ISE GRADE 5 SCIENCE CURRICULUM STANDARDS / LEARNING OUTCOMES

Curriculum Standards/Learning Outcomes	Teaching Strategies	Resources
Topic Two: Mixtures and Solutions **Separating Mixtures:** • A mixture combines two or more materials that retain their own properties. • A solution forms when a material dissolves in a liquid (solvent) and cannot be retrieved with a filter. • Evaporation can separate a liquid from a solid in a solution. • The solid material separated by evaporation from a solution forms distinctive patterns. **Reaching Saturation:** • Solubility is the property that substances have of dissolving in solvents. Solubility is different for different materials and can change with temperature and different solvents. • A solution is saturated when as much solid material as possible has dissolved in the liquid. • When equal volumes of two solutions made from the same ingredients are compared, the heavier one is the more concentrated solution.	• Measure solids and liquids to make mixtures and solutions. • Observe the behavior of solid materials in water. • Compare the weight of a mixture to the weight of its parts. • Organize observations on a student sheet. • Communicate observations. • Observe the behavior of a saturated solution. • Compare the quantities of two solid materials required to saturate a volume of water. • Relate the added weight of the solution to the dissolved material in the saturated solution. • Compare the solubility of materials in water. • Communicate observations.	• FOSS Kit: Mixtures and Solutions • Library books: (see list)

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Concentration: • Concentration expresses a relationship between the amount of dissolved material and the volume of solvent. • The more material dissolved in a liquid, the more concentrated the solution. • A concentrated solution can be made more dilute by adding solvent to the solution.	• Measure volumes of solids and liquids to make solutions that differ either in amount of solid material or in amount of water. • Relate the concentrations of a solution to the amount of solid material dissolved in a volume of water. • Determine the relative concentrations of solutions.	
Fizz Quiz: • When a change results from mixing two or more materials, that change is a chemical reaction. A reaction results in anew materials. • Formation of a gas is one change that occurs in some reactions. • Formation of a precipitate occurs in some chemical reactions. • Not all chemicals react when they are mixed.	• Measure solids and liquids while conducting chemical reactions. • Compare properties of precipitates to determine their identities. • Determine all possible pairs of reactants involving a set of three chemicals.	