1. Force & Motion

Content Area: **Science**
Course(s):
Time Period: **Full Year**
Length: **1 trimester**
Status: **Published**

General Overview, Course Description or Course Philosophy

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

How can we compare the strengths of pushes/pulls on the motion of an object?
Can I improve the speed of an object by changing part of my investigation?

CONTENT AREA STANDARDS

SCI.K-PS2-1	Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.
SCI.K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change (e.g., climate change) to define a simple problem that can be solved through the development of a new or improved object or tool.
SCI.K-PS2-2	Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.
TECH.9.4.2.CI.1	Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

LA.RL.K.1	With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how).
MA.K-12.2	Reason abstractly and quantitatively.
LA.RL.K.4	Ask and answer questions about unknown words in a text.
MA.K.MD.A.1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
MA.K.MD.A.2	Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.
LA.W.K.7	Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).

EVIDENCE OF LEARNING

Refer to the 'Formative Assessments' and 'Summative Assessments' sections.

Formative Assessments

Science workbook

Lesson assessments

Verbal assessments

Summative Assessments

Benchmark Assessments

- Multiple Choice Assessment administered at the end of each trimester (T1, T2, T3)

Alternative Assessments

- Questions for Comprehension
- Performance Tasks
- Scientific Journals/Notebooks
- Self-Assessment

RESOURCES (Instructional, Supplemental, Intervention Materials)

Mystery Science-online resource

https://mysteryscience.com/docs/new-jersey

BrainPop Jr

BrainPop

STUDENT LEARNING TARGETS

Refer to the 'Declarative Knowledge' and 'Procedural Knowledge sections.

Declarative Knowledge

Students will understand that:

- Scientists use different ways to study the world.
- Pushes and pulls can have different strengths and directions.
- Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.
- When objects touch or collide, they push on one another and can change motion.
- A bigger push or pull makes things speed up or slow down more quickly.
- A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions.

Procedural Knowledge

Students will be able to:

- Plan an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.
- Conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.

INTERDISCIPLINARY CONNECTIONS

Scientific writing

Personal Experience

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.