CONTENT AREA/COURSE General Science Grade 2
UNIT TITLE Friction
APPROXIMATE LENGTH 2-3 weeks (one week includes 30 minute engagement, 30 minute exploration, 30 minute extension)
OVERVIEW In this unit, students will investigate friction. The relationships between friction, relative temperature, and speed of objects must be established by students through hands-on investigation. Opportunity to demonstrate/communicate these relationships to peers/teacher should also be provided. Context provided for CEPA can vary based on background knowledge/exposure of students to winter sports.

STAGE 3 – LEARNING EXPERIENCES *(Include source information when possible.)*		
REMEMBERING ● Use sticky bars to determine student ideas about friction ● Complete Four Corners to demonstrate knowledge of materials' ability to reduce/increase friction ● Visit the playground; record sources of friction ● Create a learning web on what stops motion; focus on friction and related	**UNDERSTANDING** ● Create a poster (e.g., Glogster) showing objects in motion experiencing friction/no friction ● Identify ways to slow moving objects by increasing friction ● List examples of ways to reduce harmful friction ● Create a list of everyday activities where friction plays a role	**APPLYING** ● Rub a block on various surfaces, multiple times slow, fast, softly, harder; collect data and summarize findings ● Observe what happens when a toy car is pushed on various materials ● Determine which ramp creates the most friction (e.g., paper, cardboard, aluminum foil) ● Pick up a bottle of rice with a chopstick using friction
ANALYZING ● Use an eraser on pencil markings and determine if a change in temperature occurs ● Determine if heat is produced from friction in different situations (e.g., human-based activity, mechanical activity, electrical activity, light-producing activity, non-heat producing situation) ● Provide evidence showing how wheels reduce friction between moving object and surface over which it travels	**EVALUATING** ● Read Science Net Links Gecko Feet and recommend uses for a type material that resembles the feet of gecko ● Win inclined plane marble races; choose lane with least amount of friction ● Turn and talk: why do we sand our streets in the icy conditions? ● Predict surface that will allow skater to reach target fastest; test prediction	**CREATING** ● Design an investigation to determine which material(s) cause most/least friction ● Build a bobsled using provided materials to race down a rain gutter track the fastest ● Design a bowling alley that increases the speed of a bowling ball using recycled goods ● Create a book of illustrations titled *Friction in Our Lives*