



GSE 8th Physical Science Pacing Guide

Crosscutting Concepts: Energy and Matter; Structure and Function; Cause and Effect

Topics: Gravitation, Electrical, and Magnetic Forces

7-week Instructional Segment

Anchoring Phenomenon	Standard	Instructional Segment	Disciplinary Core Ideas	Science and Engineering Practices	Instructional Notes
<p>Seeing is Believing: Invisible forces at work all around us are the driving <i>force</i> in engaging students in understanding how force fields exist between objects.</p>	<p>S8P5. a, b, c</p>	<p>Seeing is Believing</p>	<p>From <i>A Framework for K-12 Science Education</i>:</p> <p>PS2.B: TYPES OF INTERACTIONS</p> <ul style="list-style-type: none"> ● Electric and magnetic (electromagnetic) forces can be attractive or repulsive, and their sizes depend on the magnitudes of the charges, currents, or magnetic strengths involved and on the distances between the interacting objects. ● Forces that act at a distance (gravitational, electric, and magnetic) can be explained by force fields that extend through space and can be mapped by their effect on a test objects (a ball, a charged object, or a magnet, respectively). ● Two magnetic and electrically charged objects interacting at a distance exert forces on each other that can transfer energy between the interacting objects. 	<ul style="list-style-type: none"> ● Planning and carrying out investigations ● Engaging in arguments from evidence 	<p>Background Teacher Note: Use the unexpected to captivate interest and support students in understanding field forces.</p> <p>By the end of this unit, students are using the following language in their speaking and writing during EXPLAIN or ELABORATE.</p> <ul style="list-style-type: none"> ● Forces ● Gravity ● Magnetism ● Conduction ● Induction ● Friction ● Electromagnet ● Fields ● Electric force/field ● Magnetic force/field

This instructional segment will connect to Energy and Matter: Motion.