

STATION 1: Chemical and Physical Changes and Properties

Answer the following in complete sentences.

1. List three physical properties of an iron nail.
2. List four indications that a chemical change has taken place

How do you know that each of these is a chemical change?

3. Food spoils
4. A foaming antacid tablet fizzes in water
5. A ring of scum forms around your bathtub
6. Iron rusts
7. A firecracker explodes

STATION 2: Chemical and Physical Changes and Properties

Classify each of the following as a physical or chemical change

1. Bending a piece of wire
2. Burning coal
3. Cooking a steak
4. Cutting grass

Classify the following properties of the element silicon as chemical or physical properties

5. Blue-gray color
6. Brittle
7. Insoluble in water
8. Melts at 1410 ° C
9. Reacts vigorously with fluorine

STATION 3: Classification of Matter

Classify each of following as homogeneous or heterogeneous mixtures.

1. Blood
2. Chocolate-chip ice cream
3. Brass (an even blend of copper and zinc)
4. Motor oil
5. Black coffee

Classify each of the following as an element or a mixture

6. Silver
7. Pine tree
8. Orange juice
9. Oxygen
10. Iced tea
11. Air

STATION 4: Classification of Matter

Name the elements found in each of the following compounds (use your periodic table)

1. Ammonium chloride (NH_4Cl)
2. Potassium permanganate (KMnO_4)
3. Isopropyl alcohol ($\text{C}_3\text{H}_7\text{OH}$)
4. Calcium iodide (CaI_2)

Identify each of the following as a mixture or a compound. For the mixtures, classify each as homogeneous or heterogeneous

5. Soda
6. Candle wax
7. Fog
8. Ink
9. Egg
10. Ice
11. Gasoline
12. Blood

STATION 5: States of Matter

Write the abbreviation used in chemistry for each of the following.

1. Solid
2. Liquid
3. Gas
4. Aqueous
5. Precipitate

Define each of the following.

6. Solid
7. Liquid
8. Gas
9. Aqueous
10. Precipitate

STATION 6: Previous Material

Perform the following calculations. Round to the correct number of significant figures in your answer.

1. $(2.5 \times 10^{10})(3.2 \times 10^{-7})$

2. $(6.2 \times 10^{24}) \div (2.3 \times 10^{12})$

3. $(3.5 \times 10^3) + (6.3 \times 10^2)$

4. $(6.3 \times 10^8) - (3.5 \times 10^7)$

5. 1011×3.21

6. $80 \div 5.7$

7. $2001 + 1.125$

8. $20 - 10.5$

STATION 7: Miscellaneous

1. Imagine first standing in the kitchen of your home and then in the middle of a park. When you view the surrounding in each location do you see mostly elements, compounds, or mixtures?
2. Explain why this statement is false. "Because there is no change in composition during a physical change, the appearance of the substance will not change."
3. What is the law of conservation of mass?