RICHMOND HILL K-8

8th Grade Math

1st Semester Review
Learn at Home Lessons

Week 1: Learn at Home Activities

Day 1: Square Roots and Cube Roots Guided notes

1. Review your notes on perfect squares and cubes. Use what you know to complete the guided notes by filling in the blanks.
2. Complete the practice questions on pages 6 and 7 make sure you show your work.

Day 2: Finding and Estimating Square Roots Puzzle

1. Complete the puzzle estimating the square roots of non-perfect squares.
2. Start at the start box solve and shade in the answers until you get to the end box.

Day 3: Integer Review Practice

1. Sum & Difference Squares. Solve the puzzles by using integers between +100 and -100 to find the sum or difference your 2 numbers should equal the answers in the circle on the outside of the box for each row and column.
2. Product & Quotient Squares. Solve the puzzles by using integers between +100 and -100 to find the sum or difference your 2 numbers should equal the answers in the circle on the outside of the box for each row and column.

Day 4: Exploring laws of Exponents Guided Notes

1. Complete the guided notes by exploring each exponent laws. Make sure you fill in all the blanks, boxes, and charts using what you know about each exponent law.

Day 5: Exponent and Equation Choice Board

1. Use the choice board to select 3 activities to complete either vertically, horizontally, or diagonally.

Week 2: Learn at Home Activities

Day 1: Math Skills Drill

1. Complete the questions 1-20 make sure you show your work in the box with each equation.
2. Place your final answers in the boxes on the right hand side of the paper.

Day 2: Multi-Step Equation Review

1. Complete the equation train starting with question 1.
2. Find the solution then use the solution for question 1 to substitute in for the variable in question number 2 and so on until you get to question number 10.
3. Don't forget order of operations (PEMDAS)

Day 3: Pythagorean Theorem

1. Complete the Pythagorean theorem guide notes on the first page front and back.
2. The 2nd page is a cut and paste to create a flip book using what you did on the first page.

Day 4: Volume of Cylinders, Cones, and Spheres Practice

1. Find the volume of each shape using the approximation 3.14 for pi.
2. Complete the Vocabulary word search and fill in the blanks using the word bank provided.

Day 5: Volume of Cylinders, Cones, and Spheres Cut, Paste, Match

1. Cut out each square and match the measurements with the answers and the correct units.
2. Glue each set together on a sheet of notebook paper.

Square Roots and Cube Roots

Guided Notes

Name _____

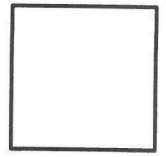
Class _____

Name _____ Class _____

Square Roots and Cube Roots

SQUARE ROOTS

- Let's say we have a square with a side length of 3 units. To find the area of the square, find the product of _____ and _____. Another way to write this is _____which means _____ Notice that we are dealing with a square here, thus the term _____ is used.



- Now, let's say we know the area of a square is 16 units squared. To determine the area of the square we need to determine what number squared equals _____ = _____. Another way to write this is _____.
- The square root symbol looks like this _____. Explain what the square root symbol means _____
- Can you calculate the square root of a negative number? _____ Explain your reasoning _____
- A square has an area of 25 units^2. Explain how to determine the side length of the square. _____ s = _____ = _____.

Practice: Determine the side length of a square given the area. Show your work using the square root symbol.

Area = 100 units^2	Area = 49 units^2	Area = 81 units^2

Notes: _____

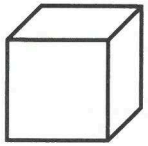
L

Name _____ Class _____

Square Roots and Cube Roots

CUBE ROOTS

- Now, let's say we have a cube with a side length of 2 units. To find the volume of a cube we will find the product of _____ and _____ and _____. Another way to write this is _____ which means _____. Notice that we are dealing with cubes here, thus the term _____.



- Now, let's say we know the volume of a cube is 64 units^3. To determine the volume of the cube we need to determine what number cubed equals _____ = _____. Another way to write this is _____.
- The cube root symbol looks like this _____. Explain what the cube root symbol means _____
- Explain how the cube root is different than the square root _____
- Can you calculate the cube root of a negative number? _____ Explain your reasoning _____
- A cube has a volume of 8 units^3. Explain how to determine the side length of the cube. _____ s = _____ = _____.

Practice: Determine the side length of a cube given the volume. Show your work using the cube root symbol.

Volume = 125 units^3	Volume = 1000 units^3	Volume = 1 units^3

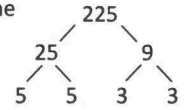
Notes: _____

Name _____ Class _____

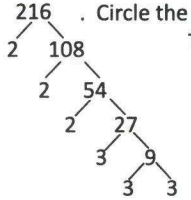
Square Roots and Cube Roots

PRIME FACTORIZATION

- Prime factorization can help you simplify square roots and cube roots. A prime number is _____ List the first ten prime numbers _____
- Prime factorization is _____
- Prime factor the following numbers:
  24 44 80
- Prime factorization is helpful if you do not know the root of a number. If you are prime factoring to find the square root of a number, you will look for _____ of prime numbers. For example if you want to determine the $\sqrt{225}$ you can prime factor 225 which might look like the following. Notice that there is a pair of _____ and a pair of _____. Therefore the $\sqrt{225}$ = (5)(3) = 15



- If you are prime factoring to determine the cube root of a number, you will look for groups of _____ of a prime number. For example, if you want to determine $\sqrt[3]{216}$ you can prime factor 216 which might look like the following 216 . Circle the groups of three prime numbers. Therefore, the $\sqrt[3]{216}$ = (2)(3) = 6



Notes: _____

Name _____ Class _____

Square Roots and Cube Roots

ROOTS OF RATIONALS

- Perfect squares are _____

  _____

  List the first ten perfect squares _____

  _____

- Perfect cubes are _____

  _____

  List the first five perfect squares _____

- Having knowledge about perfect squares and perfect cubes is useful in determining the square roots and cube roots of rational numbers.
  We want to determine the $\sqrt{0.04}$, we notice that 4 is a perfect square.
  The square root of 4 is _____, and we notice that there are _____ decimal places therefore each factor will have _____ decimal place.
  $\sqrt{0.04}$ = _____

- Now, we want to determine $\sqrt[3]{\frac{1}{27}}$. We notice that _____ is a perfect cube. The cube root of 27 = _____. Therefore, $\sqrt[3]{\frac{1}{27}}$ = _____

Practice: Simplify the following roots

$\sqrt{\frac{1}{9}}$	$\sqrt{0.25}$	$\sqrt{\frac{1}{36}}$
$\sqrt[3]{0.008}$	$\sqrt[3]{\frac{1}{125}}$	$\sqrt[3]{0.001}$

Notes: _____

_____

_____

Name _____ Class _____

Square Roots and Cube Roots

EQUATIONS WITH ROOTS

- The opposite of squaring a number is calculating the _____
  The opposite of cubing a number is calculating the _____

- $x^2 = 81$, to algebraically solve for *x* we need to cancel out the squared.
  To do so, we will do the opposite of squaring which is taking the _____. $\sqrt{x^2} = \sqrt{81}$ The square root and squared will cancel so now the equations reads $x = \sqrt{81}$. In other words this is asking what number multiplied by itself equals _____. Note that there are actually two numbers that satisfy this condition _____ and _____. The solutions are written as x = _____.

- Now, let's look at the equation $x^2 = \frac{1}{9}$. Solve for x by taking the _____ of both sides. Now, your equation is _____. What numbers multiplied by themselves equals $\frac{1}{9}$? Therefore x = _____.

- $x^3 = 8$, to algebraically solve for *x* we need to cancel out the cubed.
  To do so, we will do the opposite of cubing which is taking the _____. $\sqrt[3]{x^3} = \sqrt[3]{8}$ The cube root and cubed will cancel, so now the equation reads $x = \sqrt[3]{8}$. In other words, this is asking what number multiplied by itself three times equals _____. The number that satisfies this condition is _____. Would -2 also work? _____. Explain your reasoning _____

  _____

  The solution to the equation $x^3 = 8$ is x = _____.

- Now, let's look at the equation $y^3 = 0.064$. Solve for y by taking the _____ _____. Now your equation is _____.
  What number multiplied by itself three times equals 0.064? _____
  Therefore y = _____
  Explain how you determined the cube root of 0.064 _____

  _____

Notes: _____

_____

_____

Name _____ Class _____

Square Roots and Cube Roots

EQUATIONS WITH ROOTS

Practice: Solve the following equations. Show your work.

$a^2 = 16$	$c^2 = 0.25$
$x^2 = \frac{1}{49}$	$y^2 = 10{,}000$
$f^3 = -216$	$h^3 = 0.027$
$m^3 = \frac{1}{1000}$	$n^3 = 8{,}000$

Notes: _____

Name _____ Class _____

Square Roots and Cube Roots

ADDITIONAL PRACTICE

#1 – 4 Find the side lengths. Show your work.

1) Find the side length of a square with area 36 in^2	2) Find the side length of a square with area 121 cm^2
3) Find the side length of a cube with volume 8 ft^3	4) Find the side length of a cube with volume 27 m^3

#5 – 8 Solve the equations. Show your work.

5) $x^2 = 144$	6) $y^2 = 0.81$
7) $x^3 = -1{,}000$	8) $y^3 = \frac{1}{216}$

Notes: _____

Sum & Difference Squares – INTEGERS!

INSTRUCTIONS: Fill in all the boxes in the Sum or Difference Square, using integers between -100 and +100 only, so that each horizontal row creates the correct **sum/difference** as shown in the circles on the right side (subtract left to right), and each vertical column creates the correct sum/**difference** as shown in the circles at the bottom of the square (subtract top to bottom).

A

-5	0	-6
		+1

B

+3	+2	-6
		+11

C

-8	-6	-9
		-5

D

+10	-11	-2
		+1

E

-4	+7	+3
		0

F

+12	-8	-11
		+9

G

-13	+12	+15
		-10

H

+7	-1	-9
		-1

I

-2	0	-11
		-13

Find & Estimating Square Roots Maze

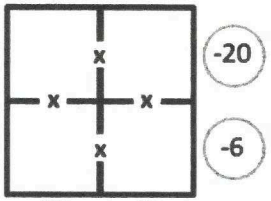
Beginning at "START", find each perfect square root or closest estimate of the square root to find a path to the end.

Created by Carrie Wiederholz for Flip 4 Math

Product & Quotient Squares – INTEGERS!

INSTRUCTIONS: Fill in all the boxes in the Product or Quotient Square so that each horizontal row creates the correct **product/quotient** as shown in the circles on the right side (work left to right), and each vertical column creates the correct **product/quotient** as shown in the circles at the bottom of the square (work top to bottom).

A



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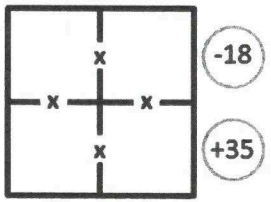

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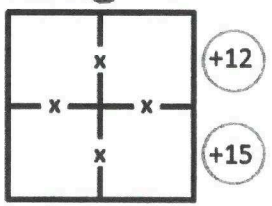

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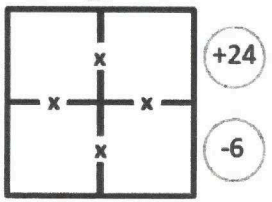

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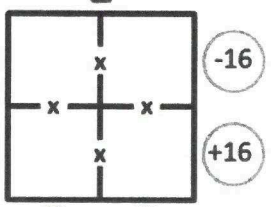

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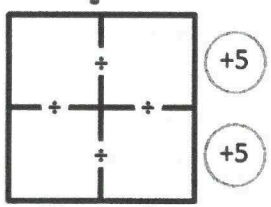

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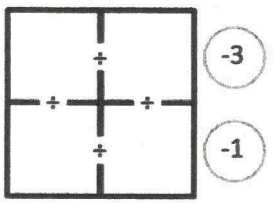

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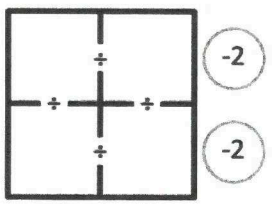
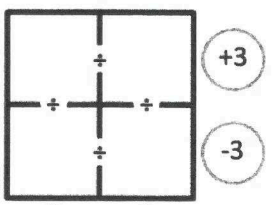


I



Exploring Laws of Exponents

Name: _____ **Date:** _____ **Block:** ____

Key Questions: What are the laws of exponents and how do I use them to simplify expressions?

Product Rule

Complete the table below with a partner. Then answer the questions that follow.

Expression	Expanded Form	Exponential Form
$3^2 \cdot 3^5$	$3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$	3^7
$2 \cdot 2^6$		
$b^5 \cdot b^8$		

1. Look at the table above. Compare the first and third column. Describe, using words, the relationship that you see between them.

2. Use your observations from the previous question to fill in the box and complete the math sentence below.

$$a^m \cdot a^n = a^{\square}$$

3. The rule you discovered in the question above is called the "**product rule**." Use it to simplify the expressions below.

a. $2^6 \cdot 2^8$ b. $(-7)^3 \cdot (-7) \cdot (-7)^5$ c. $m \cdot m^5 \cdot m^6$

Power Rule

Complete the table below with a partner. Then answer the questions that follow.

Expression	Expanded Form	Exponential Form
$(5^2)^3$	$(5 \cdot 5) \cdot (5 \cdot 5) \cdot (5 \cdot 5)$	5^6
$(8^5)^4$		
$(x^3)^4$		

1. Look at the table above. Compare the first and third column. Describe, using words, the relationship that you see between them.

2. Use your observations from the previous question to fill in the box and complete the math sentence below.

$$(a^m)^n = a^{\square}$$

3. The rule you discovered in the question on the previous page is called the "**power rule**." Use it to simplify the questions below.

a. $(7^4)^9$ b. $(k^{17})^2$ c. $(w^{100})^{20}$

Quotient Rule

Complete the table below with a partner. Then answer the questions that follow.

Expression	Expanded Form	Exponential Form
$\frac{6^9}{6^4}$	$\frac{6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6}{6 \cdot 6 \cdot 6 \cdot 6} = \frac{6 \cdot 6 \cdot \cancel{6} \cdot \cancel{6} \cdot \cancel{6} \cdot \cancel{6} \cdot 6 \cdot 6 \cdot 6}{\cancel{6} \cdot \cancel{6} \cdot \cancel{6} \cdot \cancel{6}} = 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6$	6^5
$\frac{100^3}{100^2}$		
$\frac{t^{15}}{t^{11}}$		

1. Look at the table above. Compare the first and third column. Describe, using words, the relationship that you see between them.

2. Use your observations from the last question to fill in the box and complete the math sentence below.

$$\frac{a^m}{a^n} = a^{\square}$$

3. The rule you discovered in the question above is called the "**quotient rule**." Use it to simplify the questions below.

a. $\frac{16^7}{16^3}$ b. $\frac{1}{w^{10}} \cdot w^{25}$ c. $\frac{4^3 \cdot 4^7}{4^5}$

Power of a Product

Complete the table below with a partner. Then answer the questions that follow.

Expression	Expanded Form	Exponential Form
$(2 \cdot 5)^3$	$(2 \cdot 5) \cdot (2 \cdot 5) \cdot (2 \cdot 5) = 2 \cdot 2 \cdot 2 \cdot 5 \cdot 5 \cdot 5$	$2^3 \cdot 5^3$
$(3x)^4$		

$(7^2y^3z^4)^2$		

1. Look at the table above. Compare the first and third column. Describe, using words, the relationship that you see between them.

2. Use your observations from the last question to fill in the boxes and complete the math sentence below.

$$(xy)^b = x^{\square}y^{\square}$$

3. The law you discovered in the question above is called the "**power of a product**." Use it to simplify the questions below.

a. $(3 \cdot 5)^7$ b. $(17w)^2$ c. $(2a^3b^{10})^9$

Power of a Quotient

Complete the table below with a partner. Then answer the questions that follow.

Expression	Expanded Form	Exponential Form
$\left(\frac{3}{5}\right)^2$	$\frac{3}{5}\cdot\frac{3}{5}=\frac{3\cdot3}{5\cdot5}$	$\frac{3^2}{5^2}$
$\left(\frac{m}{8}\right)^4$		
$\left(-\frac{a}{9}\right)^2$		

1. Look at the table above. Compare the first and third column. Describe, using words, the relationship that you see between them.

