

Activity 3: More on Gravitational Interactions

Name _____

Date _____

Class _____

Key Question

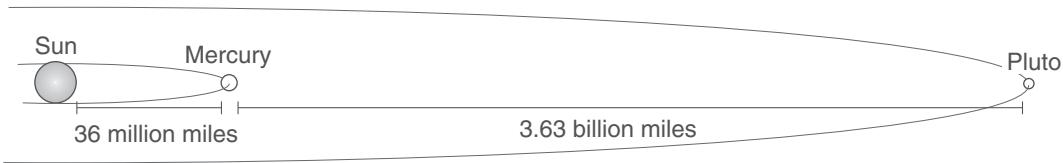
We Think

1. How do black holes attract space matter?

Explore Newton's Ideas

1. Which do you think would be stronger, the gravitational interaction between an apple and the Earth, or the gravitational interaction between an apple and the Moon?
Write your reasons.

2. Which do you think would be stronger, the gravitational interaction between the Sun and Mercury, or the gravitational interaction between the Sun and Pluto? Write your reasons.



NOTE: Drawing not to scale. Actual distances are labeled.

3. After viewing the video, write a paragraph to describe the experiment and its results.

Make Sense of the Ideas

1. Why do you observe gravitational interactions between the water bottles and the boxes of sand in the Cavendish experiment, but do not between two apples on a table?

2. A *similarity* between gravitational and magnetic interactions is that objects do not need to touch each other. What are some *differences* between these interactions? Use complete sentences to describe at least three differences.

3. How does the strength of gravitational interactions compare to the strength of magnetic interactions?

4. Scientists believe that black holes are caused by *very, very, very massive* objects in space. How do black holes attract space matter?

Our Consensus Ideas

The key question for this activity is:



What is interacting in a gravitational interaction?

1. Write your answer to the key question.

2. Write the class consensus ideas about the key question.
