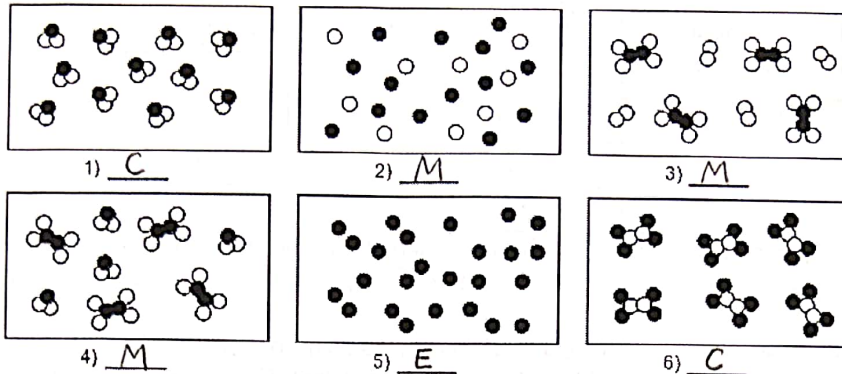


# Science EOG Review

Name: Smith Answer Key

Directions: Label the pictures below with the following word: Element, Mixture, and Compound.



Directions: Answer the questions below using your periodic table.

- What family/group is element #20 in? Alkaline Earth Metals
- How many protons does Sulfur have? 16 protons
- How many electrons does Neon have? 10 electrons
- How many neutrons does element #12 have? 12 neutrons
- What family/group is Uranium in? Rare Earth Metals
- Is element #42 a metal, nonmetal, or metalloid? Metal
- Which is more reactive (Silicon or Cesium)? Cesium
- How many valence electrons does Al have? 3 valence e<sup>-</sup>
- What family/group is potassium in? Alkali Metals
- What family/group is Xenon in? Noble Gases
- How many neutrons does element #22 have? 26 neutrons
- What is the atomic mass of Nitrogen? 14 amu
- Is element #7 a metal, nonmetal, or metalloid? Nonmetal
- Is element #14 a metal, nonmetal, or metalloid? Metalloid
- What element has similar properties to Zinc? Cadmium
- What is one physical property of element #24? Conducts heat
- What is one physical property of element #8? Gas @ room temp
- Which family/group is considered inert? Noble Gases
- What period is element #42 in? Period 5
- How many neutrons does element #53 have? 74 neutrons
- Which is more reactive (Chlorine or Bromine)? Chlorine
- What is the atomic mass of Tellurium? 128 amu
- What period is element #16 in? Period 3
- How many protons does Manganese have? 25 protons
- I have 1 valence e<sup>-</sup> and 49 neutrons. Who am I? Rubidium
- I am in period 4 and 41 neutrons. Who am I? Germanium

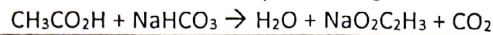
Directions: List the following as a chemical or physical change. Write a "C" for chemical and a "P" for physical.

- C Wood burning
- P Sublimation
- P Mowing the lawn
- P Ice melting
- P Breaking a glass beaker
- C Two chemicals mix together and there is a drastic temperature change
- P Dying hair
- C Fruit rotting
- C Silver Nitrate chemically combines with Potassium Chloride to produce Potassium Nitrate and the precipitate, Silver Chloride.
- P Deposition
- C Two chemicals mix together and there is a color change
- C The process of digestion
- C CH<sub>4</sub> and O<sub>2</sub> combine to release water, hydrogen gas, and carbon monoxide.
- C C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> + 6O<sub>2</sub> → 6CO<sub>2</sub> + 6H<sub>2</sub>O + ATP
- P Liquid gold freezing to become solid gold

Directions: Use what you know about the Law of Conservation of Mass to answer the following questions.

1. What is the Law of Conservation of Mass/Matter/Energy? Matter and Energy cannot be created or destroyed.

2. Fill in the table below by observing the following equation:



a.

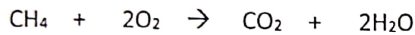
Element	Reactants (# of Atoms)	Products (# of Atoms)
Carbon	3C	3C
Hydrogen	5H	5H
Oxygen	5O	5O
Sodium	1Na	1Na

b. Does the equation above satisfy the Law of Conservation of Matter? How do you know?

yes, because there is the same # of each atom on each side of the equation.

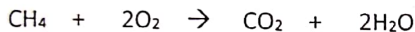
3. If you perform a chemical reaction with 8 grams of Oxygen, 30 grams of Hydrogen, and 14 grams of Nitrogen as your reactants, how many grams of NHO would you have as the products? 8g O + 30g H + 14g N = 52g NHO

4.



16g     64g     44g     36g

5.

