

Name \_\_\_\_\_ Date \_\_\_\_\_



## Activity 14: Cooking with the Elements

**Directions:** For each element combination in parentheses below, use the **symbols** for the elements to obtain a scrambled word. Then unscramble the letters to form the correct words. Write the symbols in the answer blank following each group of elements. This will help you complete each numbered paragraph.

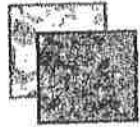
**Example:** (boron, indium, oxygen, tantalum) = BInOTa, which unscrambles to form the word OBTAIn.

- For breakfast we (yttrium + francium) \_\_\_\_\_ eggs, (cobalt + nitrogen + barium) \_\_\_\_\_ and (hydrogen + hydrogen + arsenic) \_\_\_\_\_ (oxygen + nitrogen + tungsten + bromine) \_\_\_\_\_ potatoes, and toast (astatine + tungsten + helium) \_\_\_\_\_ or (hydrogen + tellurium + tungsten + iodine) \_\_\_\_\_ bread. Or, we can have (nitrogen + calcium + einsteinium + protactinium + potassium) \_\_\_\_\_ or waffles and sausage, or (aluminum + cerium + rhenium) \_\_\_\_\_, such as (radon + cobalt) \_\_\_\_\_ (lanthanum + potassium + fluorine + einsteinium) \_\_\_\_\_ or (nitrogen + iodine + silicon + radium) \_\_\_\_\_ (boron + nitrogen + radium) \_\_\_\_\_, with milk.
- (thorium + helium + aluminum + yttrium) \_\_\_\_\_ (potassium + actinium + sulfur + tin) \_\_\_\_\_ would be fruits, such as (sodium + sodium + barium + sulfur) \_\_\_\_\_, grapes, (sulfur + iodine + tungsten + potassium + iodine) \_\_\_\_\_, apples, and oranges and different (einsteinium + carbon + helium + einsteinium) \_\_\_\_\_ and (potassium + chromium + erbium + actinium + sulfur) \_\_\_\_\_. Of course, most of us would (erbium + radium + thorium) \_\_\_\_\_ have (hydrogen + phosphorus + sulfur + carbon + iodine) \_\_\_\_\_, (iodine + oxygen + cobalt + potassium + einsteinium) \_\_\_\_\_, or (nitrogen + dysprosium + calcium) \_\_\_\_\_.
- For drinks, we (fluorine + phosphorus + rhenium + erbium) \_\_\_\_\_ (calcium + cobalt + lanthanum + cobalt) \_\_\_\_\_ or another type of soda (vanadium + erbium + oxygen) \_\_\_\_\_ milk, juice or (erbium + astatine + tungsten) \_\_\_\_\_.
- Most people have fast food and (selenium + uranium) \_\_\_\_\_ the drive (ruthenium + sulfur + thorium) \_\_\_\_\_ for lunch. They usually have only half an hour and (oxygen + carbon + selenium + holmium) \_\_\_\_\_ (carbon + tantalum + osmium) \_\_\_\_\_ or hamburgers and French (einsteinium + iodine + francium) \_\_\_\_\_. Sometimes they will be (carbon + yttrium + lutetium + potassium) \_\_\_\_\_ and have a salad, (uranium + phosphorus + sulfur + oxygen) \_\_\_\_\_, sandwich, or (neon + iodine + hydrogen + selenium + carbon) \_\_\_\_\_ take-out. At (erbium + oxygen + thorium) \_\_\_\_\_ times, people, especially students, eat (holmium + sulfur + carbon + sodium) \_\_\_\_\_ or (carbon + lithium + iodine + hydrogen) \_\_\_\_\_ cheese (iodine + francium + einsteinium) \_\_\_\_\_.

(continued)



