

Weekly Lessons/Overview and Goals:**TEKS:**

4.60 Force, motion, and energy. The student knows that energy exists in many forms and can be observed in cycles, patterns, and systems.

The student is expected to:

4.6D Design a descriptive investigation to explore the effect of force on an object such as a push or a pull, gravity, friction, or magnetism

Unit 4 Vocabulary

friction

pull

effect

gravity

magnetism

spring scale

distant

variable

constant

investigation

experiment

conclusion

data

Essential Questions:

- What forces can we observe in everyday life?
- How can we test the effect of forces on an object?
- What are some forces that can affect objects?

Monday: ADI or Counselor Lessons**Tuesday:** ADI or counselor lesson**Wednesday:** ADI - Finish**Thursday:** Quick check assessment

Students will explore how the height of a ramp affects the distance it will travel. Students will use ramps, cars and measuring tapes to design and test an investigation. This is a 1 day activity.

OR students will complete below (this is a 2 day)

Explore and Elaborate

- Students will create and conduct an experiment to learn more about forces.
- Follow [STEMScopes Explore](#)
 - Observe variety of materials (different at different tables)
 - Groups will brainstorm how to use those materials to test different forces
 - Groups will create a plan for an experiment
 - Once experiment idea has teacher approval, students will fill out Q1-4 on [Student Journal](#)
 - Carry out investigations, record data, graph data, write conclusions.
 - Groups will share what they did and what forces they tested.

Explain & Evaluate

- Review what we know about forces.
- Go through [Forces Among Us](#) (TEA Digital Book)
 - Have students take notes about each force as you read and discuss.
- [Writing in Science- Experiment Analysis](#)
 - Students will be given (4) photographs of experiments that have been set up. They will respond in their journals (complete sentences) what forces are being tested and how they know. They will also predict what the conclusion will be of that experiment.

Teacher will model the 1st one so students know what quality of work is expected (that one is not graded).

Explore & Elaborate

- Repeat [STEMScopes Explore](#)
 - Give groups a different table of materials (to test a different force)
 - Groups will repeat the process to test a new force and create a new experiment. Groups will fill out the student journal like before.
 - Present their experiment and findings to the group.

Friday: Students will be given different resources and will design an experiment that tests push, pull, gravity or friction.

****OR Students will finish from yesterday and complet below activities**

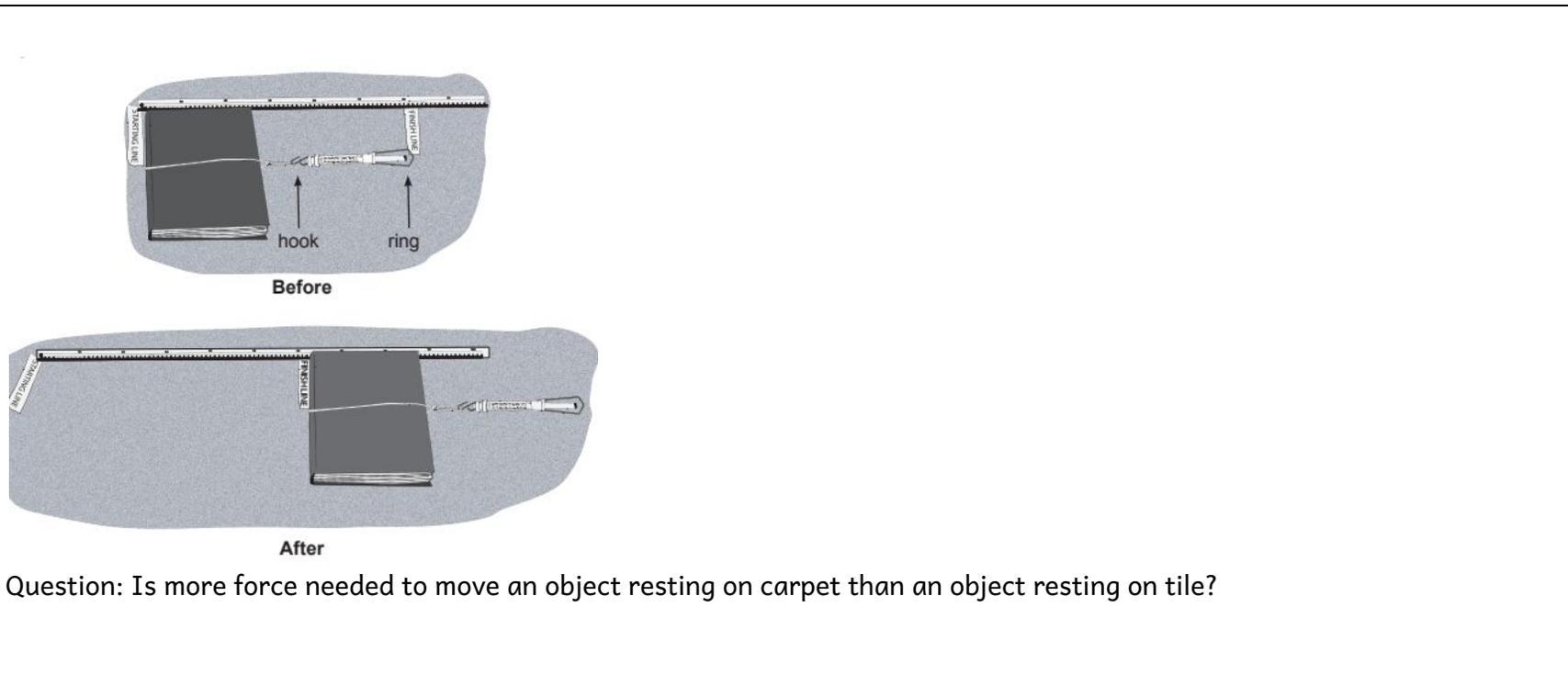
Elaborate

[Region 13 K-4 Science Academy: Force & Motion](#) - Students will conduct simple classroom experiments using the scientific method.

Suggested experiment: Experiment A [page 21](#)

Optional - [STEMScopes:virtual investigation](#)

- Guide students using virtual investigation and focus on how forces affect objects.



Question: Is more force needed to move an object resting on carpet than an object resting on tile?

Differentiation: A variety of activities (application, concrete, and kinesthetic) will be incorporated into both days to engage all learners. Kagan structures will be introduced the first week of school.