Performance Assessment—Units 2.1, 2.2, and 2.3

Chemical Reactions

Grade 8 Science

Overview
Students observe a chemical reaction. They record the properties and masses of reactants and products. They explain their observations.

Content Standards
Science GLE 0807.9.1 Understand that all matter is made up of atoms.
Science GLE 0807.9.3 Interpret data from an investigation to differentiate between physical and chemical changes.
Science GLE 0807.9.4 Distinguish among elements, compounds and mixtures.
Science GLE 0807.9.7 Explain the law of conservation of mass.
Science GLE 0807.Inq.2 Use appropriate tools and techniques to gather, organize, analyze, and interpret data.
Science GLE 0807.Inq.5 Communicate scientific understanding using descriptions, explanations, and models.
Learning Outcome: Compare the properties of reactants with those of products of a chemical reaction. Conduct an inquiry to compare the mass of the reactants to the mass of the products in a chemical reaction.

Materials
Reactants, beaker, test tubes and rack, balance, lab scoop

Resources
See STCMS Properties of Matter, Lesson 26, for a complete description of this assessment.

Assessment Rubric

Criteria	Advanced	Proficient	Below standard
Data Table	Records mass before and after the reaction to the nearest 0.1 g Change in mass is correctly calculated and expressed to the nearest 0.1 g	Records mass before and after the reaction and calculates change in mass, but some small errors are made	Some masses not recorded or change in mass not correctly calculated or there are multiple errors
Question 2	3 of the following: blue, solid, crystalline, soluble	2 correct properties	1 or no correct properties
Question 3	Describes new properties as evidence: formation of a solid product and the solution became cloudy	Describes new properties or state a new substance was formed, but not both	Does not describe a new substance with new properties or has no evidence of a chemical change
Question 4	Answers are based on data with a satisfactory explanation that uses more than three of the listed words	Answers are based on data with a satisfactory explanation that uses three or fewer of the listed words	Answers are not based on data or the explanation does not address the law of conservation of mass