

➤ Main Ideas, Key Points, Questions:

After watching the video segment, write down key points, main ideas, and big questions.

➤ Objective(s):

- *Relate the force of gravity to the masses of the objects involved in the gravitational interaction and the distance between their centers of mass.*
- *Understand how changing the mass of one or both objects, or the distance between the objects, affects the force of gravity between them.*

➤ Notes:

During the video segment, use words, phrases, or drawings to take notes.

➤ Summary:

After watching the video segment, write at least three sentences explaining what you learned. You may ask yourself: "If I was going to explain this to someone else, what would I say?"

Answer the following.

1. What must an object have in order to exert a gravitational field?

2. The force of gravity between two objects depends on what?

3. As the distance between two objects changes, how does the gravitational force between them change?

4. Write the equation for Newton's law of universal gravitation:

$$F_g = \text{—————}$$

5. What is the relationship between the force of gravity and the mass of the objects involved?

6. What is the relationship between the force of gravity and the distance between the two objects involved?

Answer the following.

7. What is the acceleration due to gravity near the earth's surface?

8. Why do a hammer and a feather fall at the same rate on the moon but not on the earth?

9. Define terminal velocity in your own words, and draw the free-body diagram for an object when it is at terminal velocity.

10. How does surface area affect the amount of air resistance an object experiences?
