High School Chemistry Chemical Reactions: Motion and Stability- Forces and Interactions	Links
Standard: Motion and Stability – Forces and Interactions HS-PS2-2: Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system. HS-PS2-6: Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.	Physical Science 2-2 Physical Science 2-6
21st Century Learning Expectations: • Hinsdale students will communicate through various means • Hinsdale students will be able to solve problems	Link for 21st Century Learning Expectations
Enduring Understandings (cross cutting concepts): • When investigating or describing a system, the boundaries and initial conditions of the system need to be defined. • Investigating or designing new systems or structures requires a detailed examination of the properties of different materials, the structures of different components, and connections of components to reveal its function and/or solve a problem.	

Learning Competencies (engineering practices)	**Essential Questions (core ideas)**
Students will be able to: (NGSS Science and Engineering practices) • Use mathematical representations of phenomena to describe explanations. • Communicate scientific and technical information (e.g. about the process of development and the design and performance of a proposed process or system) in multiple formats (including orally, graphically, textually, and mathematically).	• **Describe** how the momentum of an object can change depending on the total overall mass of the system and the interactions both within and without the system. • **Construct** an explanation of how structure, properties, and transformations of matter can be seen through the attraction and repulsion of electric charges at the atomic level.
Performance Task Sample: Momentum Thinking Problems	