



Grade 5

3.2.5.F Physical Science: Motion and Stability: Forces and Interactions

Students who demonstrate understanding can *support an argument that the gravitational force exerted by Earth on objects is directed down.*

Clarifying Statement: “Down” is a local description of the direction that points toward the center of the spherical Earth.

Assessment Boundary: Assessment does not include mathematical representation of gravitational force.

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Engaging in Argument From Evidence Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s). <ul style="list-style-type: none"> Support an argument with evidence, data, or a model. 	Types of Interactions <ul style="list-style-type: none"> The gravitational force of Earth acting on an object near Earth’s surface pulls that object toward the planet’s center. 	Cause and Effect <ul style="list-style-type: none"> Cause and effect relationships are routinely identified and used to explain change.

Pennsylvania Context: N/A

PA Career Ready Skills: Respond to others given a sense of the others’ point of view.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.01.02.02.b: Analyze how technology is used in AFNR systems to maximize productivity.
Science, Environmental Literacy and Sustainability (NAAEE)	5-8 Strand 1.G. Drawing conclusions and developing explanations: Learners synthesize their environmental observations and findings into coherent explanations.
PA Core Standards: ELA	CC.1.2.5.B: Cite textual evidence by quoting accurately from the text to explain what the text says explicitly and make inferences. CC.1.2.5.I: Integrate information from several texts on the same topic to demonstrate understanding of that topic. CC.1.5.5.A: Engage effectively in a range of collaborative discussions on grade-level topics and texts, building on others’ ideas and expressing their own clearly.
PA Core Standards and Practices: Math	MP.3: Construct viable arguments and critique the reasoning of others.



Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Standards: Social Studies	N/A
Educational Technology (ISTE)	1.3. Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
Technology and Engineering (ITEEA)	STEL-1F: Describe the unique relationship between science and technology, and how the natural world can contribute to the human-made world to foster innovation.