**DCI: Motion and Stability: Forces and Interactions**

**3.PS2.A: Forces and Motion**
Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object’s speed or direction of motion. (Boundary: Qualitative and conceptual, but not quantitative addition of forces are used at this level.) (3-PS2-1)

**3.PS2.B: Types of Interactions**
Objects in contact exert forces on each other. (3-PS2-1)

**Science and Engineering Practice**

**Asking Questions and Defining Problems**
Asking questions and defining problems in grades 3–5 builds from grades K–2 experiences and progresses to specifying qualitative relationships. Define a simple problem that can be solved through the development of a new or improved object or tool. (3-PS2-4)

**Planning and Carrying Out Investigations**
Planning and carrying out investigations to answer questions or test solutions to problems in grades 3–5 builds on K–2 experiences and progresses to include investigations that control variables and provide evidence to support explanations or design solutions. Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered. (3-PS2-1)

**Crosscutting Concept**

**Patterns**
Patterns of change can be used to make predictions. (3-PS2-2)

**Cause and Effect**
Cause and effect relationships are routinely identified, tested, and used to explain change. (3-PS2-3)
Cause and Effect

Cause and effect relationships are routinely identified. (3-PS2-1)