

Science 8

Non-contact Forces \Unit 3

Unit Overview

In this unit, students will embark on an interstellar journey to understand the fundamental forces that govern the cosmos. Through a series of thought-provoking questions, investigations, and model-building activities, students will explore the intricacies of electric and magnetic forces, gravitational interactions, and the energy dynamics between celestial bodies. This exploration will also extend to understanding the cyclic patterns and phenomena of the Earth-sun-moon system, the role of gravity within galaxies and the solar system, and the scale properties of objects in the solar system.

Significant concepts/content/skills

In this unit, we will answer the following big question: *What forces keep the parts of our solar system together and how can we use this knowledge to plot a telescope route through space?*

To answer this big question we will spend our time learning the following content and skills:

Concept and Procedures

- I can develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons
- I can construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.
- I can ask questions about data to determine the factors that affect the strength of electric and magnetic forces.
- I can conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.
- I can develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.



- I can analyze and interpret data to determine the scale and properties of objects in the solar system.

Communicating Reasoning

- I can explain my reasoning through multiple opportunities in lab investigations graphic organizers and CERs (Claim-Evidence-Reasoning)

Investigating Practices

- I can apply strategies to solve complex, unfamiliar problems in the real world through multiple performance-based activities and the end-of-unit project.

Assessments & Pacing

We can expect to have three assessments during this unit.

- Task 1 and 2 written/constructed response summative assessment
- Mid-unit summative performance assessment
- Task 3 and 4 summative written/constructed response summative assessment
- A culminating performance project at the end of the unit

*There will also be practice check-ins, exit tickets, and daily skills checks along the way.

We should have this unit wrapped up by the end of May.

Should I have any questions or concerns about your child's progress in this unit, I will contact you. Should you have questions or concerns, please email me at

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