

Quick View

Calculate the average velocity of a solid-fuel rocket.

Materials

- Completed rocket
- Tape measure
- Altimeter
- Stopwatch
- "Velocity Data Sheet"
- Pencil
- Launcher



Procedure

1 Hypothesize how much the recovery system reduces the rocket's average descending velocity compared to its average ascending velocity. Record this hypothesis on the data sheet.

2 Stand 150 meters from the launcher with an altimeter.

3 When the rocket is launched, point the altimeter at the rocket and pull the trigger. When the rocket reaches its apogee, release the trigger. Record the altitude measurement given by the altimeter.

4 Use the stopwatch to time the flight of the rocket from takeoff to apogee. Also measure the time of descent of the rocket.

5 Record the apogee height and flight times on the data sheet.

6 Calculate the average velocity of the ascending rocket.

7 Calculate the average velocity of the descending rocket.

8 Complete the "Velocity Data Sheet."

Velocity Data Sheet

Hypothesize how much the recovery system reduces the rocket's average descending velocity compared to its average ascending velocity. Give your hypothesis in terms of a percentage.

Complete the table with the appropriate information.

Test Number	Apogee Height	Time of Ascent	Average Ascent Velocity	Time of Descent	Average Descent Velocity

What was the average percent decrease between the average ascending velocity and the average descending velocity?