**Classification of Matter**

ACTIVITY:

|  |  |  |
| --- | --- | --- |
| **Station** | **Element, Compound, Homogenous Mixture, Heterogeneous Mixture** | **Explain why…** |
| **1** |  |  |
| **3** |  |  |
| **4** |  |  |
| **5** |  |  |
| **6** |  |  |
| **7** |  |  |
| **8** |  |  |
| **9** |  |  |

Real Substances:

|  |  |  |
| --- | --- | --- |
| Material | Pure Substance ***or Mixture*** | ***Element, Compound,***  ***Homogeneous, Heterogeneous*** |
| iron filings (Fe) |  |  |
| limestone (CaCO3) |  |  |
| sugar + pure water  (C12H22O11 + H2O) |  |  |
| concrete |  |  |
| Pacific Ocean |  |  |
| helium inside a balloon |  |  |
| aluminum (Al) |  |  |
| acetylene (C2H2) |  |  |
| soil |  |  |
| pure water (H2O) |  |  |
| salt + pure water  (NaCl + H2O) |  |  |

Chemistry Worksheet: Matter #1

1. A mixture (*is/is not*) a chemical combining of substances.
2. In a compound the (*atoms/molecules*) are (*chemically/physically*) combined so that the elements that make up the compound (retain/lose) their identities and (*do/do not*) take on a new set of properties.
3. The smallest identifiable unit of a compound is a(n) \_\_\_\_\_\_\_\_\_\_\_,which is made up of \_\_\_\_\_\_\_\_\_\_\_\_ which are chemically bonded.
4. True or False: A mixture is always made up of a combination of elements.
5. In a mixture, the substances (*lose/retain*) their identities.
6. In a mixture the substances involved (*can/cannot*) be separated by a simple physical process.
7. In a compound the elements involved (*can/cannot)* be separated by a simple physical process because the elements are (physically combined/chemically bonded).
8. (*True or False*): An element can be broken down into a simpler substance.
9. The smallest identifiable unit of an element is a(n) \_\_\_\_\_\_\_\_\_\_\_.
10. How can you tell if a substance is an element?
11. From the following list of substances, circle the ones that are ELEMENTS. *(HINT: Periodic table?)*

silver carbon dioxide wood alcohol chromium

water hydrogen carbon nitrogen

oxygen gold sugar

salt air sulfur

magnesium nickel aluminum

**Think it through…**

1. Explain how to separate the sugar and water in a solution of sugar and water.
2. How would you separate a mixture of alcohol and water?
3. How would you separate sand and water?