Unit 3 NAME

Class Work 10/31/13

3.2 Classification of Matter

<u>SPARK</u>

Describe the differences between the substance below:

1. milk and cereal vs. apple juice
2. water (H_2O) and Hydrogen (H_2)
3. water and coffee

Objectives

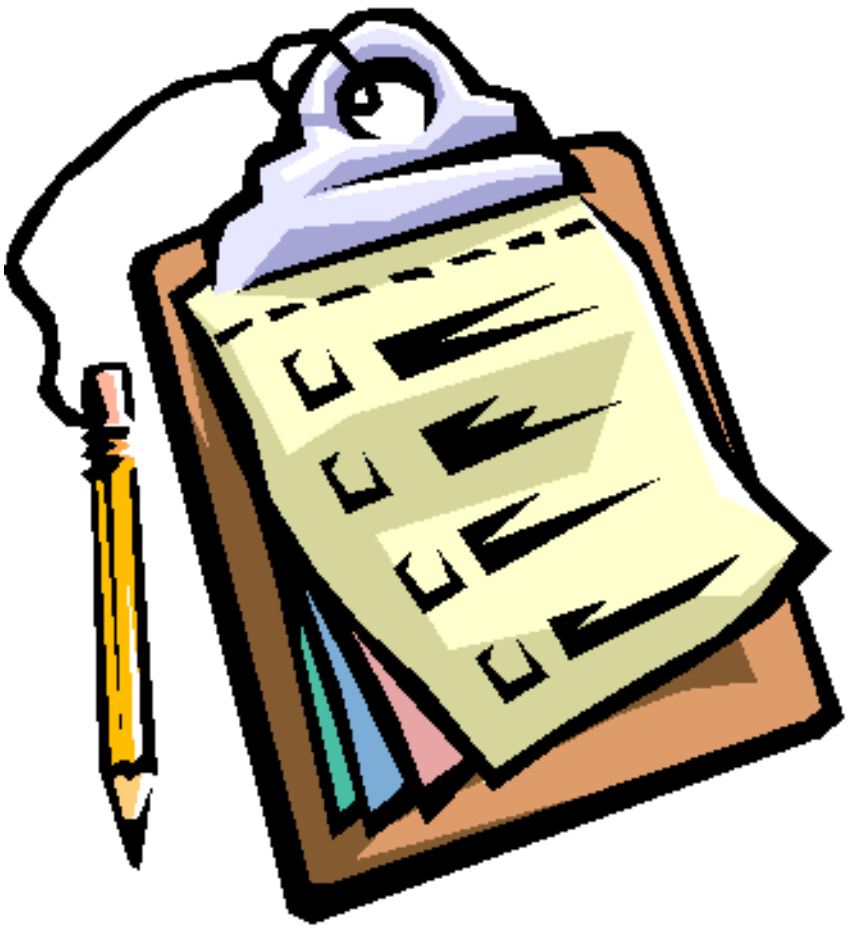
SWBAT classify substances as elements, compounds, or mixture.

Element, Symbol, Atomic number Quiz #1

- You have five minutes to complete your quiz

Agenda:

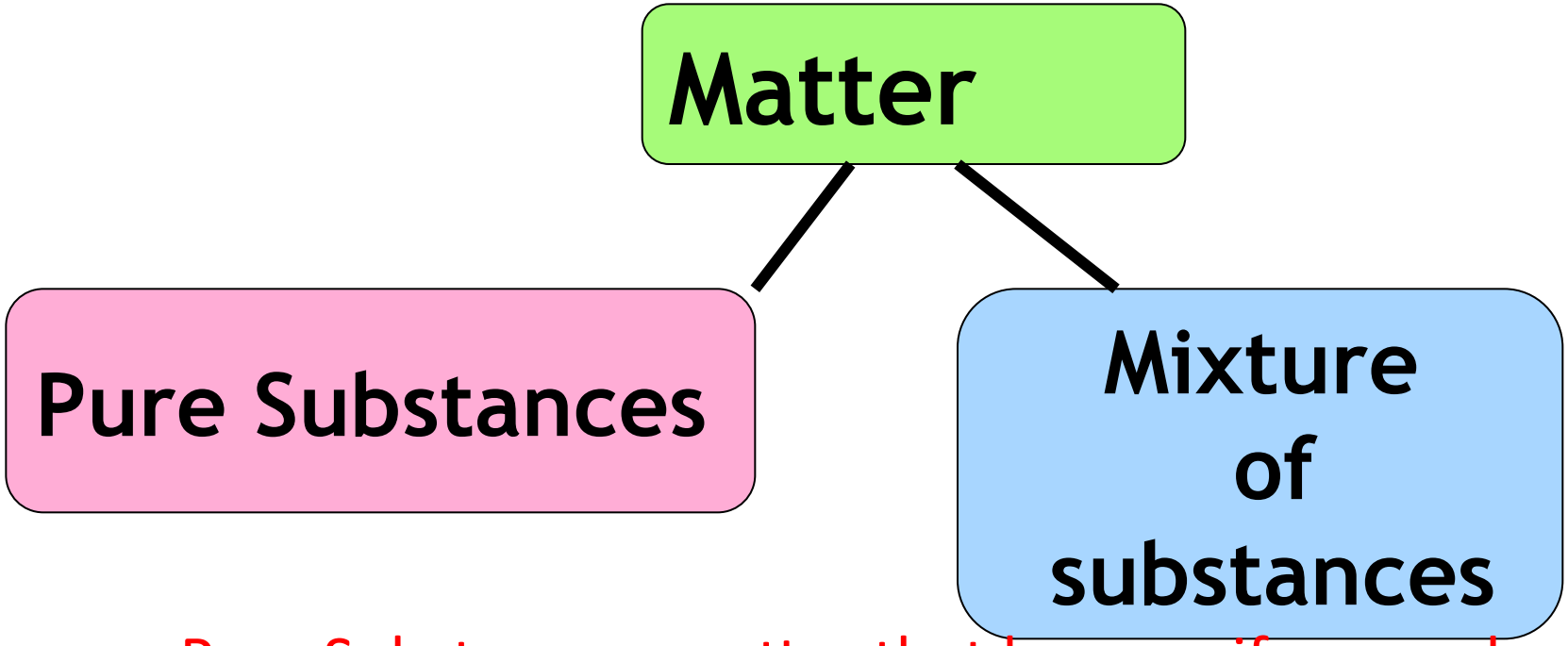
- SPARK
- Objective
- Notes
- Practice
- Homework