2. Use your observations from the previous question to complete the math sentence below.

$$\left(\frac{x}{y}\right)^a = \left(\frac{x^{\square}}{y^{\square}}\right)$$

3. The law you discovered in the question above is called "**power of a quotient**." Use it to simplify the questions below.

a. $\left(\frac{5}{4}\right)^3$ b. $\left(\frac{2x}{y}\right)^7$ c. $\left(-\frac{a}{b}\right)^8$

Choice Board: You must pick 3 items to do on this tick-tack-toe board, either vertically, horizontally, or diagonally. This paper, along with your choices done, will be turned in upon return to school.

Solve and show all your work. Circle your answer. $\frac{3y}{8} - 9 = 13 + \frac{y}{8}$	Write the equation, show all your work, and circle your answer. **The square and the equilateral triangle at the bottom have the same perimeter. Find the length of the sides of the triangle. □ X + 5 △ 3x	Solve and show all your work. Circle your answer. $3(9 - 8x - 4x) + 8(3x + 4) = 11$
Develop a color code that highlights each step for solving this equation. $5(x - 2) + 3 = 7x + 9$	Develop an activity/game that can be done is class using mulit-step equations. Use the problems from your work text as questions for the activity/game. Work out the answers and show the work.	Error analysis: look at this problem. Decide where the error is. Explain in words what was done incorrectly and they solve the problems correctly. $4(x + 7) = -12$ $4x + 28 = -12$ $-28 \quad -28$ $\frac{4x}{4} = \frac{-16}{4}$ $x = -4$
Write a letter to another student explaining how to solve this algebraic equation. $14 - \frac{w}{8} = \frac{3w}{4} - 21$	Create a foldable or graphic organizer for solving muli-step equations, include some examples.	Write 3 multi-step equations on your own. Explain how your got the answers in words and show all your work. If they are really good examples, you might see them on the unit test.

10

Math Skill Drill

1 Simplify:

$$-\frac{5}{3}(-6-9x)$$

2 Simplify:

$$1.2x-4.4x-1.9x$$

3 Solve:

$$-5x-\frac{1}{2}=\frac{3}{4}$$

4 Solve:

$$0.3x-1.6\le 2.3$$

5 $54.77+65.252=$

6 $175.63-44.793=$

7

$$\begin{array}{r} 43.3 \\ \times 2.8 \\ \hline \end{array}$$

8 $4\overline{)310.1}$

9 Determine the final price:

Original: $150.00

Tax: 8.25%

10 Determine the final price:

Original: $150.00

Discount: $33\frac{1}{3}\%$

11

$$\begin{array}{r} 3\frac{1}{6} \\ +1\frac{13}{15} \\ \hline \end{array}$$

12

$$\begin{array}{r} 6\frac{1}{10} \\ -2\frac{6}{25} \\ \hline \end{array}$$

13 $3\frac{3}{10}\times 2\frac{4}{11}=$

14 $6\frac{1}{2}\div 3\frac{1}{4}=$

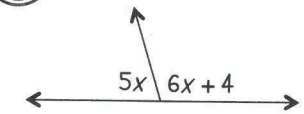
15 $14+(-8)=$

16 $(-11)(-15)=$

17 Evaluate:

$$\sqrt{324}$$

18 Solve for x:



19 Evaluate:

$$\frac{21+3^2}{5-11}$$

20 72 is 75% of what number?

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Name _____ Date _____

Equation Chain Worksheet

Directions: Solve the first equation & substitute your solution for *a* to solve the next equation for *b*. Repeat & solve all the equations in the chain. You should get the same solution for *a* in the last equation as you did in the first!

1) $\frac{3a-1}{5} = 7$ *a* =

2) $-8b + a = 92$ *b* =

3) $b = 5 + \frac{c}{2}$ *c* =

4) $\frac{4}{5}d - 42 = c$ *d* =

5) $\frac{e}{6} - d = -10$ *e* =

6) $\frac{-2f+e}{3} = 4$ $f =$

7) $12.5 = f - \frac{7g}{8}$ $g =$

8) $3g = \frac{h}{2} - 4$ $h =$

9) $-2i + 16 = \frac{h}{8}$ $i =$

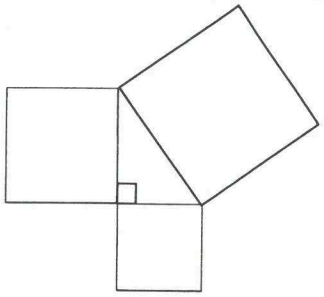
10) $\sqrt{a+13} + 4 = i$ $a =$

Name _____ Date_____ Period ____ Teacher _____

Pythagorean Theorem

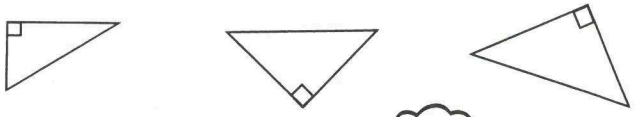
The Theorem

$$a^2 + b^2 = c^2$$

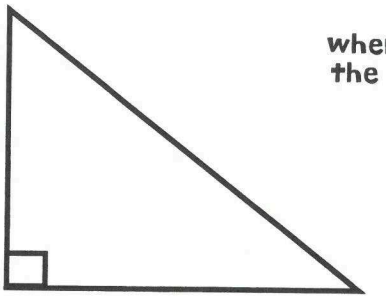


where a and b are the lengths of the _____, and c is the length of the _____.

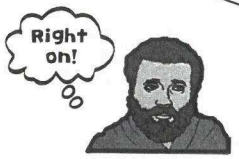
Label the legs and hypotenuse on the right triangles below.

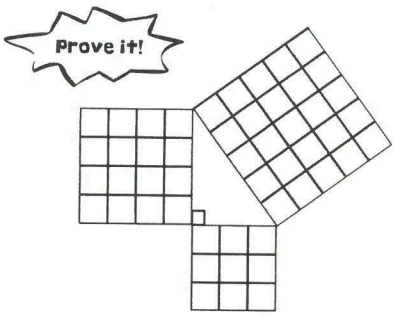


Label the legs and hypotenuse.



This angle measures ___°.
Since it measures ___°, this is a _____ triangle.
We can use the Pythagorean Theorem to find a missing _____ length for a _____ triangle.





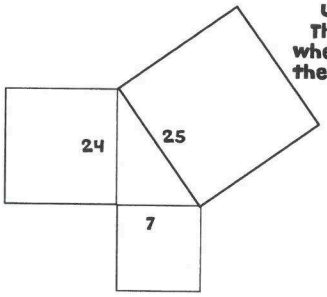
Find the length of each leg and label them on the diagram at the right. Find the length of the hypothenuse and label it on the diagram at the right. Substitute those values into the Pythagorean Theorem in the space below.

Find the area of each square and label the areas on the diagram at the right. Use the space below to set the sum of the areas of the squares that are attached to the legs equal to the area of the square that is attached to the hypotenuse. Is the statement true?

❑ I can explain a proof of the Pythagorean Theorem.

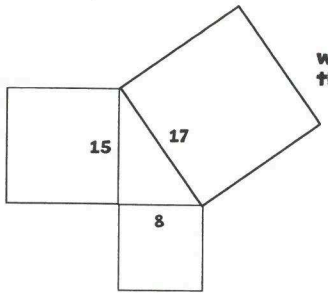
Name _____ Date_____ Period ____ Teacher _____

Prove It: Pythagorean Theorem



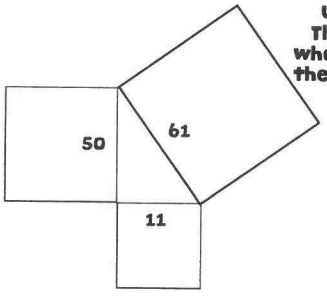
Use the Pythagorean Theorem to determine whether the triangle with the given side lengths is a right triangle.

Is this a right triangle? YES No



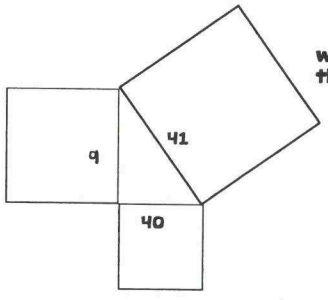
Use the Pythagorean Theorem to determine whether the triangle with the given side lengths is a right triangle.

Is this a right triangle? YES No



Use the Pythagorean Theorem to determine whether the triangle with the given side lengths is a right triangle.

Is this a right triangle? YES No



Use the Pythagorean Theorem to determine whether the triangle with the given side lengths is a right triangle.

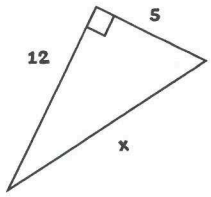
Is this a right triangle? YES No

❑ I can prove if a triangle is a right triangle or not using the Pythagorean Theorem.

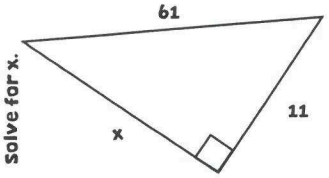
Name _____ Date_____ Period ____ Teacher _____

Practice Makes Perfect: Pythagorean Theorem

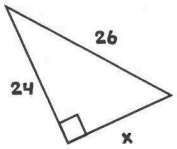
Solve for x.



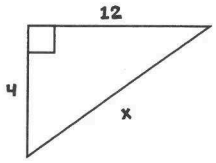
Solve for x.



Solve for x.

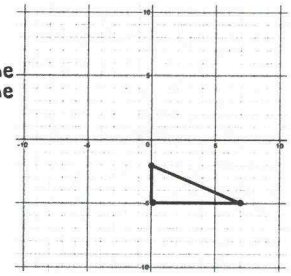


Solve for x.



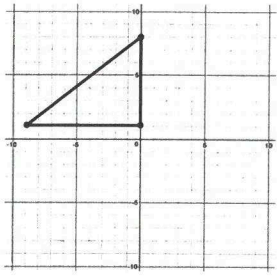
Adding another step...

Find the lengths of two legs of the right triangle using the coordinate grid. Then, use the Pythagorean Theorem to calculate the length of the hypotenuse.



Adding another step...

Find the lengths of two legs of the right triangle using the coordinate grid. Then, use the Pythagorean Theorem to calculate the length of the hypotenuse.



☐ I can solve for a side length in a right triangle using the Pythagorean Theorem.

Organize Your Information: Pythagorean Theorem

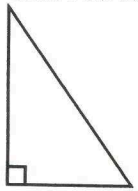
1 The Theorem

3 The Proof

5 An Example

2

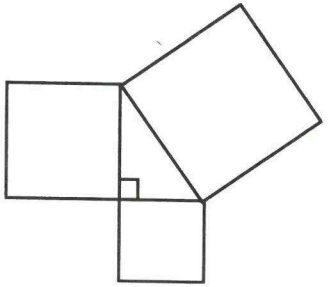
What is the Pythagorean Theorem?



What can you use it to find?

4

Use the diagram below to prove the Pythagorean Theorem.



6

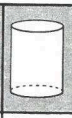
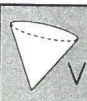
Solve for the missing side length of a right triangle in the space below.

Cut along the solid lines of the three file folder outlines. Cut along the solid lines of the three file inserts. Stack the 6 pieces of paper in the order that they should appear. Fold the 6 stacked pieces along the dotted line and staple below the line in order to create your mini-file book. Complete the file inserts for review of the Pythagorean Theorem.

Volume of Cylinders, Cones and Spheres Practice

Name:_____
Hour:_____

Directions: Calculate the volume of the cylinder, cone and sphere for the problems listed below. Label all of your answers with the appropriate units and show your work! Use 3.14 for π. Round your answers to the nearest tenth.

VOLUME PRACTICE	 Cylinder $V = \pi r^2 h$	 Cone $V = \frac{1}{3}\pi r^2 h$	 Sphere $V = \frac{4}{3}\pi r^3$
1) radius = 2 feet height = 4 feet	$V = \pi r^2 h$	$V = \frac{1}{3}\pi r^2 h$	$V = \frac{4}{3}\pi r^3$
2) radius = 4 feet height = 8 feet	$V = \pi r^2 h$	$V = \frac{1}{3}\pi r^2 h$	$V = \frac{4}{3}\pi r^3$
3) radius = 6 feet height = 12 feet	$V = \pi r^2 h$	$V = \frac{1}{3}\pi r^2 h$	$V = \frac{4}{3}\pi r^3$

Examine your answers for each problem. What conclusions can you make?

Volume of Cylinders, Cones & Spheres Vocabulary

Name:_____
Hour:_____

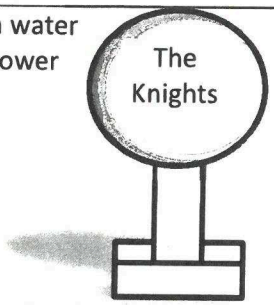
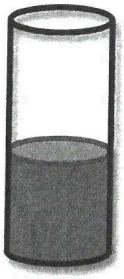
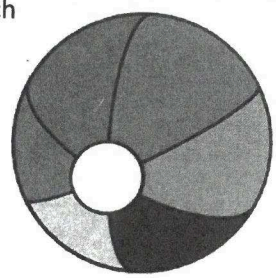
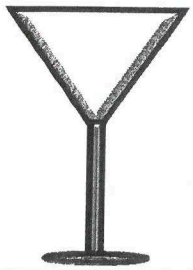
Directions: Read the vocabulary definitions below. Use the word bank to select the correct word for each definition. Use a highlighter or marker to find the word in the puzzle.

BASE	HEIGHT	FACE	SOLID	FORMULA
CYLINDER	CONE	SPHERE	NET	VOLUME

1) A three-dimensional shape, such as a ball, whose surface consists of all the points that are a given distance from the center of the shape. _____
2) The amount of space, or the capacity, of a three-dimensional shape. _____
3) The bottom face of a three-dimensional shape. _____
4) A three-dimensional shape with a circular end and a pointed end. _____
5) A three-dimensional (3D) object. _____
6) A polygon that forms one of the flat surfaces of the some three-dimensional shapes. _____
7) A pattern that you can cut and fold to make a model of a solid shape. _____
8) A solid with two congruent circular bases that lie in parallel planes. _____
9) The length of a perpendicular line drawn from one vertex to the opposite side. _____
10) A group of mathematical symbols that express a relationship or that are used to solve a problem. _____

F	O	R	M	U	L	A	P	N	B	R	E	C	X	O	K	J	S	E	D	B	G	Y	T	F
A	L	O	R	F	H	K	E	Y	R	D	E	N	O	C	C	V	U	Q	S	T	R	M	A	Y
X	B	T	H	C	F	M	R	I	U	T	B	V	M	L	S	W	S	O	I	V	Q	C	E	K
A	C	C	N	E	T	Y	I	K	F	C	C	X	W	L	F	X	O	R	Q	U	E	C	S	W
B	H	Y	D	O	M	G	M	C	E	F	R	H	N	M	I	L	L	O	V	R	S	X	C	C
A	W	S	E	E	F	M	E	O	P	C	D	E	G	X	S	K	I	P	E	O	T	C	D	E
M	B	E	Z	W	F	G	T	U	H	E	I	G	H	T	H	T	D	C	X	M	M	N	I	D
S	A	M	T	F	G	G	E	B	A	R	E	A	J	H	X	Y	A	L	P	Y	U	V	N	G
H	S	P	H	E	R	E	R	E	J	K	C	D	R	L	S	O	R	X	W	T	H	L	S	E
P	E	J	Y	F	X	C	E	I	Z	R	T	B	H	E	S	M	E	U	G	C	B	T	O	D
E	D	T	V	N	Y	R	D	C	Y	L	I	N	D	E	R	L	A	K	F	Y	B	C	X	V

Cut out each rectangle so that you can match the picture with the description, the volume and the correct units. Glue the matching pieces to a sheet of paper in the above order. Use 3.14 for π and round to nearest tenth.

above ground pool 	A cone that is 12 across and 6 high.	226.1	cubic feet
a water tower 	A cylinder that is 8 across and 13 tall.	14130	cubic inches
glass of water 	A sphere that is 18 across	4239	cubic centimeters
beach ball 	A cylinder that is 4 high and 12 across	653.1	cubic feet
funnel water slide 	A sphere that is 30 across.	3052.1	cubic feet
a stemmed glass 	A cone that is 30 across and 18 high.	452.2	cubic centimeters

RICHMOND HILL K-8

8th Grade Physical Science

1st Semester Review
Learn at Home Lessons

Week 1: Learn at Home Activities

Day 1: States of Matter Guided Reading

1. Read and annotate the text. Number the paragraphs, underline key terms, highlight definitions, and circle any other important information.
2. Complete accompanying activities.

