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Unit 3C

Newton's Second Law Part 1

Note-Taking Guide and Questions to Consider

Name:

Date:

Main Ideas, Key Points, Questions:

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

Objective(s):

- *Understand the difference between field forces and contact forces.*
- *Use Newton's second law to calculate an object's acceleration when it experiences a net force.*

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?"

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Answer the following.

1. What kind of force is the force of gravity? Do objects have to be touching in order for the force of gravity to be exerted?

   _____

   _____

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

   $$F_G = \rule{3cm}{0.4pt}$$

3. As the distance between two objects increases, how does the force of gravity between them decrease?

   _____

   _____

4. What is the acceleration due to gravity on earth?

   _____

5. Does an object's mass or weight change when it goes to another planet? Explain why.

   _____

   _____

   _____

6. Force is measured in what unit? What is this unit equal to in other units?

   _____

7. Define a contact force in your own words.

   _____

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Answer the following.

8. What are the five types of contact forces?

   _____

9. Write the equation for Newton's second law:

$$F_{net} = \underline{\hspace{3cm}}$$

10. How are the direction of the net force on an object and the direction of the object's acceleration related?

   _____

   _____

11. What is the equation for the force of gravity on an object?

$$F_G = \underline{\hspace{3cm}}$$

12. If two forces act in opposite directions on an object, how do you find the net force acting on the object?

   _____

   _____