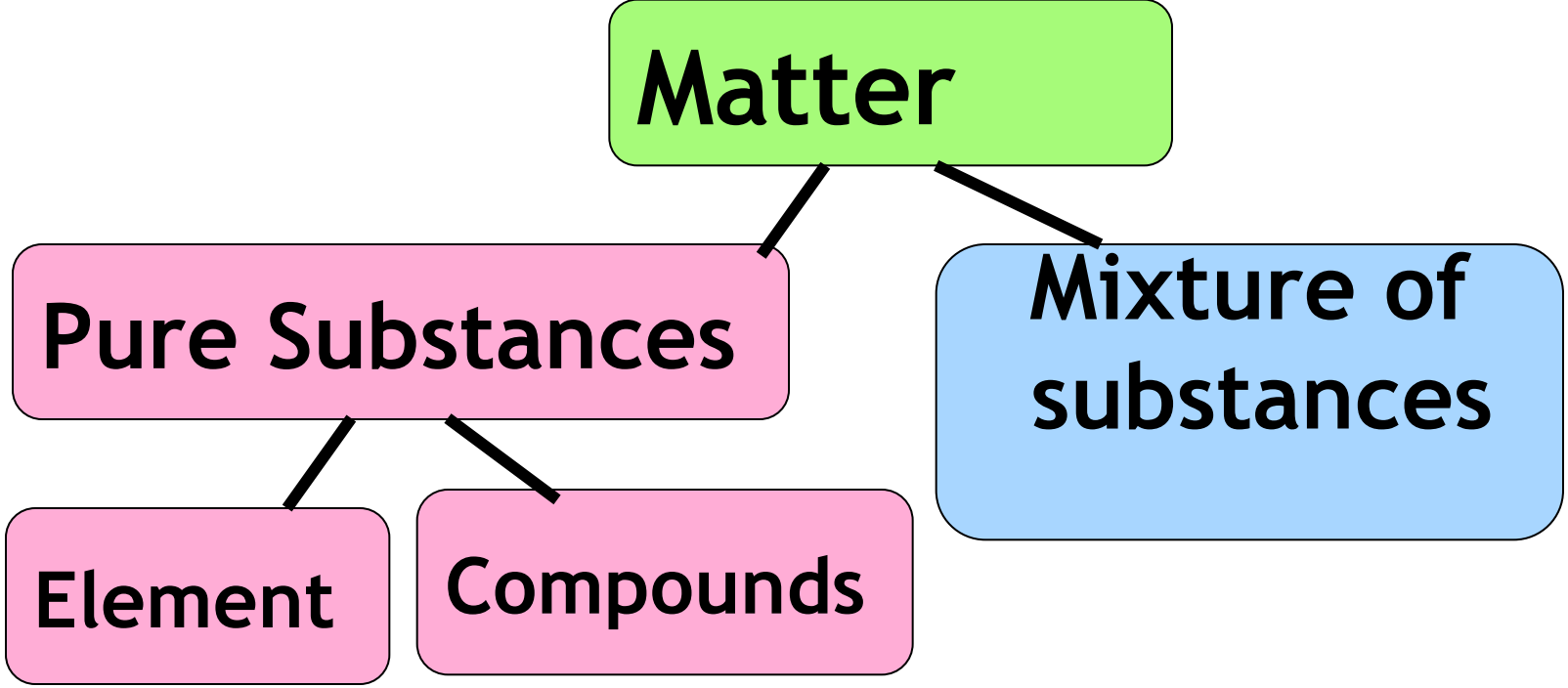
MATTER

- Anything that has mass and volume

Classification of Matter



- Pure Substance – matter that has a uniform and defined composition (e.g. water is H2O)
- Mixture – matter that has two or more substances combined and the composition of each substance can vary (e.g. sugar and water)

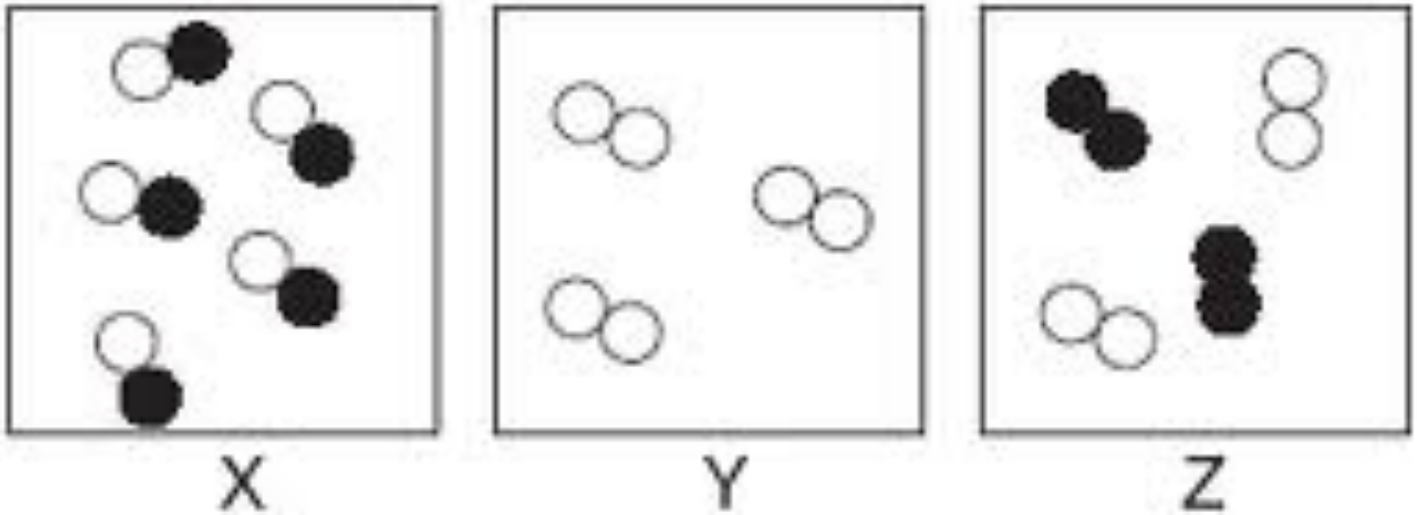


- Elements – the simplest form of matter that has a unique set of properties (composed of same type of atom)
  - It cannot be broken down into simpler substances by any chemical means
- Compounds – 2 or more elements chemically combined in a fixed proportion
  - It can only be broken down by a chemical reaction