Day 2: Properties of Matter

1. Read the notes pages.
2. Complete the guided notes activity.

Day 3: Density Challenge: Density Oops!!!!!

1. Density is an important physical property of matter use what you know to solve the problem.

Day 4: Physical and Chemical Changes

1. Complete the worksheet using your notes and what you know about chemical and physical changes.

Day 5: Physical and Chemical Changes Color by Number

1. Read each description and determine if it is a physical or chemical change. Then color the picture based on your answers.

Week 2: Learn at Home Activities

Day 1: Atoms, Elements, Compounds, and Mixtures

1. Read the notes pages.
2. Complete the guided notes activity.

Day 2: Classification of Matter

1. Fill in the graphic organizer with definitions and examples.

Day 3: All about matter study guide

1. Complete the study guide based on what you know about matter and it interactions.

Day 4: Intro to the Periodic Table

1. Read the notes pages
2. Complete the guided notes activity

Day 5: Periodic table

1. Color the periodic table using the notes from day 4. Follow the directions at the top of the page
2. Complete the periodic table license plate activity on a separate sheet of paper. Be creative.

STATES OF MATTER

Name: _____

Matter is all around you. It's anything you can touch or feel. Determine if each of the things listed at the right is or is not matter.

After you finish categorizing the 10 items, check your answers at the bottom of the next page. How did you do?

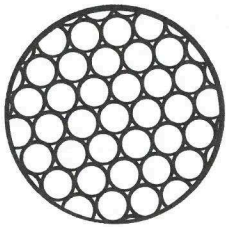
1. DESK	YES or NO
2. WATER	YES or NO
3. AIR	YES or NO
4. LIGHT	YES or NO
5. YOUR BODY	YES or NO
6. BACKPACK	YES or NO
7. DIRT	YES or NO
8. JUICE	YES or NO
9. PAPER	YES or NO
10. THE SUN	YES or NO

What is Matter?

Now that we know that matter can look a lot of different ways, let's dive deeper into what it is. Everything in the universe is either matter (things we can touch) or energy (the power to move or change matter). If you missed number 4, that's because light is an example of energy. You can't touch it. The rest of the things listed are all examples of matter.

Matter is made up of tiny particles called atoms. These particles can combine with other atoms to become molecules. For example, two hydrogen atoms and an oxygen atom can combine to create a water molecule! The qualities of the objects around you depend on what kind of atoms they are made of and how those atoms are arranged.

Your desk is firm while the water in your bottle is able to slosh around. The reason for these differences can be found at a molecular level. The desk and the water are made of different kinds of atoms. But what if we freeze the water to become as solid as the desk? How do you explain that?



SOLID

Matter Changes State

Heat is a measure of how fast the particles of a substance are moving. When particles are moving really fast, that substance can be called "hot." When particles are moving slow, we call it "cold." A **solid** has the lowest resting temperature of all the states of matter. That means that its particles are barely moving. For that reason, they can become very closely packed together. This gives the solid the tough quality that we expect from wood, glass, and other solid times.

As energy is added to the solid, the particles will begin to move faster. They will vibrate and shift around. Sometimes, they may even break out of the solid structure

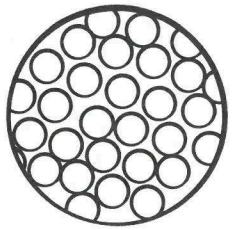
STATES OF MATTER

Name: _____

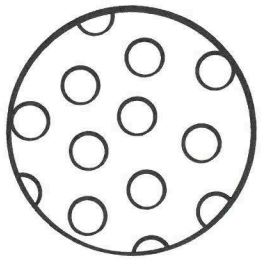
they had formed, and enter into a more flexible, or fluid state. The process we are describing is called **melting**. Melting happens whenever a solid is heated to the point that its particles become so active that they no longer hold their shape. Different substances melt at different temperatures. Scientists call this its **melting point.**

Liquids are in a state of matter with a mid level range of heat. Their particles are freely moving around, and are defined by their tendency to take the shape of whatever object they are contained in. The atoms and molecules of a liquid are still not moving fast enough to escape gravity, though.

When enough heat is added to liquid, the particles speed up even more. Eventually, they may break free from gravity's grip and float freely around whatever container they are in.



LIQUID



GAS

This process of turning liquid to gas is known as **evaporation**. A **gas** has the most energy of all the states of matter, and that means that its particles are moving the fastest. The particles move so fast and they expand to completely fill any container they are in.

Matter can change state in the other direction as well. When as gas is cooled enough it will return to a liquid state in a process known as **condensation**. This is the process that is responsible for turning clouds to rain.

Liquid, when cooled, can return to a solid state as well. As its particles slow down they eventually reform a solid structure. This process is known as **freezing**.

How Common are State Changes?

Every substance can become all 3 states. Even rock can become liquid, which we see happen naturally in volcanoes! If we heated them even more, they would become a gas too. Usually, in nature, temperatures don't get high or low enough for many common items to change states.

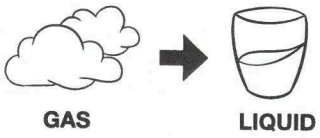
Water, on the other hand, easily changes state even at common Earth temperatures. It's not unlikely to encounter solid, liquid, and gas water all in the same day! It's considered a special quality of water that it can change state so easily. Without it, the water cycle (which supports all life on Earth) would cease to exist.

EVERYTHING IS MATTER EXCEPT NUMBER 4.

STATES OF MATTER

Name: _____

Give the correct definition for the following changes in state of matter.



GAS → LIQUID

_____

SOLID → LIQUID

_____

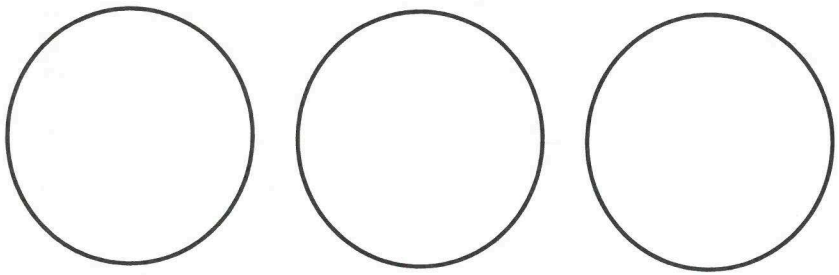
LIQUID → SOLID

_____

LIQUID → GAS

_____

Draw the behavior of the particles in each state.

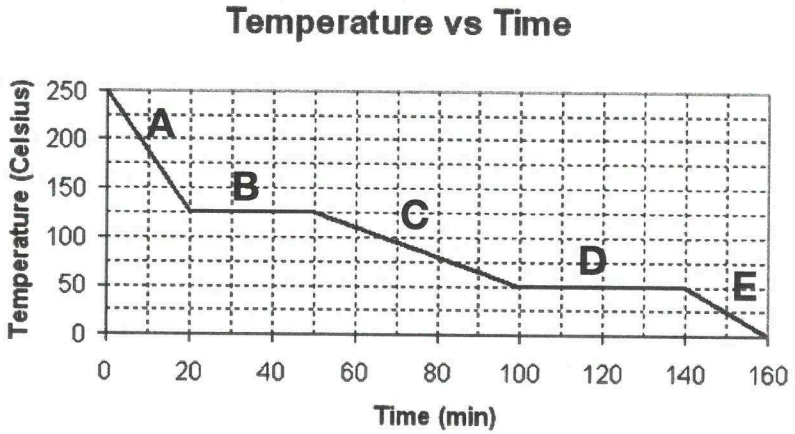


SOLID **LIQUID** **GAS**

STATES OF MATTER

Name: _____

The graph below shows a substance changing state as the temperature drops. Study the graph to answer the questions below.



1. At which point in the graph is the substance a gas?

2. At which point is it a liquid?

3. At which point is it a solid?

4. Where is condensation happening?

5. At what temperature does this substance begin to condense?

6. Where is freezing happening?

7. At what temperature does this substance begin to freeze?

STATES OF MATTER

Name: _____

Cut out the examples below. Glue the objects under their correct state of matter.

SOLID	LIQUID	GAS

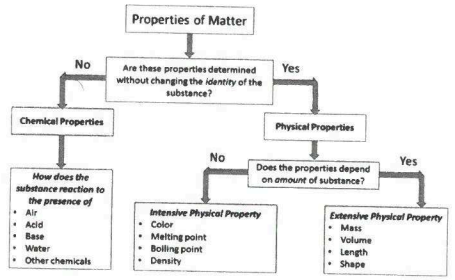
WATER VAPOR	OCEAN	DIAMOND
ICE CREAM	OXYGEN	BLOOD
SMOKE	SNOW	BONE
MILK	JUICE	HELIUM
RAIN	AIR	GLASS

1/7/2021

PROPERTIES OF MATTER

How we can tell "stuff" apart

IS IT PHYSICAL OR CHEMICAL?



WHAT ARE PROPERTIES?

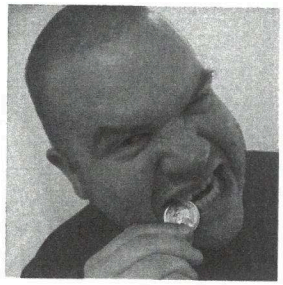
- Properties are qualities of matter
  - Physical properties – what can I observe with my 5 senses?
  - Chemical properties – what does it react with?
- Can be quantitative or qualitative
  - Quantitative – Can be assigned a number or value, objective measurement
  - Qualitative – Can not be assigned a numerical value, subjective description
- Can help us identify what a substance is made of
  - Some properties are specific to given substances

PHYSICAL PROPERTIES

Extensive and Intensive

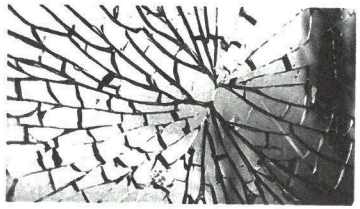
MALLEABILITY

- Malleability means how much a substance can be hammered flat or bent
  - Example: Gold, aluminum foil
- Qualitative



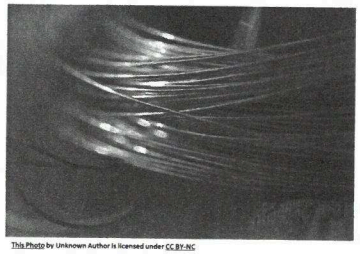
BRITTLENESS

- Brittleness is whether a substance will break with little strain
  - Example: Glass breaking
- Qualitative



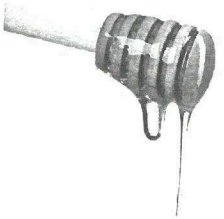
DUCTILITY

- Ductility is the ability of a substance to be drawn into a wire
  - Example: Copper can be made into wires easily
- Qualitative



VISCOSITY

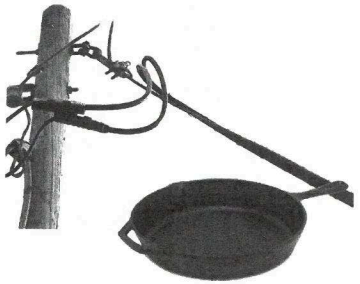
- Viscosity is the thickness of a liquid, or how slowly it pours
  - Low viscosity: Water
  - High viscosity: Honey
- Qualitative



1/7/2021

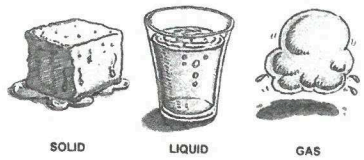
CONDUCTIVITY

- Conductivity is how well a substance <u>transfers heat and/or electricity</u>
  - Good conductor: <u>Copper, gold, silver</u>
  - Bad conductor (good insulator): <u>Ceramic, rubber</u>
- <u>Qualitative</u>



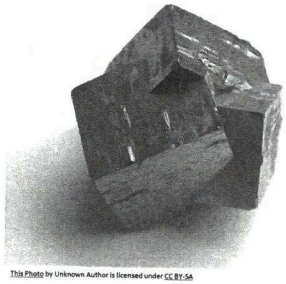
STATE OR PHASE

- The state or phase of the matter is whether a substance is <u>a solid, liquid, or gas</u>
  - Example: <u>Water is a liquid at room temperature</u>
- <u>Qualitative</u>



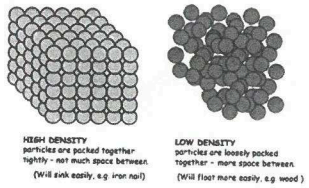
LUSTER

- Luster is how <u>shiny an object is</u>
  - Example: <u>Fool's Gold (pyrite) has high luster</u>
- <u>Qualitative</u>



DENSITY

- Density is the amount of <u>mass in a given volume of a substance</u>
  - Example: 500g of feathers and 500g of bricks have the same mass, but the feathers will take up more space
- Density is characteristic of the substance
- Can be calculated using <u>d=m/v</u>
- <u>Quantitative</u>



CHEMICAL PROPERTIES

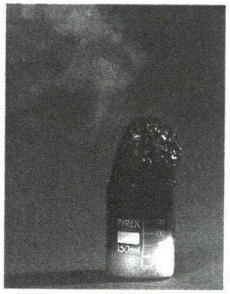
How does it react?

FLAMMABILITY

- Flammability is how easily a substance burns
  - Example: Gasoline burns very easily, and is therefore quite flammable.

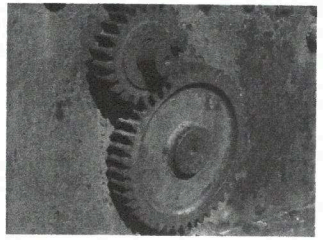
REACTION WITH ACID

- Does it react when exposed to acid?
  - Baking soda reacts with acetic acid (vinegar) to produce carbon dioxide gas
  - Metals will react with acid to produce hydrogen gas
  - Sugar reacts with sulfuric acid to create a black pillar



CORROSIVITY

- Corrosivity is the ability of a substance to degrade another object
  - Example: Salt water causing iron to rust



ABOUT THIS RESOURCE

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Credits:

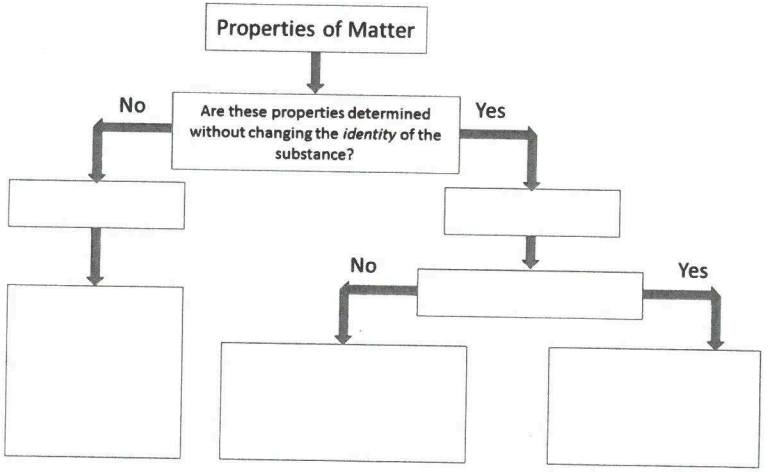
- Fonts used are Arial Narrow and KG All of Me (available from Kimberly Geswein Fonts)

NOTES: PROPERTIES OF MATTER Name: _____

WHAT ARE PROPERTIES?

- Properties are _____ of matter
  - Physical properties – _____
  - Chemical properties – _____
- Can be quantitative or qualitative
  - _____ – Can be assigned a number or value, objective measurement
  - _____ – Can not be assigned a numerical value, subjective description
- Can help us identify what a substance is made of
  - Some properties are _____ to given substances

IS IT PHYSICAL OR CHEMICAL?



