Topic 1 – Matter and Energy

Lesson 1 – Types of Matter

**Matter**

**(stuff)**

**Pure Substances Mixtures**

• Fixed and definite composition • varying composition

• physical combination of 2 or

 more substances

• can be physically separated

**Elements Compounds Homogeneous Heterogeneous**

• identical atoms • chemical combo of • uniformly mixed •unevenly mixed

 2 or more different

 atoms

• cannot be • can be chemically

 decomposed decomposed

**Metals Inorganic Aqueous solution**

**Nonmetals Organic**

**Metalloids**

**Particle Diagrams**

Atom X ○ Atom Y •

Diatomic Element X ○○ Monatomic Element Y •

Compound XY ○• Compound XY2 •○•

Mixture of diatomic element X Mixture of compound XY2 and

and monatomic element Y monatomic element Y

○○ ○○ ○○ ○○ •○• •○• •○• •○•

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Terms to Know

Chemistry –

Matter –

Pure substance –

Elements –

Compounds –

Mixtures –

Homogeneous mixtures –

Heterogeneous mixtures –

Law of Definite Composition –

Why are oxygen and water considered to be pure substances?

Compare and Contrast Mixtures and Compounds

Similarities –

Differences -

Symbols used to identify elements, compounds, and mixtures

Elements – one or two letters, first one is always capital

Compounds – symbols for elements and their number written as subscripts

Homogeneous mixtures – look for (aq) which means matter is dissolved in water

Physical Methods of Separating Homogeneous Mixtures

1. Crystallization –
2. Distillation –
3. Chromatography
4. Filtration
5. Decantation