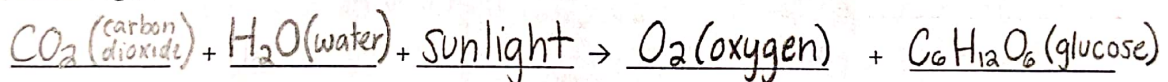


10g     16g     6g     20g

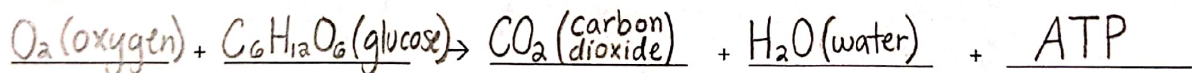
6.  $2\text{NaN}_2 \rightarrow 2\text{Na} + 3\text{N}_2$ . If 500 grams of  $\text{NaN}_2$  decomposes to form 323.20 grams of  $\text{N}_2$ . How much Na is produced?

$$\underline{500g \text{ NaN}_2} - \underline{323.20g \text{ N}_2} = \underline{176.80g \text{ Na}}$$

Directions: Place the following terms in their appropriate spot in the PHOTOSYNTHESIS equation below: oxygen, carbon dioxide, water, glucose, and sunlight.



Directions: Place the following terms in their appropriate spot in the CELLULAR RESPIRATION equation below: oxygen, carbon dioxide, water, glucose, and ATP.



Directions: Fill out the table below to help you compare and contrast Photosynthesis and Respiration.

	Photosynthesis	Respiration
Purpose	To make <u>sugar (glucose)</u>	To make <u>useable energy (ATP)</u>
Reactants (raw materials)	<u>CO<sub>2</sub> and H<sub>2</sub>O and sunlight</u>	<u>O<sub>2</sub> and C<sub>6</sub>H<sub>12</sub>O<sub>6</sub></u>
Products	<u>O<sub>2</sub> and C<sub>6</sub>H<sub>12</sub>O<sub>6</sub></u>	<u>CO<sub>2</sub> and H<sub>2</sub>O and ATP</u>
Type of cell it occurs in	<u>plant cell</u>	<u>plant cell and animal cell</u>
Organelle it occurs in	<u>chloroplast</u>	<u>mitochondria</u>

1. Directions: Match the type of relationship below with its appropriate definition.

- |                      |  |
|----------------------|--|
| <u>A</u> parasitic   | A. Organism that absorbs nutrients from the body of another organism, often causing harm |
| <u>D</u> competition | B. A close, typically long term interaction between two organisms                        |
| <u>B</u> symbiotic   | C. Two or more organisms work together to the benefit of both organisms                  |
| <u>C</u> mutualism   | D. The simultaneous demand by two or more organisms for limited environmental resources  |

2. Directions: Match the words below with their appropriate definition.

- |                      |  |
|----------------------|--|
| <u>C</u> vector      | A. organism that makes its own food from the sunlight              |
| <u>A</u> autotroph   | B. organism that obtains nutrients from the body of dead organisms |
| <u>D</u> heterotroph | C. animal that carries or transmits a disease                      |
| <u>B</u> decomposer  | D. organism that has to consume its nutrients                      |

3. Directions: Match the words below with their appropriate definition.

- |  |  |
|--|--|
| <u>B</u> Bioethics                     | A. To grow an organism from a single original cell               |
| <u>E</u> Genetic Engineering           | B. Study of morality surrounding medical research                |
| <u>D</u> Genetically modified organism | C. A cell that potentially could develop into any type of cell   |
| <u>A</u> Cloning                       | D. An organism whose genetic material has been altered           |
| <u>C</u> Stem cell                     | E. Use of living organisms to solve a problem                    |
| <u>F</u> Biotechnology                 | F. Science of altering genes to produce new traits or substances |

Key Vocabulary: Match the terms below with the statement or correct definition from our hydrosphere unit.

- |                              |                               |                              |
|------------------------------|-------------------------------|------------------------------|
| <del>A.</del> Aquifer        | <del>H.</del> Water Table     | <del>O.</del> Chemosynthesis |
| <del>B.</del> Artesian Well  | <del>I.</del> Watershed       | <del>P.</del> Contaminants   |
| <del>C.</del> River Basin    | <del>J.</del> Submersible     | <del>Q.</del> EPA            |
| <del>D.</del> Estuary        | <del>K.</del> Downwelling     | <del>R.</del> Irrigation     |
| <del>E.</del> Eutrophication | <del>L.</del> Upwelling       | <del>S.</del> Secchi Disk    |
| <del>F.</del> Lake Turnover  | <del>M.</del> Salinity        | <del>T.</del> Stewardship    |
| <del>G.</del> Tributaries    | <del>N.</del> Bioluminescence |                              |