NOTES: PROPERTIES OF MATTER Name: _____

PHYSICAL PROPERTIES

MALLEABILITY

- Malleability means how much a substance can _____
  - Example: _____
- _____

BRITTLENESS

- Brittleness is whether a substance will _____
  - Example: _____
- _____

DUCTILITY

- Ductility is the ability of a substance to be _____
  - Example: _____
- _____

VISCOSITY

- Viscosity is the _____
  - Low viscosity: _____
  - High viscosity: _____
- _____

CONDUCTIVITY

- Conductivity is how well a substance _____
  - Good conductor: _____
  - Bad conductor (good insulator): _____
- _____

NOTES: PROPERTIES OF MATTER Name: _____

LUSTER

- Luster is how _____
  - Example: _____
- _____

STATE OR PHASE

- The state or phase of the matter is whether a substance is _____
  - Example: _____
- _____

DENSITY

- Density is the amount of _____
  - Example: 500g of feathers and 500g of bricks have the same mass, but the feathers will take up more space
- Density is characteristic of the substance
- Can be calculated using _____
- _____

CHEMICAL PROPERTIES

REACTION WITH ACID

- Does it react when exposed to acid?
  - Baking soda reacts with acetic acid (vinegar) to _____
  - Metals will react with acid to _____
  - Sugar reacts with sulfuric acid _____

NOTES: PROPERTIES OF MATTER Name: _____

FLAMMABILITY

- Flammability is how _____
  - Example: _____

CORROSIVITY

- Corrosivity is the ability of a substance to _____
  - Example: _____

Density
OOPS!!!!!

Name_____

Imagine that you work at a chemical plant. Four different liquid chemicals have accidentally spilled into the same tank. The liquids do not dissolve in one another, so they must have settled in the tank in four separate layers. The sides of the tank are made of steel, so you can only see the surface of what's inside. The problem is that you need to remove the red chemical to use in a reaction later this afternoon. How will you find and remove the red chemical? By finding the chemicals' densities, of course!

The following liquids were spilled into the tank:

	Green Liquid	Blue Liquid	Red Liquid	Yellow Liquid
Mass	36kg	129.6kg	115.2kg	96kg
Volume	48L	144L	96L	120L
Density				

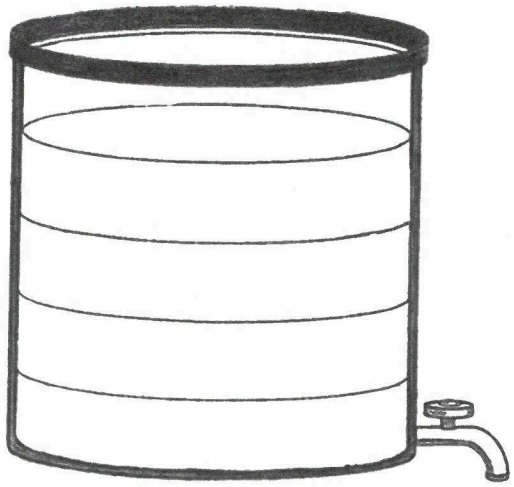
1. Calculate the density of each liquid and add the information to the data box above.

2. Determine the order in which the liquids have settled in the tank.

   First (bottom)_____ Second _____

   Third _____ Fourth (top) _____

3. Use colored pencils to sketch the liquid layers in the container below.



Name: _____ Date: _____

Physical and Chemical Changes

List 3 examples of a physical change.

1. _____
2. _____
3. _____

List 3 examples of a chemical change.

4. _____
5. _____
6. _____

List 3 examples of a physical property.

7. _____
8. _____
9. _____

List 3 examples of a chemical property.

10. _____
11. _____
12. _____

13. Describe 2 physical changes that could occur with a piece of paper.

14. Describe a chemical change that could occur with a piece of wood.

15. List 3 common household items. Identify 2 physical properties of each item.

16. Identify a chemical property of each item listed in question 15.

17. Identify 5 different types of evidence that show a chemical reaction has taken place.

18. A woman dissolves sugar into a cup of tea. Is this an example of a physical change or chemical change? Explain your answer.

Read each situation below and decide if it represents a physical or chemical change. Then, list at least one piece of evidence that proves your answer.

Situation	Type of Change	Evidence
19. Drying wet clothes		
20. A bike chain starting to rust		
21. Fireworks exploding		
22. Red food coloring in water		
23. Burning a piece of bread		

Match each term with the correct definition. Then write the number of each vocabulary term in the magic square. When you add the numbers in the columns, rows, and diagonals the sums should all be the same.

1. _____ Endothermic Reaction
2. _____ Chemical Reaction
3. _____ Property
4. _____ Exothermic Reaction
5. _____ Physical Property
6. _____ Physical Change
7. _____ Chemical Change
8. _____ Matter
9. _____ Chemical Property

A. The process in which one substance is chemically changed into a new substance.

B. A change that results in the formation of new substances.

C. A change in which the substance is altered, but it is not changed into a new substance.

D. A characteristic that can only be determined by changing the identity of a substance.

E. A characteristic that can be observed or measured without changing the composition of a substance.

F. A chemical reaction accompanied by the absorption of heat.

G. A chemical reaction accompanied by the release of heat.

H. A particular characteristic of a substance.

I. Any substance that has mass and takes up space.

Magic Square

A _____	B _____	C _____	= _____
D _____	E _____	F _____	= _____
G _____	H _____	I _____	= _____
= _____	= _____	= _____	= _____

Physical/Chemical Changes & Properties Color by Number

Name: _____ Date: _____ Class: _____

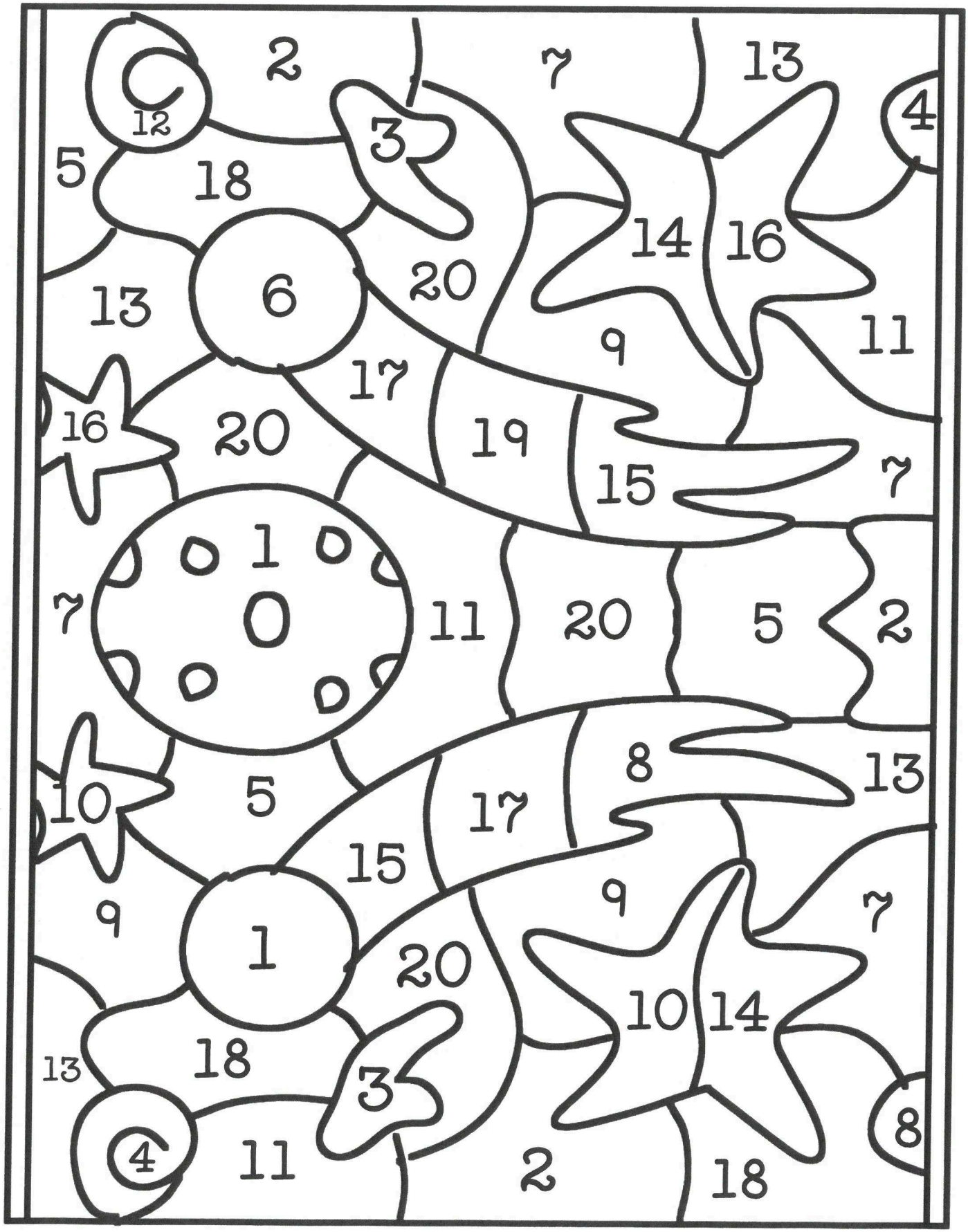
Directions: Read each question, circle the correct answer, and then find the question number on the picture and color it the color you circled.

1. Cutting paper is an example of what?	Physical Change color yellow	Chemical Change color green	Physical Property color blue
2. Flammability is an example of what?	Physical Property color grey	Chemical Change color orange	Chemical Property color black
3. Color, mass, shape, and density are all examples of what?	Physical Properties color red	Chemical Properties color blue	Physical Changes color purple
4. A sign that a chemical change has occurred would be _____.	Change of state color red	Change in temperature color blue	Change in size color orange
5. A change in a physical property but not in the substance itself is a _____.	Physical Change color black	Chemical Change color pink	Physical Property color grey
6. A change of one substance into another substance is a _____.	Physical Change color yellow	Chemical Change color blue	Chemical Property color yellow
7. Salt dissolving in water is an example of what?	Chemical Change color blue	Chemical Property color white	Physical Change color black
8. In a chemical change can you get it back to its original form?	Yes color white	No color red	Sometimes color blue
9. Cooking an egg is an example of what type of change?	Physical Change color red	Chemical Property color yellow	Chemical Change color black

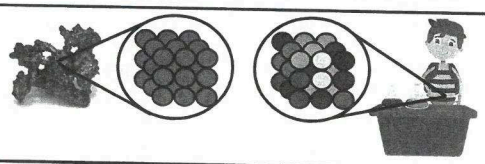
10. _____ are characteristics of a substance that you can see without changing the identity of the substance.	Physical Properties color yellow	Chemical Properties color red	Physical Changes color green
11. Painting a piece of paper is an example of what?	Physical Property color grey	Chemical Change color purple	Physical Change color black
12. Melting, evaporation, condensation, and sublimation are examples of _____.	Chemical Changes color yellow	Physical Properties color purple	Physical Changes color blue
13. Water freezing is an example of a _____.	Physical Change color black	Chemical Change color white	Physical Property color blue
14. Burning leaves is an example of what?	Chemical Property color red	Chemical Change color yellow	Physical Change color blue
15. _____ describe how substances can from a new substance.	Physical Properties color purple	Chemical Change color white	Chemical Properties color red
16. Texture, ductility, and volume are examples of _____.	Physical Properties color yellow	Physical Changes color green	Chemical Properties color red
17. In a physical change do you end up with a new substance?	Sometimes number color blue	Yes color grey	No color red
18. Cracking a mirror is an example of what?	Physical Change color black	Chemical Change color white	Physical Property color blue
19. An apple rotting is an example of what?	Chemical Property color grey	Chemical Change color red	Physical Change color orange
20. If an object changes to a different state of matter, this is called a _____.	Physical Property color grey	Chemical Change color blue	Physical Change color black

Physical/Chemical Changes & Properties Color by Number

Name: _____ Date: _____ Class: _____



Atoms, Elements, Compounds & Mixtures

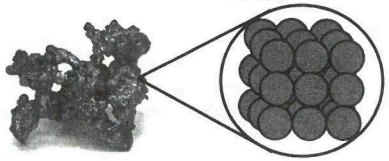


Learning Objectives

1) To be able to explain what an atom is
2) To state the differences between elements, compounds and mixtures
3) Be able to give examples of elements, compounds and mixtures
4) To be able to make a compound from its elements

What are atoms?

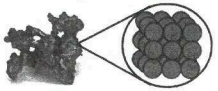
- Copper is a metal that can be used for wires and pipes.
- If we zoomed in trillions of times we would see tiny particles – these are known as **atoms**



Atoms make up you, the Earth, stars and everything else

Atom Facts

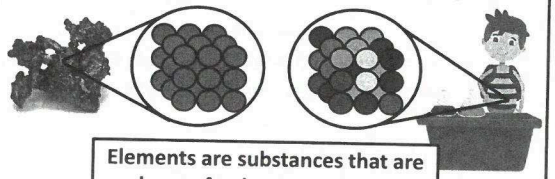
Atoms are the **basic building block of all matter** and are very small.



- Your body is made of 7 billion, billion, billion, atoms
- Each year 98% of your atoms are replaced for new ones
- 50 million atoms lined side by side would be as wide as a full stop.
- If you counted every grain of sand on Earth you would have nearly the same number of atoms in one grain of sand

Atoms and Elements

- Some chemicals are made of only one type of atom and some are made of two or more atoms joined together

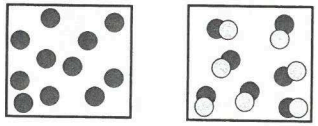


Elements are substances that are made up of only one type of atom

They cannot be broken down into anything simpler

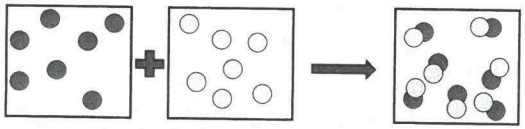
What is an element?

Which is an element? Explain your answer



The box on the left is an element
– it is made of only one type of atom

Element or Compound?



two elements *a compound*

When two (or more) elements are chemically joined together they form compounds

List all the compounds that you know in 60 seconds

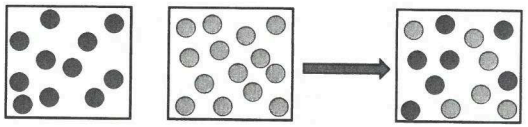
Elements & Compounds

- When elements join together they behave in different ways than when as elements.
- Example: hydrogen and oxygen react to form water
- On a mini whiteboard write down all the similarities and differences between oxygen, hydrogen and water

Similarities	Differences

What is a mixture?

Why is the following not a compound?

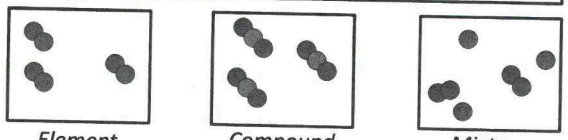


two elements *a mixture*

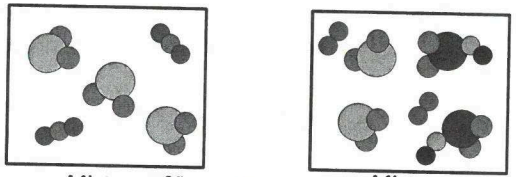
A mixture contains two or more substances that are not joined together. They can be separated

List all the compounds that you know in 60 seconds

Element, compound or mixture?



Element *Compound* *Mixture*

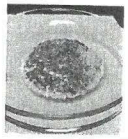


Mixture

Mixture

Separating Mixtures

- Iron and sulfur are elements – they are each made of only one type of atom.
- If mixed together how would you separate them?
- Complete the experiment to separate the mixture



- ***Using a magnet – iron is magnetic***

Making Compounds

- When iron and sulfur react together they form a compound, iron sulfide
- How would you know if you had formed a compound?
- ***The iron sulfide is not magnetic***

Experiment

Aim:

- To show that the properties of elements are different to the compounds they make

Method:

- Follow your instructions given by your teacher

Results:

- How do you know a compound has been made?

How have you done?

- Complete the worksheet to test your understanding
- Show me after you've completed each task

Learning Intentions

1) To be able to explain what an atom is
2) To know the difference between elements, compounds and mixtures
3) Be able to give examples of all three
4) To be able to make a compound from its elements

Atoms, Elements, Compounds & Mixtures

Name:

Teacher:

Date:

Learning Objectives

- To be able to explain what an atom is
- To know the difference between elements, compounds and mixtures
- Be able to give examples of elements, compounds and mixtures
- To be able to make a compound from its elements

Atoms:

Atoms are the basic building block of all matter and are incredibly small. They make up you, the Earth, stars and everything else.

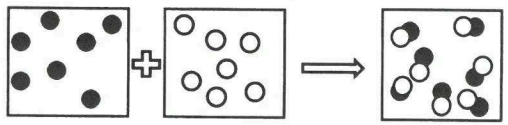
Elements:

Some chemicals are made of only one type of atom and some are made of two or more atoms chemically joined together. **Elements** are substances that are made up of only one type of atom. They cannot be broken down into anything simpler.