Name \_\_\_\_\_ Date \_\_\_\_\_



## Activity 14: Cooking with the Elements (continued)

5. Dinners are the big meals. (iodine + sulfur + thorium) \_\_\_\_\_ is (helium + tungsten + nitrogen) \_\_\_\_\_ families (thorium + gallium + erbium) \_\_\_\_\_ together after a long day. Dinners usually consist of a main dish containing some type of meat. The meat can be (neon + terbium + oxygen) \_\_\_\_\_, (americium + hydrogen) \_\_\_\_\_, pork (sulfur + phosphorus + carbon + holmium) \_\_\_\_\_, chicken, (boron + barium + yttrium) \_\_\_\_\_ (carbon + barium + potassium) \_\_\_\_\_ ribs, prime rib, or (iodine + hydrogen + sulfur + fluorine) \_\_\_\_\_.
6. Of course, there is always some type of carbohydrate. (iodine + thorium + sulfur) \_\_\_\_\_ is usually a potato, which we can bake, mash, (yttrium + francium) \_\_\_\_\_, scallop, or boil. For variety, there is also rice or (tantalum + arsenic + phosphorus) \_\_\_\_\_.
7. There usually is a (holmium + cerium + iodine + carbon) \_\_\_\_\_ of vegetables. Some (sulfur + carbon + iodine + holmium + cerium) \_\_\_\_\_ are (radon + cobalt) \_\_\_\_\_, peas, (cobalt + lithium + oxygen + bromine + carbon) \_\_\_\_\_, beans, (silver + arsenic + phosphorus + uranium + argon + sulfur) \_\_\_\_\_ or squash.
8. One of my favorite (sulfur + uranium + sulfur + oxygen + phosphorus) \_\_\_\_\_ is (tungsten + neon) \_\_\_\_\_ England (americium + chlorine) \_\_\_\_\_ chowder. I (gold + sulfur + tellurium) \_\_\_\_\_ the (nitrogen + barium + cobalt) \_\_\_\_\_ and (nitrogen + oxygen + nickel + oxygen + sulfur) \_\_\_\_\_ first. Then I add (astatine + tungsten + erbium) \_\_\_\_\_, (sulfur + chlorine + americium) \_\_\_\_\_, celery, and (iodine + sulfur + sulfur + phosphorus + cerium) \_\_\_\_\_ such as (yttrium + barium) \_\_\_\_\_ leaf, thyme, and marjoram. The diced potatoes and (rhenium + carbon + americium) \_\_\_\_\_ are added about thirty minutes (oxygen + rhenium + beryllium + fluorine) \_\_\_\_\_ serving.
9. The best part is dessert. There are many different (potassium + calcium + einsteinium) \_\_\_\_\_ and (iodine + einsteinium + phosphorus) \_\_\_\_\_. (uranium + rubidium + rhodium + barium) \_\_\_\_\_ looks like red celery, and is tart (helium + tungsten + nitrogen) \_\_\_\_\_ baked in (phosphorus + einsteinium + iodine) \_\_\_\_\_. Another simple dessert is (cerium + iodine) \_\_\_\_\_ (americium + carbon + rhenium) \_\_\_\_\_. (iodine + thorium + sulfur) \_\_\_\_\_ can be served with (erbium + oxygen + thorium) \_\_\_\_\_ desserts or (yttrium + boron) \_\_\_\_\_ itself, in a (neon + cobalt) \_\_\_\_\_ or a dish, (iodine + thorium + tungsten) \_\_\_\_\_ (cobalt + tellurium + carbon + lanthanum + holmium) \_\_\_\_\_ or (yttrium + neodymium + calcium) \_\_\_\_\_ toppings.
10. A fancy dessert is (phosphorus + rhenium + carbon + einsteinium) \_\_\_\_\_ with a (neodymium + boron + radium + yttrium) \_\_\_\_\_ sauce. Many (neon + iodine + fluorine) \_\_\_\_\_ restaurants will (cerium + lanthanum) \_\_\_\_\_ their desserts with (nitrogen + boron + dysprosium + radium) \_\_\_\_\_ to make a flaming dessert.

**Content Practice B****LESSON 1****Forms of Energy**

**Directions:** On the line before each definition, write the letter of the term that matches it correctly. Some terms may be used more than once or not at all.

- |   |  |
|---|--|
| _____ 1. This is the term for the distance between similar points on a wave.    | <b>A.</b> potential energy               |
| _____ 2. This is carried by electromagnetic waves.                              | <b>B.</b> gravitational potential energy |
| _____ 3. A lightbulb becoming lit is an example of this.                        | <b>C.</b> nuclear energy                 |
| _____ 4. This type of energy is obtained through food.                          | <b>D.</b> kinetic energy                 |
| _____ 5. Gamma rays are an example of this.                                     | <b>E.</b> electric energy                |
| _____ 6. A disturbance that transfers energy is called this.                    | <b>F.</b> chemical energy                |
| _____ 7. This type of energy is related to the mass and the speed of an object. | <b>G.</b> mechanical energy              |
| _____ 8. This is stored energy released from the nucleus of an atom.            | <b>H.</b> thermal energy                 |
| _____ 9. This type of wave carries sound energy.                                | <b>I.</b> sound wave                     |
| _____ 10. This is a collection of parts working together.                       | <b>J.</b> radiant energy                 |
| _____ 11. This is energy stored and released in bonds between atoms.            | <b>K.</b> electromagnetic                |
| _____ 12. This type of energy moves your arms and legs.                         | <b>L.</b> system                         |
| _____ 13. This type of energy is in an electric current.                        | <b>M.</b> environment                    |
| _____ 14. This type of energy is based on mass and height.                      | <b>N.</b> wave                           |
| _____ 15. This type of energy is due to motion.                                 | <b>O.</b> wavelength                     |
| _____ 16. This is the sum of the potential energy and the kinetic energy.       |  |
| _____ 17. This is the term for waves that are electric and magnetic.            |  |

