

Name: _____

Date: _____

Reviewing Force and Velocity: Purple

Part 1: Explore

1. Select **2.5 Purple Explore** from the *Force and Motion* Sim menu.
2. Tap on Object A and record its initial velocity:
direction: _____ speed: _____ cm/s
3. Press RUN and then press PREPARE FORCE.
4. Set up and test the force that will cause each desired velocity change (a–d) listed in the data table below. Each velocity change can use **only one force**.
 - Use the Force panel to set up the force direction and force strength.
 - Press EXERT FORCE.
 - Observe the object's motion. Did you cause the desired change?
(**Hint:** Press ANALYZE for data about velocity. Use the scrubber to view data about force strength.)
 - If yes, record the Force Direction and Force Strength and go on to the next desired change.
 - If no, press RESET and try again with a different direction or strength.

Desired Velocity Change	Force Direction	Force Strength
a. speed up to 7 cm/s right		
b. speed up to 10 cm/s right		
c. slow down to 0 cm/s right (stop)		
d. reverse direction to 2 cm/s left		

5. After you complete Part 1, go on to Part 2.

Reviewing Force and Velocity: Purple (continued)

Part 2: Predict

1. If you exert the same strength force on two objects, one with a greater mass and the other with less mass, which object will reach the target first?

<input type="radio"/>	a. the object with a greater mass	<input type="radio"/>	b. the object with less mass	<input type="radio"/>	c. both objects at the same time
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2. What should you do to make sure that both objects reach the target at the same time?

Part 2: Test

1. Complete three missions: **2.5 Purple Mission 1**, **2.5 Purple Mission 2**, and **2.5 Purple Mission 3**.
2. Select a mission and read the prompt.
3. Press RUN and then press PREPARE FORCE.
4. Set up the forces and test your results.
 - Use the Force panel to set the force direction and force strength for each object (A and B).
 - Press EXERT FORCE.
 - Observe the objects. Did they reach the targets at the same time?
(**Hint:** Press ANALYZE and use the scrubber to view data about force strength.)
 - If yes, record the Force Direction and Force Strength and move on to the next mission.
 - If no, press RESET and try again with a different direction or strength.

Mission	Object A: Force Direction/Strength	Object B: Force Direction/Strength
2.5 Purple Mission 1		
2.5 Purple Mission 2		
2.5 Purple Mission 3		

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