Write the names of any elements that you know

Compounds:

When two (or more) elements are chemically joined together they form compounds.



two elements *a compound*

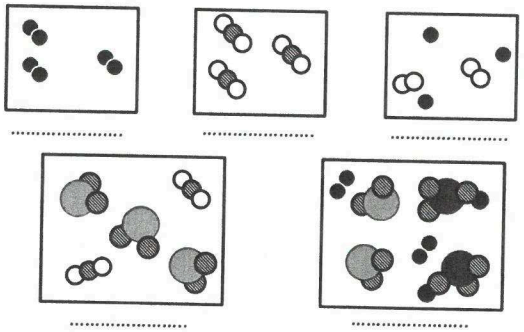
Write the names of any compounds that you know

Mixtures:

A mixture contains two or more substances that are not chemically joined together and can be separated. Sand and water are examples of a mixture. Air is another example of a mixture.

Element, compound or mixture?

Decide if the following represent an element (E), compound (C) or mixture of elements (ME), mixture of compounds (MC) or mixture of elements and compounds (MEC)



....

....

Experiments:

1. Separating mixtures

How did you separate the mixture of the two elements iron and sulfur? Describe what you observed during the experiment

.....

.....

2. Making Compounds

By heating the iron and sulfur we can make a new compound, iron sulfide. Now the atoms are chemically joined together.

Instructions:

- Hold the mini test tube containing iron and sulfur mixture with a set of metal tongs.
- Using a Bunsen burner gently heat until the mixture starts to glow.
- Allow to cool on a heat resistant mat and place a magnet next to the mini test tube

Describe what you observed when you placed a magnet on the side of the mini test tube

.....

How do you know a compound was formed?

.....

Atoms, Elements, Compounds & Mixtures

Task 1: Rewrite the sentences if you think they are wrong

1) All matter is made of tiny particles called elements

.....

2) An element is a substance made of one atom

.....

3) Air, sea water and oxygen are mixtures

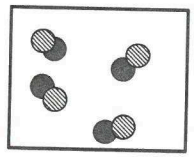
.....

4) Compounds are easily separated as their atoms are not chemically joined together

.....

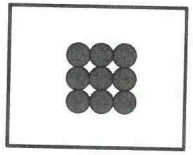
Task 2: Decide if the following are examples of elements, compounds or mixtures.

Give reasons for your answers



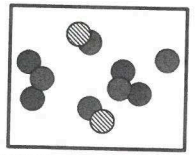
This is .....

I know this because ...



This is .....

I know this because ...



This is .....

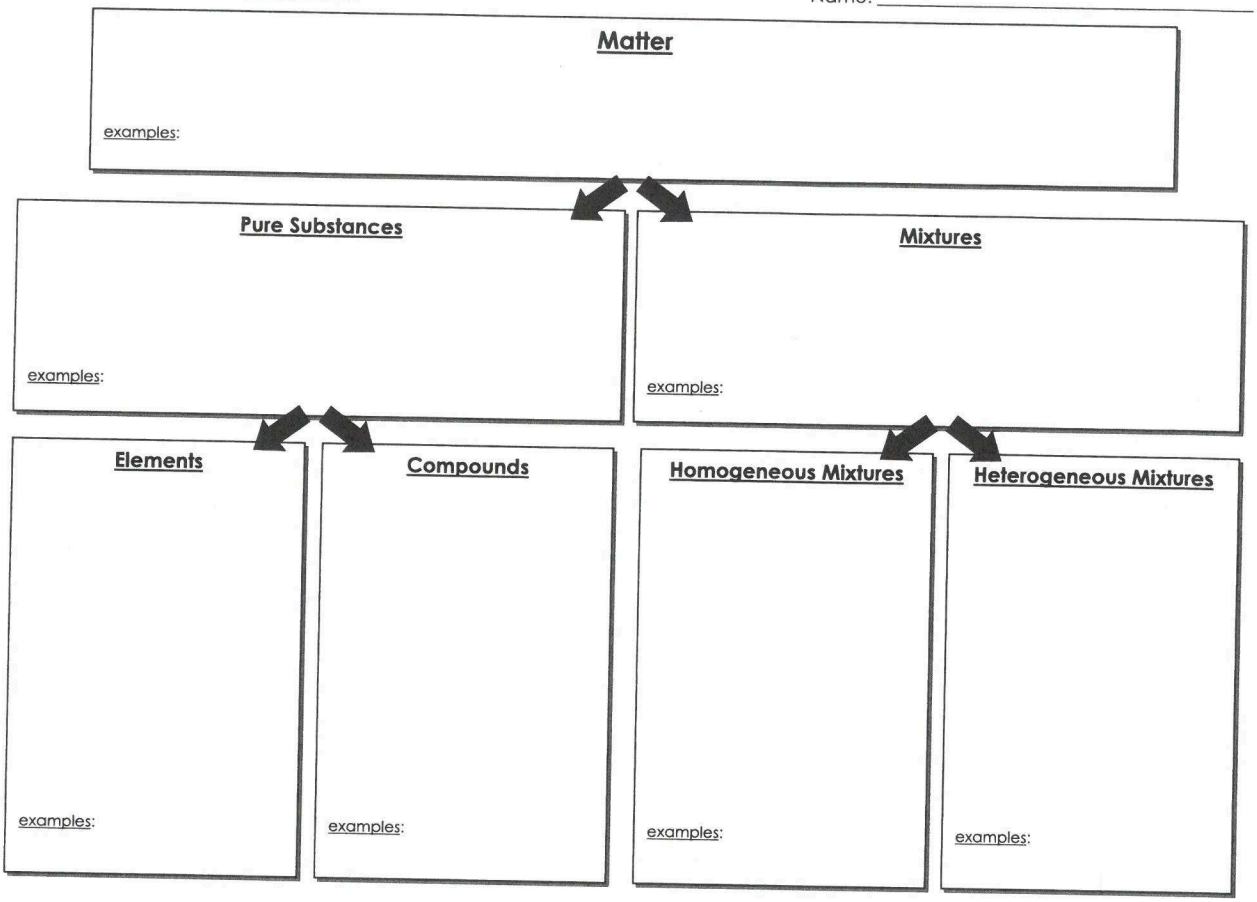
I know this because ...

Task 3: Write a paragraph stating what you have learned this lesson.

Include the words: *atom, element, compound, mixture (and more if you can).*

Classification of Matter

Name: _____



matter

ALL ABOUT MATTER

study guide

Name _____

Date _____

Block _____

1. Define matter. _____

2. What holds atoms together in a molecule? _____

3. List three examples of a chemical formula. _____

4. Complete the chart. Identify each as an element (E), compound (C), or Mixture (M).

Soil		Sulfur dioxide		H_2SO_4	
Helium		Blood		Sugar water	
Carbon dioxide		water		Salt	
Salad		Bronze		Iron	
Sand and iron		Air		Oxygen	

5. Complete the chart. Identify each as a physical change (P) or chemical change (C).

Burning paper		Boiling water	
Toasting marshmallows		Crushing a can	
Frying an egg		Cutting a piece of paper	
Filtering a mixture		Dissolving salt in water	
Melting ice		Baking cookies	
Digesting food		Dissolving zinc in acid	
Grinding chalk into powder		Stretching copper into wire	
Hammering aluminum into sheets		Burning gasoline	

6. What determines a substance's state of matter? _____

7. Draw the particles for a solid, liquid, and gas in the space below.

SOLID	**LIQUID**	**GAS**

8. The particle theory of matter states:

   a. All matter is made up of _____.

   b. All matter is in constant _____.

   c. Particles _____ each other.

   d. The faster the particles move, the _____ the temperature.

9. Match the following vocabulary to the definition.

____. Melting point	a. Temperature where a liquid turns into a gas
____. Condensation point	b. Temperature where a solid turns into a liquid
____. Boiling point	c. Temperature where a liquid turns into a solid
____. Freezing point	d. Temperature where a gas turns into a liquid

10. Match the following vocabulary to the definition.

____. Ductility	a. Ability to hammer into a sheet
____. Density	b. Reaction where a substance combines with oxygen creating an explosion
____. Malleability	c. Ability to pull into wire
____. Combustion	d. Mass divided by volume

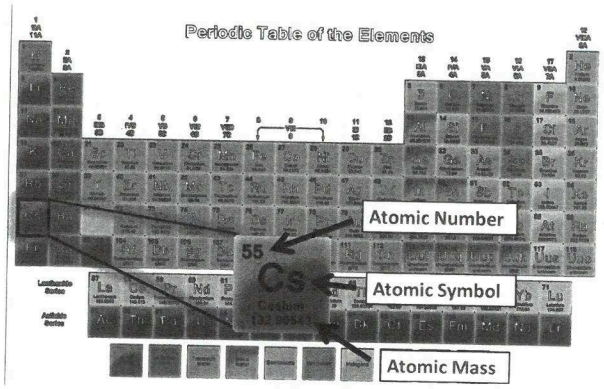
11. Complete the chart.

Compound	Number of atoms	Number of elements
$C_7H_8N_4O_2$		
$NaHCO_3$		

1/7/2021

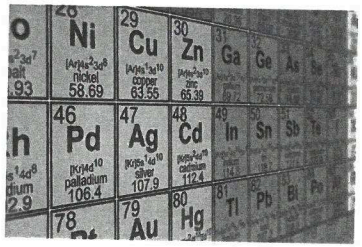
HISTORY OF PERIODICITY

The Periodic Table of the Elements



MODERN PERIODIC TABLE

- Organized by increasing atomic number
- 7 rows (periods)
  - 1 row = 1 energy level
  - More elements in higher-number periods because there are more spots for electrons in those levels



ATOMIC NUMBER

- Number of protons
- Always the same for any given element
- Tells you how many electrons there are in a neutral atom of the element

ATOMIC MASS

- Measured in Atomic Mass Units (amu)
  - Proton = 1 amu
  - Neutron = 1 amu
  - Electron = 0 amu
- Atomic Mass = # Protons + # Neutrons
- # Neutrons = Atomic Mass – Atomic Number

MODERN PERIODIC TABLE

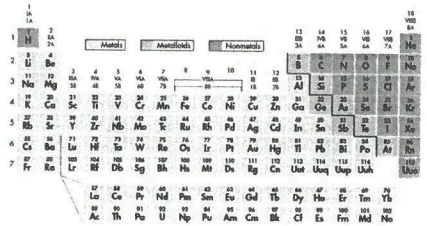
- Elements that have similar chemical and physical properties end up in the same column in the periodic table
  - Called a "group" or "family"

MODERN PERIODIC TABLE

- Properties change as you move left to right
- Periodic Law: When elements are arranged in order of increasing atomic number, there is a periodic repetition of their physical and chemical properties
  - A.k.a: periodocity

MODERN PERIODIC TABLE

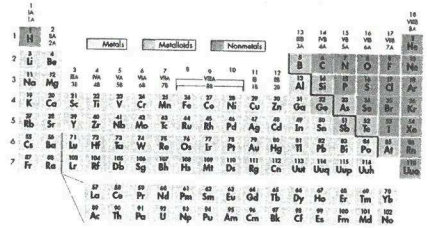
- Periods 6 and 7 are partially put under the table, to make it more compact



CLASSES OF ELEMENTS

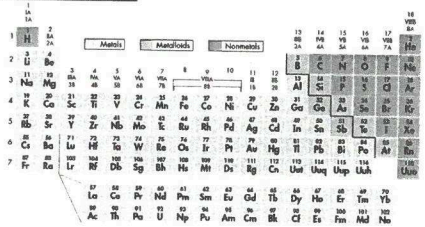
CLASSES OF ELEMENTS

- Across a period, the properties of elements become <u>less metallic</u> and <u>more nonmetallic</u>



CLASSES OF ELEMENTS

- Broad categories of similar general properties
  - <u>Metals, Nonmetals, Metalloids</u>

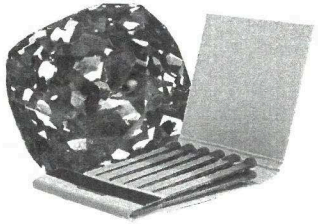


METALS

- Good <u>conductors</u>
- High <u>luster</u>
- <u>Solids</u> at room temperature (except Mercury)
- <u>Ductile</u> – can be drawn into wires
- <u>Malleable</u> – can be hammered thin

NONMETALS

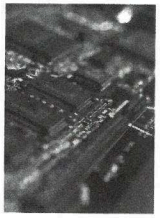
- Pretty much opposites of metals
- Generally are poor conductors
  - Carbon (as graphite) is the exception
- Nonmetal solids tend to be brittle



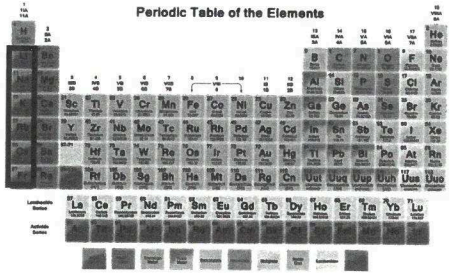
FAMILIES OF ELEMENTS

METALLOIDS

- Similar to both metals and nonmetals
  - Changing conditions will change whether behaves like metal or nonmetal
- Silicon is a poor conductor (like nonmetal)
  - If a small amount of boron is mixed with the silicon, becomes a good conductor (like metal)

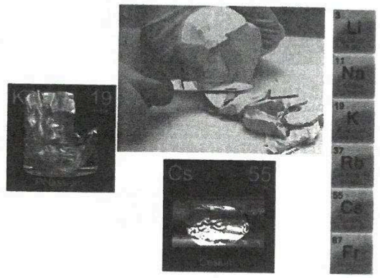


ALKALI METALS

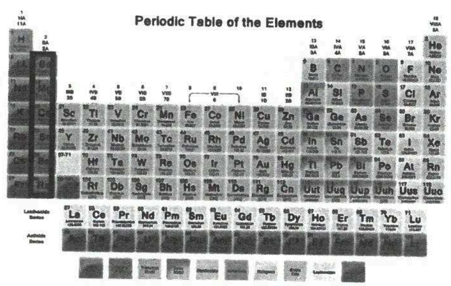


ALKALI METALS

- Group 1
- Highly reactive
- Very soft metals
- Float in water
- React with water

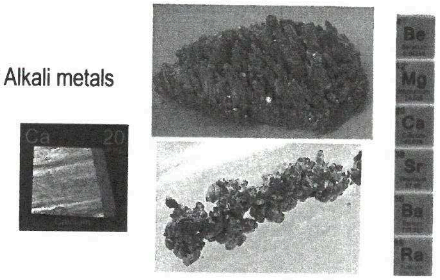


ALKALINE EARTH METALS

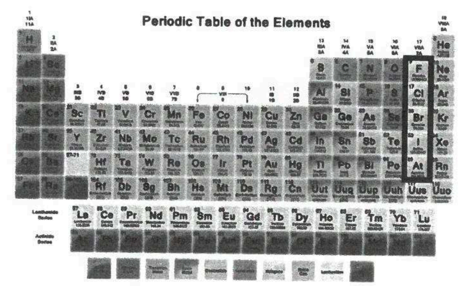


ALKALINE EARTH METALS

- Group 2
- Still pretty reactive
- Harder and denser than Alkali metals

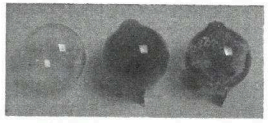


HALOGENS



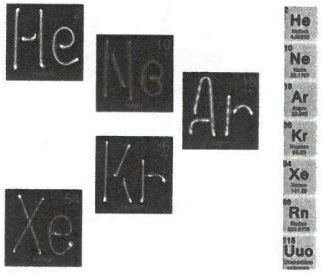
HALOGENS

- Group 17
- All are highly reactive
- Fluorine, Chlorine – Caustic gases (burning/poisonous)
- Bromine – liquid
- Iodine – solid, prevents thyroid issues, used as antiseptic
- Astatine – Rarest element of all

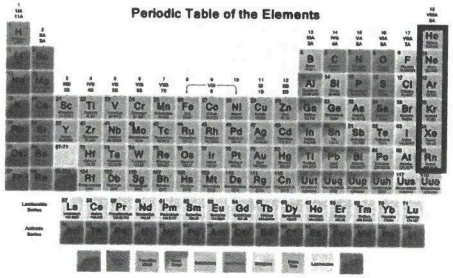


NOBLE GASES

- Group 18
- Unreactive
  - Among last (natural) elements to be discovered because of this
- Used in signs