# Day 5 - 7<sup>th</sup> Grade

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## Energy

### Multiple Choice

- 1) Of the following units, the one that is a unit of energy is
    - a. Newton
    - b. Joule
    - c. Meter
    - d. Liter
  - 2) A stationary object may have
    - a. potential energy
    - b. velocity
    - c. kinetic energy
    - d. acceleration
  - 3) Which is the best example that something has kinetic energy?
    - a. a car parked on a steep hill
    - b. a tennis ball rolling across the court
    - c. a picture hanging on the wall
    - d. a piece of coal before it's burned
  - 4) Conservation of energy means that
    - a. energy can be created but not destroyed
    - b. energy can be destroyed but not created
    - c. energy can both be created and destroyed
    - d. energy can neither be created nor destroyed
  - 5) When coal is burned to produce electricity, the electrical energy produced is less than the potential energy of the coal. Which best explains this observation?
    - a. as the coal is heated, the molecules move so fast that they are destroyed
    - b. some of the energy in the coal is destroyed by the intense heat required to release its potential energy
    - c. some of the potential energy in the coal is converted into forms of energy other than electricity
    - d. the amount of energy in the coal is not known
- 
- 6) Describe the energy transformations that occur during the process of coal being used to power your hairdryer.

(At least 6-7 sentences).

# PERIODIC TABLE OF THE ELEMENTS

14 Group IUPAC  
IVA Group CAS

Symbol: C  
Name: Carbon  
Electron Configuration: 1s<sup>2</sup> 2s<sup>2</sup> 2p<sup>2</sup>

Selected Oxidation States: +4, -4

Atomic Mass: 12.011

*Needed for Day 4 and Day 5 Day 8th Grade*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 H Hydrogen 1.0079	2 He Helium 4.0026	3 Li Lithium 6.941	4 Be Beryllium 9.0122	5 B Boron 10.811	6 C Carbon 12.011	7 N Nitrogen 14.007	8 O Oxygen 15.999	9 F Fluorine 18.998	10 Ne Neon 20.179	11 Na Sodium 22.990	12 Mg Magnesium 24.305	13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulphur 32.065	17 Cl Chlorine 35.453	18 Ar Argon 39.948
19 K Potassium 39.098	20 Ca Calcium 40.078	21 Sc Scandium 44.956	22 Ti Titanium 47.887	23 V Vanadium 50.942	24 Cr Chromium 51.996	25 Mn Manganese 54.938	26 Fe Iron 55.845	27 Co Cobalt 58.933	28 Ni Nickel 58.693	29 Cu Copper 63.546	30 Zn Zinc 65.39	31 Ga Gallium 69.723	32 Ge Germanium 72.64	33 As Arsenic 74.922	34 Se Selenium 78.96	35 Br Bromine 79.904	36 Kr Krypton 83.80
37 Rb Rubidium 85.468	38 Sr Strontium 87.62	39 Y Yttrium 88.906	40 Zr Zirconium 91.224	41 Nb Niobium 92.906	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 127.60	53 I Iodine 126.90	54 Xe Xenon 131.29
55 Cs Cesium 132.91	56 Ba Barium 137.33	57 La Lanthanide	58 Ce Cerium 137.92	59 Pr Praseodymium 138.91	60 Nd Neodymium 144.24	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 162.51	67 Ho Holmium 164.93	68 Er Erbium 167.26	69 Tm Thulium 168.93	70 Yb Ytterbium 173.05	71 Lu Lutetium 174.96	
87 Fr Francium (223)	88 Ra Radium (226)	89-103 Ac Actinide	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 Uun Ununium (281)	111 Uuu Ununium (272)	112 Uub Unbium (285)	113 Uut Untrium (284)	114 Uuq Unquadium (289)	115 Uup Unpentium (288)	116 Uuh Unhexium (291)	117 Uus Unseptium (291)	118 Uuo Unoctium (294)

**Electron Shells**

1	K	2	s <sup>2</sup>	p	0	f
2	L	8	2	6		
3	M	18	2	6	10	
4	N	32	2	6	10	14
5	O	32	2	6	10	14
6	P	18	2	6	10	
7	Q	8	2	6		
8	R	2	2			

**Lanthanide**

57	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
+3	+3	+3	+3	+3	+3	+3	+3	+3	+3	+3	+3	+3	+3	+3	+3
138.91	140.12	140.91	144.24	144.24	(145)	150.36	151.96	157.25	158.93	162.51	164.93	167.26	168.93	173.05	174.96

**Actinide**

89	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr
+3	+3	+4	+3	+3	+3	+3	+3	+3	+3	+3	+3	+3	+3	+3	+3
(227)	232.04	232.04	231.04	238.03	(237)	(244)	(243)	(247)	(247)	(251)	(252)	(257)	(259)	(259)	(262)