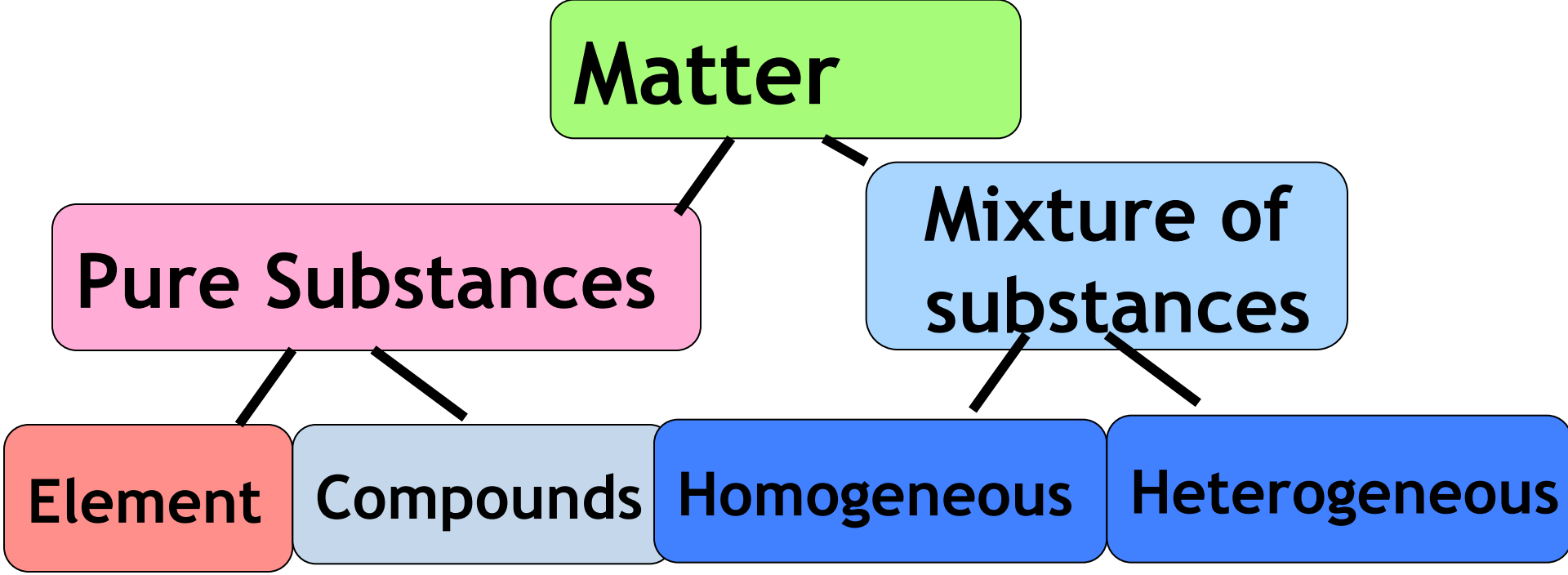
Examples : Elements and Compounds

- Elements:
  - Iron (Fe)
  - Sodium (Na)
  - Chlorine (Cl)
- Compounds:
  - Water (H_2O)
  - Salt (NaCl)
  - Carbon Dioxide (CO_2)

Particle Diagrams



Compound Element Mixture



- Homogeneous Mixture (solution) – a mixture that is uniform throughout
  - One phase components are visually undistinguishable
- Heterogeneous – a mixture that is NOT uniform throughout
  - Components are not evenly distributed
  - Separate phases

Examples : Homogeneous and heterogeneous

- Homogeneous Mixture
  - Air
  - Sugar and water
  - Coffee
  - Stainless steel (iron, chromium, and nickel)
- Heterogeneous Mixture:
  - Oil and vinegar
  - You
  - Chicken soup

Scavenger Hunt Investigation

- We will have 45 minutes to turn in this completed worksheet!
- When you are finished, silently read pages 65-71 in your books
- Answers questions #1-3 on page 69
- Get these checked and you will receive the HW!

HOMEWORK

Complete 3.2 HW