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**Classifying Matter: Atoms, Elements, & Compounds
Learning Targets**

**(Book pages: 42-51, 102-104, 114-119)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Target** | **Before We Start** | **Still Don’t Know it** | **Know Some of it** | **Can Teach It** |
| 1. I can describe the difference between an element and a compound.
 |  |  |  |  |
| 1. I can find an element’s symbol on the periodic table and can write it correctly.
 |  |  |  |  |
| 1. I can describe the difference between an element’s symbol and a compound’s formula.
 |  |  |  |  |
| 1. I can recognize the limited number of elements that make up Earth’s crust, oceans, atmosphere, and living matter.
 |  |  |  |  |
| 1. I can explain the general properties of metals.
 |  |  |  |  |
| 1. I can explain the general properties of metalloids (semi-metals.)
 |  |  |  |  |
| 1. I can explain the general properties of nonmetals.
 |  |  |  |  |
| 1. I can identify where metals, nonmetals and metalloids are located on the periodic table.
 |  |  |  |  |
| 1. I can use the physical property of density to identify an unknown element.
 |  |  |  |  |

**Make and study flashcards for these vocabulary terms. Page numbers are in parentheses.**

**Substances and Mixtures**1. Matter (42)
**2. Atom** – a small particle that is the building block of matter, made up of protons and neutrons in a nucleus with electrons orbiting the nucleus
3. Element (44)
4. Molecule (44)
5. Compound (45)
**6. Mixture** -matter that can vary in composition, made from 2 or more substances that are not chemically combined

**Metals, Nonmetals and Metalloids**

7. Metal (103)
8. Luster (104)
9. Ductility (104)
10. Malleability (104)
**11. Conductor** – a substance that allows heat or electricity to pass through it; conductivity is a physical property of metals
12. Nonmetal (114)
**13. Insulator** – a substance that does not allow heat or electricity to pass through it; a physical property of non-metals
14. Metalloid (118)
**15. Semi-metal** – another term for metalloid
16. Semiconductor (118)

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| **Elements** | **Compounds** |
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**Target 1

Target 2**\_\_\_\_\_\_ Mercury \_\_\_\_\_\_ Astatine \_\_\_\_\_\_ Antimony \_\_\_\_\_\_ Iodine

**Target 3**

What is the difference between No and NO?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Identify the following as element symbols or compound formulas:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Au \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_H2O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_H2SO4

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_NO \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_No \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Pb

**Target 4**

List the major (not trace) elements in the human body.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

List the major (not trace) elements in Earth’s crust:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

List the major elements in Earth’s oceans:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

List the major elements in Earth’s atmosphere:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Go back to the lists above and highlight one element in the body, crust, and oceans that is unique to that list and isn’t in any other list above.**

**Target 5 – 8**

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| **Metals** | **Metalloids** | **Nonmetals** |
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**Target 9**

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| --- | --- |
| **Name** | **Density (g/cm3)** |
| Copper | 8.3-9.0 |
| Gold | 19.8 |
| Aluminum | 2.69 |
| Cedar | .5 |
| Iron | 7.8 |

Calculate the density of the unknown block to identify which element it is.



Mass: 7206.21g

Volume: 2669cm3

\_\_\_\_\_\_\_\_\_\_\_\_

(name of object)