NOBLE GASES



NOTES: THE PERIODIC TABLE Name: _____

THE PERIODIC TABLE

- Organized by increasing _____
- ___ rows (_____)
  - 1 row = 1 _____
  - More elements in higher-number periods because there are more spots for electrons in those levels
- Atomic number: Number of _____
- Always the same for any _____
- Tells you how many _____ there are in a _____ of the element
- Atomic Mass: Measured in _____(amu)
  - Proton = _____
  - Neutron = _____
  - Electron = _____
- _____
- _____

THE MODERN PERIODIC TABLE

- Properties change as you move _____
- Periodic Law: When elements are arranged in order of increasing atomic number, there is a _____ of their physical and chemical properties
  - A.k.a: _____
- Elements that have _____ end up in the same column in the periodic table
  - Called a "_____" or "_____"
- Periods 6 and 7 are partially put under the table, to make it more compact

NOTES: THE PERIODIC TABLE Name: _____

CLASSES OF ELEMENTS

- Broad categories of similar general properties
  - _____
- Across a period, the properties of elements become _____ and _____

METALS

- Good _____
- High _____
- _____ at room temperature (except Mercury)
- _____ – can be drawn into wires
- _____ – can be hammered thin

NONMETALS

- Pretty much _____
- Generally are poor _____
  - Carbon (as graphite) is the exception
- Nonmetal solids tend to be _____

METALLOIDS

- Similar to both _____
  - Changing conditions will change whether behaves like metal or nonmetal
- Silicon is a _____ (like nonmetal)
  - If a small amount of boron is mixed with the silicon, becomes a _____ (like metal)

NOTES: THE PERIODIC TABLE Name: _____

FAMILIES OF ELEMENTS

ALKALI METALS

- _____
- Highly reactive
- Very soft metals
- Float in water
- React with water

ALKALINE EARTH METALS

- _____
- Still pretty reactive
- Harder and denser than Alkali metals

HALOGENS

- _____
- All are highly reactive
- Fluorine, Chlorine – Caustic gases (burning/poisonous)
- Bromine – liquid
- Iodine – solid, prevents thyroid issues, used as antiseptic
- Astatine – Rarest element of all

NOBLE GASES

- _____
- Unreactive
    - Among last (natural) elements to be discovered because of this
- Used in signs

Name:_____ Pd____

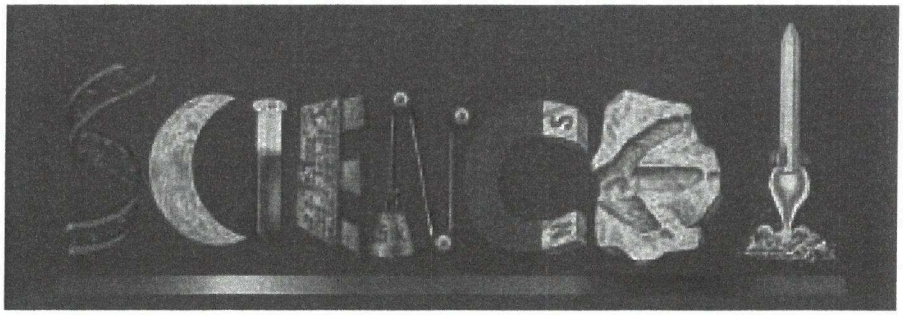
Periodic Table of the Elements

Color in the element boxes below using the corresponding category colors.

- ❑ Red : alkali metals
- ❑ Orange : alkaline earth metals
- ❑ Blue : transition metals
- ❑ Pink : metalloids
- ❑ Purple : halogens
- ❑ Light blue : noble gases
- ❑ Light green : lanthanides
- ❑ Yellow : actinides
- ❑ Green : other metals
- ❑ Grey : other nonmetals

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1 H Hydrogen 1.01																	2 He Helium 4.00
2	3 Li Lithium 6.94	4 Be Beryllium 9.01											5 B Boron 10.81	6 C Carbon 12.01	7 N Nitrogen 14.01	8 O Oxygen 16.00	9 F Fluorine 19.00	10 Ne Neon 20.18
3	11 Na Sodium 22.99	12 Mg Magnesium 24.31											13 Al Aluminum 26.98	14 Si Silicon 28.09	15 P Phosphorus 30.97	16 S Sulfur 32.07	17 Cl Chlorine 35.45	18 Ar Argon 39.95
4	19 K Potassium 39.10	20 Ca Calcium 40.08	21 Sc Scandium 44.96	22 Ti Titanium 47.87	23 V Vanadium 50.95	24 Cr Chromium 52.00	25 Mn Manganese 54.94	26 Fe Iron 55.85	27 Co Cobalt 58.93	28 Ni Nickel 58.69	29 Cu Copper 63.55	30 Zn Zinc 65.41	31 Ga Gallium 69.72	32 Ge Germanium 72.64	33 As Arsenic 74.92	34 Se Selenium 78.96	35 Br Bromine 79.9	36 Kr Krypton 83.80
5	37 Rb Rubidium 85.47	38 Sr Strontium 87.62	39 Y Yttrium 88.91	40 Zr Zirconium 91.22	41 Nb Niobium 92.91	42 Mo Molybdenum 95.94	43 Tc Technetium (98)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.91	46 Pd Palladium 106.42	47 Ag Silver 107.87	48 Cd Cadmium 112.41	49 In Indium 114.82	50 Sn Tin 118.71	51 Sb Antimony 121.76	52 Te Tellurium 127.6	53 I Iodine 126.9	54 Xe Xenon 131.29
6	55 Cs Cesium 132.91	56 Ba Barium 137.33	71 Lu Lutetium 174.97	72 Hf Hafnium 178.49	73 Ta Tantalum 180.95	74 W Tungsten 183.84	75 Re Rhenium 186.21	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.97	80 Hg Mercury 200.59	81 Tl Thallium 204.38	82 Pb Lead 207.2	83 Bi Bismuth 208.98	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)
7	87 Fr Francium (223)	88 Ra Radium (226)	103 Lr Lawrencium (262)	104 Rf Rutherfordium (261)	105 Db Dubnium (262)	106 Sg Seaborgium (266)	107 Bh Bohrium (264)	108 Hs Hassium (277)	109 Mt Meitnerium (268)	110 Ds Darmstadtium (271)	111 Rg Roentgenium (272)	112 Cn Copernicium (285)	113 Nh Nihonium (284)	114 Fl Flerovium (289)	115 Mc Moscovium (288)	116 Lv Livermorium (293)	117 Ts Tennessine (292)	118 Og Oganesson (294)

57 La Lanthanum 138.91	58 Ce Cerium 140.12	59 Pr Praseodymium 140.91	60 Nd Neodymium 144.27	61 Pm Promethium (145)	62 Sm Samarium 150.36	63 Eu Europium 151.96	64 Gd Gadolinium 157.25	65 Tb Terbium 158.93	66 Dy Dysprosium 162.5	67 Ho Holmium 164.93	68 Er Erbium 167.26	69 Tm Thulium 168.93	70 Yb Ytterbium 173.04
89 Ac Actinium (227)	90 Th Thorium 232.04	91 Pa Protactinium 231.04	92 U Uranium 238.03	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)



Create a personalized license plate using only the letters from the periodic table of the elements. The letters that are used must also <u>follow the rules of the periodic table</u>. For instance, if the letter is a capital on the table then it must also be a capital on your license plate, and the same is true for lower case letters.

<u>Example: (You may not use this example for your license plate.)</u>

90	53	7	19
Th	I	N	K
Thorium	Iodine	Nitrogen	Potassium

The plate will be graded on correctness, neatness and completeness. If you are missing the correct symbol, the atomic number or the element name you will lose points.

Check List for a good grade:

- Element symbol written correctly (capital and lower case rules followed)?
- Correct element name to match the symbol you are using?
- Correct atomic number? Will be a whole number between 1 & 118
- Your name and class period on the back?
- Does your license plate spell something? **Does it make sense?**
- Does it look like a license plate?
- <u>Follow the ABCDs of scientific illustrations:</u>
  A- Accurately Labeled
  B – Big
  C- Colorful
  D – Detailed

RICHMOND HILL K-8

8th Grade Reading/ELA

1st Semester Review
Learn at Home Lessons

Language Arts

Week 1: Learn at Home Activities

Day 1: Influences on Mood, Tone, and Meaning

1. For each statement, select the character it best describes.

Day 2: Reading

1. Read Rip Van Winkle and answer the following questions.

Day 3: Informational Texts: Rocks

1. Read the passage carefully, then answer the questions.

Day 4: You're the Judge!

1. Read each passage carefully before answering the questions.

Day 5: Reading Comprehension

1. Place each item in the correct order.

Week 2: Learn at Home Activities

Day 1: Point of View

1. Place a checkmark in the appropriate box based on the point of view in which the text was written.

Day 2: Summarizing Informational Text

1. Think about the characteristics of informational texts. Next determine if each text characteristic in the chart is or is not an informational text feature, and place a check mark in the appropriate box.

Day 3: Purpose and Types of Writing

1. Place each item in the correct order

Day 4: Organizational Strategies

1. To help their readers understand the text, authors use appropriate organizational strategies. For each text, place a checkmark in the appropriate box based on the organizational strategy MOST LIKELY used.

Day 5: Writing

1. Vivid means to create or produce clear images in the mind. Writing Vividly – Choose the sentence that is written more vividly than the other. For exercise 2 rewrite each of the following sentences in a more vivid manner.
2. Read "A Dire Shortage of Water".
3. Write a short (1-page) firsthand account using "A Dire Shortage of Water" as a background resource for your story details.
4. You should write from the perspective of a person who is in the midst of a drought in the southwestern United States. Write in a personal narrative style and include the details of day-to-day life during a drought. Include descriptive, vivid details and present events in a logical order.

Influences on Mood, Tone, and Meaning

Name: _____ **Class:** _____

Teacher: _____ **Date:** _____

Directions: For each statement, select the character it best describes.

Acceptance

Barbara Winkler

Stephanie, a teenage girl, sits on the front steps of a house, holding an envelope. The stage is organized in a manner that allows the audience to see inside. In the living room, a last-minute surprise party is organized. Half a dozen people scurry around the room, blowing up balloons and stringing streamers. Several party guests assemble a large banner that exclaims, "Congratulations, Anthony!"

Anthony, Stephanie's brother, walks toward the front door.

STEPHANIE: (Stands up, flashing an exuberant smile) There you are!

ANTHONY: (Listlessly) Here I am. (Collapses on the steps, looking dejected)

STEPHANIE: (Sits again) What's wrong?

ANTHONY: (Despondently) Everything.

STEPHANIE: (In a boisterous tone) I have something that might cheer you up!

ANTHONY: (Looks away and addresses the audience in an aside) What could possibly cheer me up? At this point, I'm a collegiate failure. After applying to seven universities, I've been rejected by six of them. I just can't figure out where I went wrong. Yes, the college admissions process is extremely complicated, but I thought my credentials spoke for themselves: straight-A student, volunteers for local charitable organizations, participates in extracurricular activities, involved in the student government, successfully juggles school with part-time employment.

(With an exasperated sigh) It's so frustrating! I was so optimistic when I mailed out my applications, but now I can't help feeling a little cynical about the entire process. Each successive rejection only accentuates my feelings of inadequacy. Most of my friends already know which university they'll attend in the fall, and I'm still trying to reconcile the fact that I might not be going to college next semester. I feel so disconnected from them right now—while they're mapping out their futures, reviewing the curriculum for freshman year, and filling out roommate questionnaires, I'm still stuck in limbo. Everyone's been sympathetic and supportive, but their reassurances offer little comfort.

ANTHONY: (Looks back at Stephanie) What did you want to tell me?

STEPHANIE: You don't want to hazard a guess?

ANTHONY: (Sarcastically) I got into college. Stage directions include exuberant and vigorously, which help the reader understand meaning. Stage directions include listlessly and despondently, which help the reader understand meaning. The majority of this character's dialogue creates a somber mood. The majority of this character's dialogue creates an optimistic mood. This character's dialogue has a negative tone. This character's dialogue has a positive tone.

STEPHANIE: (Nodding vigorously, she hands the letter to Anthony.)

ANTHONY: (Disbelieving) I got into college? (Reads the letter, looking overwhelmed)

STEPHANIE: (Stands up and helps Anthony to his feet) Wipe that dazed look off your face and come inside! Everyone wants to congratulate you!

	Description	Anthony	Stephanie
1.	Stage directions include *exuberant* and *vigorously*, which help the reader understand meaning.		
2.	Stage directions include *listlessly* and *despondently*, which help the reader understand meaning.		
3.	The majority of this character's dialogue creates a somber mood.		
4.	The majority of this character's dialogue creates an optimistic mood.		
5.	This character's dialogue has a negative tone.		
6.	This character's dialogue has a positive tone.		

Rip van Winkle

Name: **Class:**
Teacher: **Date:**

Rip Van Winkle lived in a small village at the base of the Catskill Mountains just before the American Revolution. He was always minding someone else's business. His wife thought that he should work at home and found many things for him to do, but he would always think of a neighbor whom he had to help. Then his wife would scold him and chase him with a broom.

One day when his wife told Rip that he must cut wood for the family stove, he took his gun and went for a walk in the mountains. He soon got tired, so he lay down to rest.

Suddenly, he heard the sound of thunder. A little man with a long white beard appeared. He was carrying a keg of wine on his back. He indicated by a sign that Rip should help him carry it, so Rip followed him far into the mountains. There he saw more little men. They were playing ninepins, and a sound like thunder was made by their wooden balls. Rip was frightened and thought he ought to run away, but the first man signaled for him to drink from the keg. It was filled with very good wine, and Rip soon got sleepy.

When he awoke, the sun was shining. Rip thought that he must have slept all night. He thought that he had better go home. He searched for his gun, but found only an old rusty one.

He started home, and when he got near the town some children began following him; others laughed at him, and still others hit him with stones. He didn't know the people, and they wore strange clothing. There were many new buildings, and where his house should have been there was nothing but an old shack.

Rip touched his chin and discovered that it was covered by a long, white beard. "Can't someone tell me what has happened?" he asked. "What has become of my home and my wife?"

Finally, a very old woman stepped out of the crowd. "Why Rip Van Winkle," she said, accusingly. "I'd know you anywhere by your lazy walk. Where've you been for the last twenty years?" And where's that wood you were going to cut?"

1. When did Rip Van Winkle ***probably*** live?
   A. 1650 B. 1690 C. 1745 D. 1770 E. 1800

2. What was the sound of thunder that Rip Van Winkle heard?
   A. an approaching storm
   B. an early type of bowling
   C. the wine kegs banging together
   D. cannon shots from the war
   E. someone hunting deer in the mountains

3. What made Rip Van Winkle think that he had slept for a long time?
   A. his gun was old and rusty
   B. he had a long beard
   C. people were wearing strange clothes
   D. all of the above
   E. none of the above

4. Why wouldn't anyone talk to Rip Van Winkle after his "adventure"?
   A. He looked strange and out of place.
   B. He was too drunk and they couldn't understand him.
   C. He was carrying a gun.
   D. He was stalking his wife.
   E. He spoke a foreign language.

5. How would you characterize Rip Van Winkle?
   A. a hard working, hen-pecked husband
   B. a lazy, good-for-nothing bum
   C. a successful business man
   D. a devoted father and husband
   E. an eager-to-get-ahead person

6. How does Rip's wife feel about him at the end of the story?
   A. She is very excited about seeing him again.
   B. Her disposition towards him has mellowed.
   C. There is no change in her low opinion of him.
   D. She feels sorry for him.
   E. She's evasive.

7. How did Rip ***probably*** spend his days?
   A. helping his wife with the chores at home
   B. picking fights with his neighbors
   C. fighting off attacks by the children of the village
   D. devotedly hunting for food for his family
   E. wandering carefree through the mountains

8. What is the purpose of this story?
   A. to teach a moral lesson
   B. to entertain the readers
   C. to show how worthless men are
   D. to make fun of people in small villages
   E. to discourage people from drinking

Informational Text: Rocks

Name: **Class:**
Teacher: **Date:**

Directions: Read the passage carefully, then answer the questions.

ROCKS

The core of the earth is composed of a 3D-mile thick bed of rock. Whether on land or in the sea, the substratum is solid rock. Rocks surround us both above the surface and below.

