

Name: _____

Date: _____

Reviewing Force and Velocity: Green

Part 1: Predict

1. An object is moving diagonally (down and to the left). You want it to stop moving. In what direction (or directions) should you exert a force to get the object to stop?
 - a. Force direction(s): _____
 - b. Explain your answer: _____

Part 1: Test

1. There are four missions in this part and each mission has two tasks. Select **2.5 Green Mission 1** from the *Force and Motion* Sim menu and read the mission prompt that describes both tasks.
 - **Task 1** asks you to use **multiple forces** to achieve a goal.
 - **Task 2** asks you to achieve the same goal, but using **a single force**.
2. Press RUN and attempt Task 1.
 - Observe the object. Did it reach the target?
 - If yes, press RESET and go on to Task 2.
 - If not, press RESET and try again with forces of different strengths and directions.
3. For Task 2, press RUN and PREPARE FORCE.
4. Set up the single force and test your results.
 - Use the Force panel to set the force directions and strengths.
 - Press EXERT FORCE.
 - Observe the object. Did it reach the target?
 - If yes, go on to the next mission. After completing Mission 4, respond to **Part 1: Apply**.
 - If no, press RESET and try again using different force strengths and directions.

Part 1: Apply

1. An object is moving to the right. Instead, you want it to move up (but not in a diagonal). In what direction (or directions) should you exert a force to get the object to move upward?
 - a. Force direction(s): _____
 - b. Explain your answer: _____

2. Go on to Part 2.

Reviewing Force and Velocity: Green (continued)

Part 2: Test

1. Complete four more missions: **2.5 Green Mission 5**, **2.5 Green Mission 6**, **2.5 Green Mission 7**, and **2.5 Green Mission 8**.
2. Select **Mission 5** and read the prompt.
3. Press RUN.
 - Use the Force panel to get the object moving. Did it reach the target without touching the walls?
 - If yes, go on to the next mission.
 - If not, press RESET and try again with forces of different strengths and directions.
4. After Mission 8, respond to **Part 2: Explain**.

Part 2: Explain

Two objects are moving downward at a speed of 3 cm/s. Object A has a mass of 2 kg and Object B has a mass of 1 kg. You want both objects to move to the left at a speed of 3 cm/s.

(**Hint:** If you get stuck or want to check your ideas, test them in the Sim.)

1. In what direction (or directions) should you exert the forces that will make the desired change?

force direction(s): _____

2. Describe what strength force or forces would be needed to cause the desired velocity change: Make Object A and Object B move to the left at 3 cm/s.

3. After you finish, answer the reflection questions on your Amplify Science screen.