GRADE FIVE
PHYSICAL SCIENCE: MATTER AND MIXTURES

Standard 5.P.2: The student will demonstrate an understanding of the physical properties of matter and mixtures.

5.P.2A. Conceptual Understanding: Matter is made up of particles that are too small to be seen. Even though the particles are very small, the movement and spacing of these particles determines the basic properties of matter.

Performance Indicators: Students who demonstrate this understanding can:

5.P.2A.1 Analyze and interpret data from observations and measurements of the physical properties of matter (including volume, shape, movement, and spacing of particles) to explain why matter can be classified as a solid, liquid or gas.

5.P.2B. Conceptual Understanding: A mixture is formed when two or more kinds of matter are put together. Sometimes when two or more different substances are mixed together, a new substance with different properties may be formed but the total amount (mass) of the substances is conserved. Solutions are a special type of mixture in which one substance is dissolved evenly into another substance. When the physical properties of the components in a mixture are not changed, they can be separated in different physical ways.

Performance Indicators: Students who demonstrate this understanding can:

5.P.2B.1 Obtain and communicate information to describe what happens to the properties of substances when two or more substances are mixed together.

5.P.2B.2 Analyze and interpret data to support claims that when two substances are mixed the total amount (mass) of the substances does not change.

5.P.2B.3 Develop models using observations to describe mixtures, including solutions, based on their characteristics.

5.P.2B.4 Construct explanations for how the amount of solute and the solvent determine the concentration of a solution.

5.P.2B.5 Conduct controlled scientific investigations to test how different variables (including temperature change, particle size, and stirring) affect the rate of dissolving.

5.P.2B.6 Design and test the appropriate method(s) (such as filtration, sifting, attraction to magnets, evaporation, chromatography, or floatation) for separating various mixtures.