Unit: Matter - Grade 5

Content Area: **Science**
Course(s): **Science 5**
Time Period: **Marking Period 1**
Length: **4 weeks**
Status: **Published**

Established Goals/Standards

5-PS1-3	Make observations and measurements to identify materials based on their properties.
5-PS1-4	Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
5-PS1-3.3	Planning and Carrying Out Investigations
5-PS1-4.3	Planning and Carrying Out Investigations
5-PS1-2.3.1	Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume.
5-PS1-3.3.1	Make observations and measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon.
5-PS1-4.3.1	Conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered.
5-PS1-3.3.1	Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume.
5-PS1-1.PS1.A.1	Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model showing that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon and the effects of air on larger particles or objects.
5-PS1-2.PS1.A.1	The amount (weight) of matter is conserved when it changes form, even in transitions in which it seems to vanish.
5-PS1-3.PS1.A.1	Measurements of a variety of properties can be used to identify materials. (Boundary: At this grade level, mass and weight are not distinguished, and no attempt is made to define the unseen particles or explain the atomic-scale mechanism of evaporation and condensation.)
5-PS1-4.PS1.B.1	When two or more different substances are mixed, a new substance with different properties may be formed.
5-PS1-2.PS1.B.1	No matter what reaction or change in properties occurs, the total weight of the substances does not change. (Boundary: Mass and weight are not distinguished at this grade level.)

Essential Questions

- • What are the three states of matter and what are they like?
- How can matter be measured?
- How can matter change state?
- What are chemical changes?
- What are physical changes?

- What is the difference between a mixture and a solution?

Enduring Understanding

- A chemical change involves a change of one kind of matter into another kind of matter.
- Many properties of matter can be measured, including mass and volume. The metric system is used by almost every country in the world, and scientists everywhere, to make and record measurements.
- Matter can be described and classified on the basis of its properties.
- Matter commonly exists in three states-solid, liquid, and gas--and is made up of atoms and molecules that are constantly moving.
- Mixtures can be separated, and solution cannot be separated.
- Physical change includes change in size, shape, and state, with no new kinds of matter being formed. Adding or taking away heat can cause matter to change physically.

Content

- observe, infer, and predict the properties of objects
- compare and classify objects according to their properties and identify the properties of matter that make it useful
- identify matter as something that has mass and takes up space
- distinguish between physical and chemical properties of matter
- measure mass, height, width, and volume
- investigate and successfully use measuring systems
- compare the English and metric systems
- predict and observe the behavior of matter and infer the state of matter
- investigate the makeup of elements and compounds
- identify the atom as the basic unit of all matter
- explain the relationship between elements and compounds
- investigate the role energy plays in changes of state
- investigate different types of physical changes
- observe how mixtures are made and identify examples of mixtures
- identify types of physical changes
- differentiate between mixtures and solutions
- compare and distinguish between physical and chemical changes