Thousands of years ago rocks were used to form primitive hunting implements, to club animals, to pound animal skins for clothing, and to form a barrier between the campfires and the people who sat warming themselves or cooking. Today, rocks also play a major role in construction, garden ornaments, and jewelry.

Inside some rocks are veins of colored materials called minerals. The latter have unique characteristics such as color, luster, hardness, and value. Some of the most valuable minerals today are diamonds, gold, and silver.

Diamonds, when not perfect enough for jewelry, are used in industry for drill bits and in glass-cutting tools. Most diamonds today are found in mines in South Africa.

The biggest gold mines are also located in South Africa. Workers are under heavy guard and are searched before they leave work sites, so that they do not steal any of this precious mineral. Different qualities and weights of gold, measured in karats, are used for jewelry, dental fillings, and even in very thinly pounded foil used in wrapping expensive chocolates. When gold nuggets were found in a stream in California in 1849, people rushed there from all over the world.

Mexico boasts the greatest production of silver in the world. When silver is found, it is much darker than the color we usually see. The latter is achieved by considerable polishing and buffing. Silver is used many ways: in jewelry, to make eating utensils, as decorative finish, and in fine crystal and vases.

Not all rocks are ugly gray shapeless masses. Many contain valuable minerals, without which the world as we know it would not exist today.

1. The word *barrier* is closest in meaning to
   (A) connection
   (B) separation
   (C) smoke ring
   (D) defense mechanism

2. The word *stream* is closest in meaning to
   (A) mountain
   (B) lake bed
   (C) mine
   (D) small river

3. The word *boasts* is closest in meaning to
   (A) speaks disparagingly of
   (B) speaks proudly of
   (C) deplores
   (D) seeks

4. All of the following were mentioned as modern uses of rocks EXCEPT
   (A) hunting implements
   (B) garden ornaments
   (C) jewelry
   (D) construction

5. The most productive gold and diamond mines are located in
   (A) Mexico
   (B) China
   (C) California
   (D) South Africa

6. All of the following were mentioned as characteristics of these minerals EXCEPT
   (A) facets
   (B) hardness
   (C) weight
   (D) luster

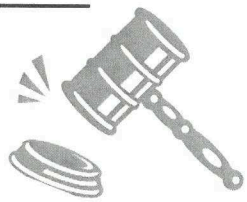
7. The quality and weight of diamonds are measured in
   (A) ounces
   (B) luster
   (C) facets
   (D) karats

8. What is the writer's main point?
   (A) Rocks serve many purposes and come in different sizes and shapes.
   (B) Diamonds, gold, and silver are the only rocks worth mentioning.
   (C) Considerable polishing and buffing will make any rock beautiful and valuable.
   (D) The most valuable rocks are useful only as jewelry.

9. The innermost part of the earth is comprised of
   (A) gold
   (B) water
   (C) diamonds
   (D) rocks

Name _____ Date _____

You're the Judge!



Read each passage carefully before answering the questions.

Passage I

Jason was riding his bike home from baseball practice. As usual, he made a stop at the convenience store to buy a soda. By chance, his best friend Tony walked in at the same time. He invited Jason to come over and play a new video game. Jason told Tony that he couldn't go today. His mother was expecting him home by 6 o'clock, and it was already 5. With his thirst quenched, Jason pedaled home.

1. What inferences can you make about Jason based on his decision not to go to Tony's house?

2. Give two possible outcomes if Jason had decided to go to Tony's house.

Passage II

It was 6 p.m. on Friday evening. A couple of Jenn's friends stopped by her house to invite her to walk to Supreme Pizza Kitchen several blocks away. Since Jenn's parents were out on a quick errand, she decided that it would be okay to join her friends. Off they went!

1. What inferences can you make about Jenn from her decision to go with her friends?

2. Explain at least two possible outcomes for the evening.

Reading Comprehension

Name: **Class:**

Teacher: **Date:**

Directions: Place each item in the correct order.

ITEMBANK:

Analyze	Author's Purpose	Cause and Effect	Compare and Contrast	Connect	Inference	Main idea	Point of View

This is the central and most important idea of a reading passage. ____

This is the perspective from which a story is told. ____

This is the reason for creating written work. ____

This is the relationship between two or more events in which one event brings about another. ____

This is reading between the lines. It is taking something that you read and putting it together with something that you already know to make sense of what you read. ____

This is a method of relating two or more objects in a piece of work. ____

This is to separate a whole into its parts. ____

To find as many relationships as possible within or between texts ____

Point of View

Name: _____ **Class:** _____

Teacher: _____ **Date:** _____

Directions: Place a checkmark in the appropriate box based on the point of view in which the text was written.

Text	First Person	Third Person Objective	Third Person Limited	Third Person Omniscient
Drake walked into the kitchen and ate two sandwiches. He told his mother that he was feeling much better.				
Drake walked into the kitchen. He was feeling lightheaded and dizzy. Then he ate two sandwiches and he felt much better.				
Happy that her team had won, Jan ran up to Scott and hugged him. Surprised but thrilled by the show of affection, Scott felt like his search for a date to the school dance was over.				
I could hear only part of the phone conversation, but Tara's voice was loud and sounded angry. I bet she was talking to Shannon.				
I hurried to the checkout line so I wouldn't be late for the game.				
It had been a long day. Drake walked into the kitchen. He was feeling dizzy so he ate two sandwiches and felt much better. His mother thought she might faint. Then she ate and felt better, too.				
Rebecca knew her mother was right. She should have written down the combination. The lock would not open. She heard the bell. "Great!" she thought.				

Summarizing Informational Text

Name: _____ **Class:** _____

Teacher: _____ **Date:** _____

Directions: Think about the characteristics of informational texts. Next, determine if each text characteristic in the chart **is** or **is not** an informational text feature, and place a check mark in the appropriate box.

Text	Feature	Not a Feature
avoids interpretation or judgment		
connects key ideas		
includes an introductory statement		
includes supporting details		
includes the main ideas of original texts		
provides interpretation or judgment		
refers to at least one outside source for supporting details		
uses exact words and phrasing as the original text		
uses objective voice		
uses subjective voice		

Purpose and Types of Writing

Name: **Class:**

Teacher: **Date:**

Directions: Place each item in the correct order.

ITEMBANK:

Argumentation	Audience	Draft	Essay	Expository Text	Informational text	Persuasive Text	Prewriting	Purpose
Technical writing	descriptive text							

This is the kind of writing that tries to persuade readers to accept an author's opinions. ____

This attempts to convince a reader to adopt a particular opinion or course of action. ____

This is a short, nonfiction work about a particular subject. ____

This is whoever will be reading or listening to a piece of work/speech. ____

This the first stage in the writing process, used to focus ideas and find good topics. ____

This is an author's intention, reason, or drive for writing the piece. ____

This is writing that communicates specific information about a particular subject, craft, or occupation. ____

This is a type of real-world writing that presents information that is necessary or valuable to the reader. ____

This is a mode of writing whose purpose is to convey information or to explain and establish the validity of an idea in a logical, clear, and concrete manner. ____

This is a preliminary version of a piece of writing. ____

This type of text creates a clear picture through the use of vivid word choices. The purpose is to help a reader see, experience, or understand the selection by the use of sensory details. This type of text is seldom a separate type of writing; it is most often part of narrative, expository, or persuasive text. ____

Organizational Strategies

Name: _____ **Class:** _____

Teacher: _____ **Date:** _____

Directions: To help their readers understand the text, authors use appropriate organizational strategies. For each text, place a checkmark in the appropriate box based on the organizational strategy MOST LIKELY used.

Text	Compare and Contrast	Cause and Effect	Problem and Solution	Sequential Order
a book about C. S. Lewis and J. R. R. Tolkien				
a book about what people can do to stop various species from becoming extinct				
a handbook on writing and grammar suggesting the steps one should take to write and revise a first draft				
a chapter of a history textbook about the beginning of the war in Vietnam				
a magazine article describing creationism and the theory of evolution				
a manual describing how to set up your new computer				
a pamphlet describing the various health problems associated with cigarette smoking				
a recipe explaining how to prepare apple strudel				
an article about the relationship between bad weather and depression in human beings				
an editorial calling for an end to bullying in schools and suggesting how this can be accomplished				
an essay about civil rights leaders Martin Luther King, Jr., and Malcolm X				
an essay about how to prevent teenagers from joining gangs				

Writing Vividly: Handout 3

Name: _____ **Class:** _____

Teacher: _____ **Date:** _____

EXERCISE 1: Choose the sentence that is written more vividly than the other.

_____1. A. Ted asked the policeman not to give him a ticket.
B. Ted begged the policeman not to give him a ticket.

_____2. A. The teacher looked at the student in anger.
B. The teacher stared coldly at the student.

_____3. A. She slammed her books on the table and rushed up the stairs.
B. She placed her books on the table and went up the stairs.

_____4. A. The waves sent by Poseidon covered Odysseus.
B. The waves summoned by Poseidon drowned Odysseus.

_____5. A. Joey cooked the hamburgers in the backyard.
B. Joey grilled the hamburgers in the backyard.

_____6. A. The thief took her purse from her shoulder.
B. The thief snatched her purse from her shoulder.

_____7. A. The dog destroyed her petunias.
B. The petunias were ravaged by the dog's persistent digging.

_____8. A. "Put the gun down!" yelled the FBI agent.
B. "Put the gun down!" said the FBI agent.

_____9. A. The test was a piece of cake!
B. The test was easier than any other test they had taken.

_____10. A. Meg cleaned the dirty kitchen floor.
B. Meg scrubbed the filthy kitchen floor.

EXERCISE 2: Rewrite each of the following sentences in a more vivid manner.

1. The low-riding Chevy played its radio loudly.

_____

2. The car ran into the brick wall.

_____

3. The angry student removed the pages from his literature book.

_____

4. The little baby made a lot of noise in the church service.

_____

5. The kitchen knife cut the man's finger.

_____

Read the scientific article. Then answer the questions that follow.

from "A Dire Shortage of Water"

by Emily Sohn, Science News for Kids

Causes

1 Scientists are just beginning to understand the conditions that lead to droughts. They're finding that small changes in the flow of wind and water can have a huge effect on climate around the globe.

2 Strangely enough, much of the story depends on the temperature of water in the oceans.

3 Normally, winds blow west across the tropical Pacific Ocean, away from Central and South America. As wind-driven warm water moves over the ocean, it piles up in Indonesia and elsewhere in the western Pacific. Warm air rises offshore, causing rain to fall. Meanwhile, cold water comes up from the bottom off the coast of South America. This flow allows a richness of life to flourish near the coast, and it helps maintain predictable weather patterns from season to season.

4 Every 5 to 10 years or so, though, the wind dies down. As a result, the surface of the Pacific Ocean gets warmer. Rainfall then tends to fall further to the east. Such a change in weather causes, among other things, floods in Peru and droughts in Australia and Indonesia. This new weather pattern is known as El Niño.

5 An opposite cascade of events happens during the weather pattern called La Niña, when Pacific surface temperatures cool down. Both El Niño and La Niña, when they happen, usually last for 2 to 4 years.

6 The current drought in the West could last much longer than that. In fact, historical records show that droughts typically go on for 10 to 50 years.

7 And it's not just El Niño and La Niña at work. In the last few years, scientists from the U.S. Geological Survey (USGS) have begun to link precipitation on the Colorado Plateau to temperature shifts both in the Pacific Ocean and in the Atlantic Ocean.

Atlantic Effects

8 A recent statistical study by USGS researchers found that less moisture falls on the United States when surface temperatures in the North Atlantic are warmer than normal. These conditions prevailed during a number of droughts over the past century.

9 The study also found a correlation between warm water in the central North Pacific and drought in the southwestern and northern plains of the United States. When water is warm in both the North Atlantic and the North Pacific at the same time, conditions can get mighty dry in the American West.

10 This explains at least a part of what's going on right now in the Colorado River Basin, geologist John Dohrenwend says.

11 Records show that the basin's annual flow volume has been dropping for more than a century. But the drought has grown much worse since the year 2000. Compared to measurements taken in 1922, water flow has dropped to one-third of its original rate.

People Problems

12 Oceans can't take all of the blame for the impact of today's drought, Dohrenwend says.

13 Although ocean temperatures may be an important factor in starting a drought, people are making the problem of water shortages much worse. Dohrenwend notes that cities are growing faster in the southwest than anywhere else in the country. And people keep pouring in.

14 "Many of these people are retired persons who lived in the northeast or northwest and want to get out of the cold," Dohrenwend says. It's hard for them to adjust to using less water than they're used to, he adds, and they don't want to let go of their golf courses, green lawns, or long showers.

15 "Over time, more and more water has to be allocated to people moving in and less goes to everything else," Dohrenwend says.

16 Ironically, as the drought continues, the cycle feeds on itself. Ranchers go out of business because they don't have enough water to grow alfalfa for their cattle. Then developers arrive and build more homes. As more people move in, the demand for water continues to grow—even as the supply of water rapidly dwindles.

How Long?

17 It's impossible to know how long this drought will last, and some scientists are beginning to fear the worst.

---

1 How does the content of the passage reflect the author's point of view?

A It shows that the author approves of ongoing scientific research.

B It provides facts and statistics showing that the problem of water shortages is growing.

C It shows that the author feels hopeless about the fate of our planet.

D It shows that the author dislikes the fact that cities are growing faster in the southwest than elsewhere.

RICHMOND HILL K-8

8th Grade Georgia Studies

1st Semester Review
Learn at Home Lessons

Georgia Studies

If you would like to access the online textbook please email coxni@boe.richmond.k12.ga.us

Week 1: Learn at Home Activities

Day 1: Georgia's Geography

1. Where in the World is Georgia? – Choose the statements that CORRECTLY describe Georgia's location.
2. Georgia's 5 Regions – Identify the statements that CORRECTLY identify a fact about Georgia's five regions.
3. Georgia's Physical Features – Match each item to its corresponding space below.

Day 2: Paleo, Archaic, Woodland, or Mississippian?

1. Match each item to its corresponding category.

Day 3: Starting Georgia

1. Why Exploration? – Identify the statements that CORRECTLY describe a reason for European exploration and settlement of North America in the 1500s and 1600s.
2. The Founding of Georgia – Each of the people or terms played a role in the settling of the colony of Georgia in the early 1730s. See if you can match each term to the correct definition or description.

Day 4: Trustee Georgia

1. Trustee period – Choose the items that correctly describe Georgia's "Trustee Period."
2. Leaders of the Trustee Era – Identify the individual or group based on each one's role in the trustee period.

Day 5: Royal Georgia

1. Compare/Contrast Royal and Trustee Era – Use your knowledge of the trustee and royal colony to compare and contrast key aspects of colonial government. (You can use the internet if needed, but be sure you get correct information)
2. Vocabulary Matching – Complete the matching questions below to review important terms, events, and people.

Week 2: Learn at Home Activities

Day 1: Revolution

1. Toward a Revolution - Match the following vocabulary terms with their correct definitions.
2. A Few Causes of the Revolutionary War – Choose the items that identify a cause of the American Revolution.

Day 2: The American Revolution

1. Match the correct term with the description given.
2. Each of the people or terms relate to the American Revolution in Georgia. See if you can match each one to the correct definition or description.

Day 3: Causes of the American Revolution

1. Listed in the Item Bank are a number of key events from this field. Write the events in chronological order by placing each number in its corresponding open rectangle. If there is overlapping, simply trace the dashed line down to the timeline for clarification.

Day 4: Founding the University of Georgia

1. Read the passage about the founding of the University of Georgia. Then, match the correct term to complete the passage.

Day 5: Vocabulary

1. Define the following terms

Where in the World is Georgia?

Name: **Class:**

Teacher: **Date:**

Directions:

Choose the statements that CORRECTLY describe Georgia's location.

- Georgia is located in the Southern Hemisphere.
- Georgia is located in North America.
- Georgia is located in the Southwestern region of the U.S.
- Georgia is bordered by Alabama to its west.
- Georgia is located in the Western Hemisphere.

Georgia's Five Regions

Name: **Class:**

Teacher: **Date:**

Directions:

Identify the statements that CORRECTLY identify a fact about Georgia's five regions.

- The Blue Ridge region contains the highest point in the state.
- The Valley and Ridge region is the smallest in the state.
- The Coastal Plain region contains the largest cities in the region.
- The Fall Line separates the Blue Ridge and Coastal Plain regions.
- Rocky soil limits large agriculture in the Appalachian Plateau region.

