

Name _____ Date _____

Student Rocket

Purpose: To calculate the force on a student on a rocket powered cart.

Procedure:

Start a computer and open the Physics 9 folder, then the Videos folder, then Unit 3. Start the movie “**student_riding_rocket**”. Watch the whole video at least once.

Use the video to collect data.

What is velocity of the student on the cart before the rocket starts? (This is not a trick question.)

Figure out a way to determine the acceleration of the student and cart as it gets to the end of the video. Hint – consider how we found time in previous videos. **You cannot use $v=d/t$ to correctly calculate velocity for this video.**

Use the mass of the student and cart given in the video to determine the force from the rocket.

Data:

Calculations:

Summary:

1. What is Newton's 2nd Law (both math and word form)?
2. How did you find the acceleration?
3. How did you find the velocity to find the acceleration?
4. How did you find the net force on the student & cart?
5. What are the source and sizes of error?