- i. O The formation of food using energy released from chemical reactions instead of the sun.
- ii. L The vertical movement of deep water up to the surface.
- iii. Q Environmental Protection Agency- gov't agency in charge of water quality standards.
- iv. M The concentration of salts in a liquid such as water.
- v. D An area where salty ocean water mixes with fresh water from rivers
- vi. I An area of land where precipitation collects and then drains into a single collection place, often a lake or stream
- vii. T Responsibility for conserving and restoring the Earth's resources for future generations.
- viii. F The yearly rising and sinking of cold and warm water layers in a lake
- ix. A a rock layer that stores water and allows water to flow through it

- x. P Foreign components in a substance (water).
- xi. H The highest part in the ground that is saturated, or completely filled with water
- xii. J A small, underwater vehicle used for ocean research (can be manned or remotely operated).
- xiii. R The process of supplying water to land to grow crops.
- xiv. G Small streams that flow into a river
- xv. C Drainage area of a river
- xvi. N Emission of light by living organisms. It occurs when chemical reactions give off light.
- xvii. B A well in which pressurized water flows upward to the surface
- xviii. S A flat, white disc lowered into the water by a rope until it is barely visible. Measures the clarity of the water.
- xix. E An increase in nutrients in a lake or pond. Can occur naturally or as a result of pollution, and causes increased growth of algae and plants
- xx. K The movement of water from the surface to greater depths.

1. Match the fossils types below with the statement that best describes them.

- |                                 |                                      |
|---------------------------------|--------------------------------------|
| A. Original Remains (Preserved) | E. Petrified Fossil (Permineralized) |
| B. Carbon Film (Carbonized)     | F. Mold Fossil                       |
| C. Trace Fossil                 | G. Cast Fossil                       |
| D. Index Fossil                 |                                      |

- i. A Remains that have been kept in ice, tar, or amber.
- ii. D Ex: ammonite and trilobite
- iii. B Fossils coated by a thin layer of a black element. They show a significant amount of detail.
- iv. G A 3-D or solid copy of a fossil.
- v. F The opposite of a cast fossil.
- vi. C Ex: a footprint, scat, or nest.
- vii. E Happens when water passes through a dead organism and turns it to stone.

2. Match the statements below with the Era that best describes it.

- |                     |             |
|---------------------|-------------|
| A. Precambrian Time | C. Mesozoic |
| B. Paleozoic        | D. Cenozoic |

- i. D Humans rule the earth
- ii. B Reptiles appear
- iii. C Reptiles dominate the earth
- iv. A 90% of Earth's history
- v. C Flowering plants appear
- vi. C Jurassic, Triassic, and Cretaceous periods
- vii. D Quaternary and Tertiary periods

3. Key Vocabulary: Match the terms below with the statement the correct definition from our Earth History Unit.

~~A.~~ Geologic Time  
Scale

~~B.~~ Relative Age

~~C.~~ Absolute Age

~~D.~~ Unconformity

~~E.~~ Law of  
Superposition

~~F.~~ Index Fossil

~~G.~~ Carbon Dating

~~H.~~ Fossil

~~I.~~ Sedimentary Rock

~~J.~~ Extrusion

~~K.~~ Intrusion

~~L.~~ Ice Core

~~M.~~ Half-Life

~~N.~~ Igneous Rock

~~O.~~ Fault

- i. G Used to estimate the age of a fossil using the amount of Carbon-14 present.
- ii. C The actual age in years of an event or object.
- iii. I Rock that forms when sediment (sand and mud) builds up over time and undergoes extreme pressure hardening into rock. This type of rock can contain fossils.
- iv. H A trace or the remains of a once-living thing from long ago.
- v. K The movement of magma through underground rocks within the Earth, usually in an upward direction.
- vi. L A tubular sample that shows the layers of snow and ice that have built up over the years which is used to study earth's past climate and events.
- vii. N Rock that forms when molten rock/lava cools and hardens. Typically does not contain fossils because it is too hot.
- viii. M The length of time it takes for half of the atoms in a sample of a radioactive element to decay into atoms of another element.
- ix. J The emission of lava onto the surface of the earth.
- x. D When a person is estimating the relative age of the rock layer and the layers are disturbed or there are missing layers.
- xi. B The age of an event or object in relation to other events or objects.
- xii. E In undisturbed rock layers, the layer on the bottom is the oldest rock and the layer on top is the youngest rock (used to determine relative age).
- xiii. O Landform created when two tectonic plates are scraping past each other, triggering many earthquakes.
- xiv. F A fossil of an organism that was common, lived in many areas, and existed only during a certain span of time. Used to help determine the age of rock layers.
- xv. A The summary of Earth's history, divided into intervals of time defined by major events or changes on Earth.