
CC3204	Gr. PK-2 Data Analysis & Probability Drill Sheets
CC3205	Gr. PK-2 Five Strands of Math Big Book Drill Sheets
CC3206	Gr. 3-5 Number & Operations Drill Sheets
CC3207	Gr. 3-5 Algebra Drill Sheets
CC3208	Gr. 3-5 Geometry Drill Sheets
CC3209	Gr. 3-5 Measurement Drill Sheets
CC3210	Gr. 3-5 Data Analysis & Probability Drill Sheets
CC3211	Gr. 3-5 Five Strands of Math Big Book Drill Sheets
CC3212	Gr. 6-8 Number & Operations Drill Sheets
CC3213	Gr. 6-8 Algebra Drill Sheets
CC3214	Gr. 6-8 Geometry Drill Sheets
CC3215	Gr. 6-8 Measurement Drill Sheets
CC3216	Gr. 6-8 Data Analysis & Probability Drill Sheets
CC3217	Gr. 6-8 Five Strands of Math Big Book Drill Sheets
	TASK & DRILL SHEETS
CC3300	Gr. PK-2 Number & Operations Task & Drill Sheets
CC3301	Gr. PK-2 Algebra Task & Drill Sheets
CC3302	Gr. PK-2 Geometry Task & Drill Sheets
CC3303	Gr. PK-2 Measurement Task & Drill Sheets
CC3304	Gr. PK-2 Data Analysis & Probability Task & Drills
CC3306	Gr. 3-5 Number & Operations Task & Drill Sheets
CC3307	Gr. 3-5 Algebra Task & Drill Sheets
CC3308	Gr. 3-5 Geometry Task & Drill Sheets
CC3309	Gr. 3-5 Measurement Task & Drill Sheets
CC3310	Gr. 3-5 Data Analysis & Probability Task & Drills
CC3312	Gr. 6-8 Number & Operations Task & Drill Sheets
CC3313	Gr. 6-8 Algebra Task & Drill Sheets
CC3314	Gr. 6-8 Geometry Task & Drill Sheets
CC3315	Gr. 6-8 Measurement Task & Drill Sheets
CC3316	Gr. 6-8 Data Analysis & Probability Task & Drills