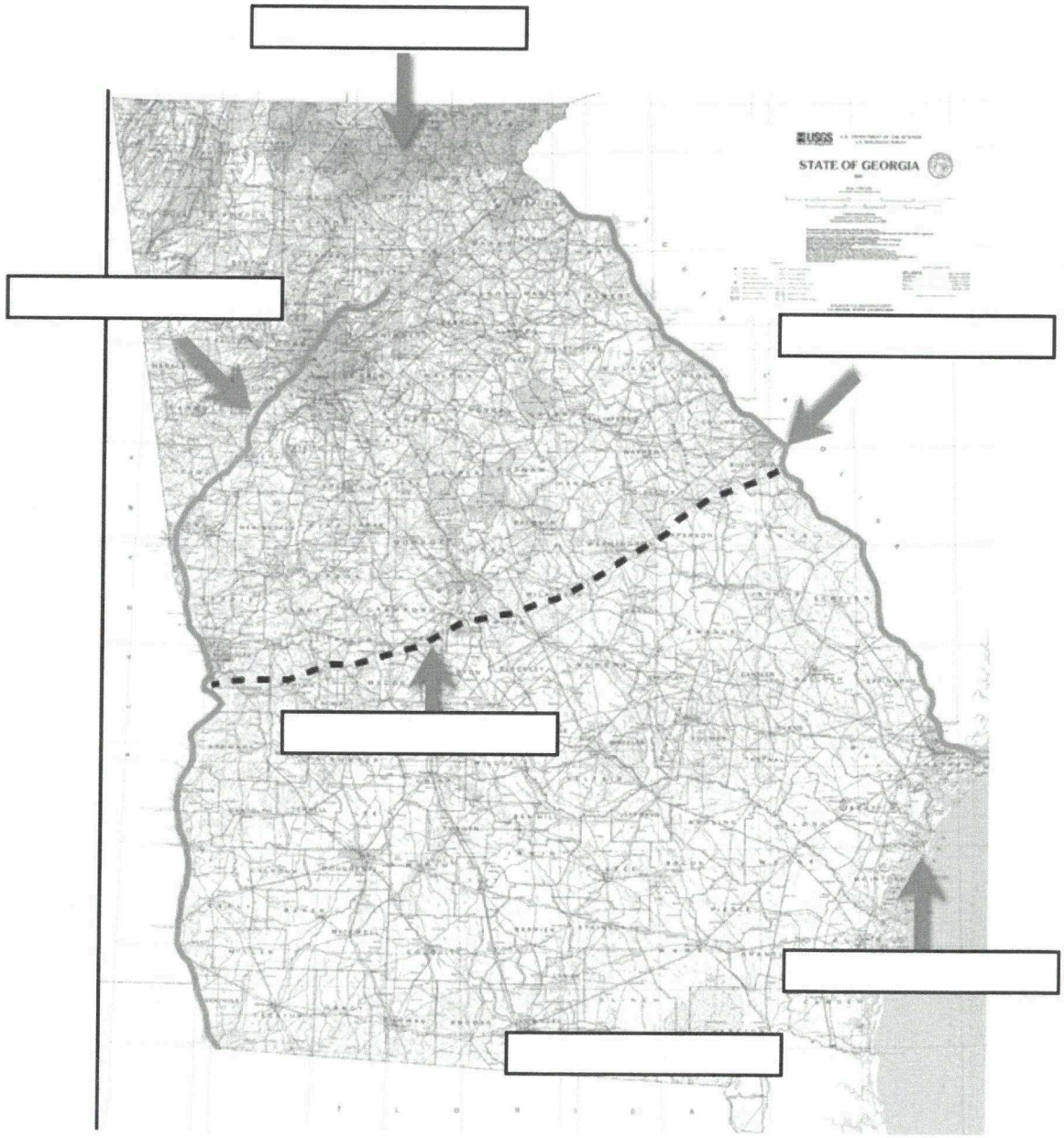
Georgia's Physical Features

Name:
Teacher:

Class:
Date:

Directions: Match each item to its corresponding space below.

Fall Line	Okefenokee Swamp	Appalachian Mountains	Chattahoochee River
	Savannah River	Barrier Islands	



Paleo, Archaic, Woodland, or Mississippian?

Name: **Class:**

Teacher: **Date:**

Directions: Match each item to its corresponding category.

ITEMBANK:

- Are thought to have been the first group to organize family clans into tribes
- Are thought to have started the practice of horticulture (the skill of cultivating plants and trees)
- Earliest Native American culture, only a few of their sites have been found in Georgia
- Had advanced systems of agriculture; were able to grow corn, beans, squash, and pumpkins
- Nomadic hunter-gatherers who wandered from place to place following large herds of animals
- Often settled in camps near rivers and islands; they depended heavily on shellfish for their food source
- Their culture lasted from around 1000 BC until about 1000 AD
- Were the Indians that Hernando de Soto's expedition encountered in the 1540s
- Were the first culture to use burial mounds and demonstrate belief in a supreme being

Paleo	Archaic	Woodland	Mississippian

Why Exploration?

Name: **Class:**

Teacher: **Date:**

Directions:

Identify the statements that CORRECTLY describe a reason for European exploration and settlement of North America in the 1500s and 1600s.

- Spain founded the first permanent European colony in North America.
- Some colonies were founded in an attempt to find gold in North America.
- A major reason Britain founded colonies in North America was to spread the power of the Catholic Church.
- Conquistadores helped to spread French power in the "New World."
- European colonization of North America was inspired by economic and political competition.

The Founding of Georgia

Name: **Class:**

Teacher: **Date:**

Directions: Each of these people or terms played a role in the settling of the colony of Georgia in the early 1730s. See if you can match each term to the correct definition or description.

ITEMBANK:

Charity	Charter of 1732	Defense	Economics	James Oglethorpe	King George II	Mary Musgrove	Savannah
Tomochichi	Yamacraw Bluff						

He was an English general and founder of the colony of Georgia. _____

He was chief of the Yamacraw Indians in the early-1700s and served as the important mediator between the English settlers of Georgia and the Native American population there. _____

The daughter of a Creek Indian woman and an English trader, she became a cultural mediator between Native American and European settlers in the Georgia colonies. _____

The site on the Savannah River where the first settlers arrived on *The Ann* in 1732. _____

This city located in Georgia was the first colonial and state capital of Georgia. It has a large historic district. _____

This document was issued by King George II of England, creating the colony of Georgia. _____

According to the Charter of 1732, a primary purpose of the Georgia colony would be to help debtors and "the worthy poor." _____

According to the Charter of 1732, a primary purpose of the Georgia colony would be to provide income, natural resources, and new markets for the British government. _____

According to the Charter of 1732, a primary purpose of the Georgia colony would be to serve as a "buffer" between the other twelve English colonies and the Spanish colony in Florida. _____

He was the British monarch that granted the charter for Oglethorpe's colony. Oglethorpe named the new colony in his honor. _____

Georgia's Trustee Period

Name: **Class:**

Teacher: **Date:**

Directions:

Choose the items that correctly describe Georgia's "Trustee Period."

- [ ] The Trustee Period lasted for over 50 years.
- [ ] "The Trustee Period" is called that because the King "trusted" Georgians to rule themselves.
- [ ] During the Trustee Period, at least 70 men served as trustees.
- [ ] During the Trustee Period, the Salzburgers came to Georgia from Austria.
- [ ] During the Trustee Period, people from Scotland settled in Georgia.
- [ ] The Trustee Period saw an alliance between British and Spanish settlers.
- [ ] The Battle of Bloody Marsh was won by the British and General James Oglethorpe.
- [ ] The Trustee Period ended once Parliament granted Georgia the ability to elect a colonial assembly.

Name_____ **Date**_____

Leaders of the Trustee Era

Directions: Identify the individual or group based on each one's role in the trustee period.

_____ 1. widely recognized as the man responsible for the establishment of the Georgia colony

_____ 2. the group of men who worked together to establish the colony

_____ 3. the colonists who gradually became dissatisfied with life in Georgia and with some of the trustees' rules

_____ 4. the group of settlers recruited by Oglethorpe who settled the town of Darien

_____ 5. settlers who established the towns of Ebenezer and New Ebenezer and were opponents of slavery

_____ 6. a group of settlers opposed by some trustees, but welcomed by Oglethorpe, who brought a much needed doctor to the colony

_____ 7. a Yamacraw chief who welcomed the colonists and became a lifelong friend of Oglethorpe

_____ 8. served as an interpreter for Oglethorpe and the Native Americans

_____ 9. one of the groups that Oglethorpe and the trustees hoped to settle in the new colony

_____ 10. person who granted the charter to the trustees and for whom the colony is named

A. trustees

B. Salzburgers

C. Jews

D. James Oglethorpe

E. Mary Musgrove

F. King George II

G. debtors

H. Malcontents

I. Tomochichi

J. Highland Scots

Name_____ Date_____

Compare and Contrast Royal and Trustee Eras

Directions: Use your knowledge of the trustee and royal colony eras to compare and contrast key aspects of colonial government.

	Trustee Period	Royal Colony Period
Who Ran the Colony and under What Authority		
Land Ownership Policies		
Slavery Policy		

Name_____ Date_____

Toward a Revolution

Directions: Match the following vocabulary terms with their correct definitions.

_____ 1. The first of many new taxes that angered colonists

_____ 2. Placed a tax on all printed items and documents

_____ 3. Taxed items imported into the colonies such as glass, paint, and tea

_____ 4. A move by Britain that gave one company a monopoly on a favorite beverage

_____ 5. A refusal to buy goods from a specific business or company, usually associated with a type of protest

_____ 6. The boundary established after the French and Indian War

_____ 7. A British action that forced colonists to host soldiers in their homes and that closed the port of Boston

_____ 8. A meeting that resulted in the establishment of a boycott of British goods

_____ 9. A meeting that resulted in the Declaration of Independence

_____ 10. A motto the colonists used to describe the new taxes

_____ 11. A term the British used to describe their right to tax the colonists

A. boycott

B. First Continental Congress

C. virtual representation

D. Tea Act

E. Second Continental Congress

F. Sugar Act

G. Proclamation Line of 1763

H. Stamp Act

I. Intolerable Acts

J. taxation without representation

K. Townshend Revenue Acts

A Few Causes of the Revolutionary War

Name: **Class:**

Teacher: **Date:**

Directions:

Choose the items that identify a cause of the American Revolution.

- Even though colonists voted against having their taxes raised, Parliament raised them anyway.
- Colonists were not allowed west of the Appalachian Mountains.
- Parliament increased taxes on the colonists following the French and Indian War.
- The Stamp Act was aimed mainly at southern states.
- Colonial newspapers, licenses, and other documents were taxed by Parliament.

The American Revolution in Georgia

Name: **Class:**
Teacher: **Date:**
Directions: Match the correct term with the description given.

Each of these people or terms relate to the American Revolution in Georgia. See if you can match each one to the correct definition or description.

ITEMBANK:

American Revolution | Austin Dabney | Battle of Kettle Creek | Button Gwinnett | Elijah Clarke | George Walton | Loyalist | Lyman Hall | Nancy Hart | Patriots | Siege of Savannah | Tories

This is the general name for the colonists in British North America who supported the movement for independence in the 1760s and 1770s. _____

This is a group of American colonists, who leading up to and during the American Revolution, were supporters of the British crown. _____

A term used to describe anyone that remained loyal to the British Crown after the Declaration of Independence in 1776. _____

This is one of the most important American Revolutionary battles in Georgia, fought February 14, 1779 in Wilkes County near Washington, Georgia. _____

In this, a combined force of Patriots and French soldiers attempted to recapture the city from British control; over 1000 men on the American side were killed and the British lost only 40. _____

In becoming one of Georgia's biggest Revolutionary War heros, he led a successful siege on the city of Augusta in 1781 and freed it from British control. _____

He was an African American slave who fought against the British in the American Revolution and was later emancipated and given land for his bravery during the war. _____

During the Revolutionary War this Georgia woman actively spied against the British, capturing 6 Tory soldier herself as they forced her to feed them. _____

He is one of three Georgians to sign the Declaration of Independence, wrote the original draft of Georgia's first constitution, and was elevated to the top position of President (Governor) of Georgia. _____

He is one three Georgians to sign the Declaration of Independence, the 12th Governor of Georgia, and has a county in Georgia and two elementary schools named after him. _____

He is one three Georgians to sign the Declaration of Independence,he killed Button Gwinnett in a duel, and later served as governor of the state from 1789-90. _____

This was the first successful colonial independence movement against a European power, 1775-1783. _____

USA TEST PREP
PREPARING STUDENTS FOR WHAT'S NEXT

Causes of the American Revolution: Timeline

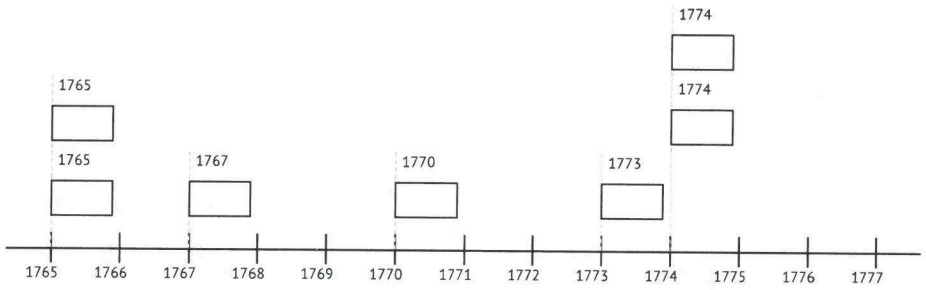
Student Name: _____ Date: _____

Teacher Name: Nishayla Cox Score: _____

Listed in the Item Bank are a number of key events from this field. Write the events in chronological order by placing each number in its corresponding open rectangle. If there is overlapping, simply trace the dashed line down to the timeline for clarification.

Items:

1	Boston Massacre
2	Boston Tea Party
3	First Continental Congress convenes
4	Intolerable Acts passed
5	Quartering Act passed
6	Sons of Liberty formed
7	Townshend Acts passed



USA TEST PREP
PREPARING STUDENTS FOR WHAT'S NEXT

Founding the University of Georgia

Student Name: _____ Date: _____

Teacher Name: Nishayla Cox Score: _____

Items:

1 10,000
2 1776
3 1784
4 1785
5 1786
6 1801
7 35,000
8 Abraham Baldwin
9 Josiah Meigs
10 Oconee River
11 Yale
12 educated
13 rich

In [ ], not long after the end of the Revolutionary War, the Georgia General Assembly authorized the use of 40,000 acres to be used for a school of higher learning. Then, in January of [ ], the General Assembly created the University of Georgia. In February of [ ], the first President of the University of Georgia was chosen: [ ]. He was Connecticut-born and [ ]-educated, and immediately upon taking the job the wrote the charter that created the university. He believed that an [ ] population was crucial for the state, and he wanted the school to be one that would offer higher education to ALL Georgians, not just the wealthy elite.

Even though the University of Georgia was authorized in 1786, it really did not physically exist until [ ]. That was the year that 633 acres close to the [ ] was donated to the state to be used for the actual site of the school. In September of that year, [ ], also a graduate of Yale, was appointed President and taught the first university class. In 1804 the University graduated its first class, and the following year the first permanent building was erected on campus. Today, there are nearly 400 buildings on the UGA campus. It employs almost [ ] people and has roughly [ ] students.

USA TEST PREP
PREPARING STUDENTS FOR WHAT'S NEXT

History Vocabulary Worksheet

Student Name: _____ Date: _____

Teacher Name: Nishayla Cox Score: _____

Define these terms:

Headright System

Henry Ellis

Indigo

James Wright

John Reynolds

Plantation Economy

Royal Colony

Slavery

Tobacco

USA TEST PREP
PREPARING STUDENTS FOR WHAT'S NEXT

History Vocabulary Worksheet

Student Name: _____ Date: _____

Teacher Name: Nishayla Cox Score: _____

Define these terms:

Agrarian

Archaic

Etowah Indian Mounds

Hunter Gatherers

Mississippian

Nomadic

Paleo Indian

Paleolithic

USA TEST PREP
PREPARING STUDENTS FOR WHAT'S NEXT

History Vocabulary Worksheet

Student Name: _____ Date: _____

Teacher Name: Nishayla Cox Score: _____

Define these terms:

American Revolution

Appalachian Mountains

French And Indian War

George III

Proclamation Of 1763

Seven Years War

Sons Of Liberty

Stamp Act

Taxation Without Representation