

8th grade Science, November 20th **New Unit: Matter and its Interactions!**

- Define matter
- Measure/calculate the mass, volume and density of given types of matter
- Describe types of matter according to their physical and chemical properties
- Relate the density of matter to its temperature and state (liquid, solid, gas)
- Differentiate between physical and chemical changes
- Identify observable changes during physical and chemical reactions
- Analyze and interpret data on the properties of substances before and after substances interact to determine if a chemical reaction has occurred
- Describe the particle model of matter
- Identify and describe historical and modern models of the atom
- Use the periodic table of elements to make inferences about the atomic structure of given elements
- Develop models to describe the atomic composition of simple molecules and extended structures
- Develop a model that predicts and describes changes in particle motion, temperature and state of a pure substance when thermal energy is added or removed
- Develop and use a model to describe how the total number of atoms does not change in a chemical reaction (i.e., mass is conserved)
- Use chemical formulas to infer the composition of chemical compounds
- Balance chemical equations
- Gather and make sense of information to describe the creation and uses of synthetic materials

What is matter? (textbook, p. 4)

- Matter
- Matter and Volume
 - Liquid volume
 - Measuring the volume of liquids
 - Volume of a regularly shaped solid object
 - Volume of an irregularly shaped solid object
- Matter and Mass
 - The difference between mass and weight
 - Measuring mass and weight
- Inertia
 - Mass: the measure of inertia