Supporting Resource1

Balloon Vehicles

Purpose: Make a vehicle using the materials provided. This vehicle should do the following: Use wind power from the balloon to supply a force to move the vehicle travel in a straight line

Materials:

Wheels (provided by the student) Stop watch

Glue Measuring tape

Straws Triple beam balance

Manilla folders

Single hole punch

Balloons

Instructions:

- Build your balloon-powered car using the template provided

- Decorate your cart to make it identifiable as yours

-With a partner make five runs with your car. Measure the distance it traveled and the time it took to travel each time.

- Record the distance traveled and the time of travel in a data chart.

- Determine the velocity for each run and then determine the average velocity for your balloon vehicle.

- Determine the acceleration for each run using 0 m/s as your initial speed and the velocity for each run as your final speed, then determine the average velocity.

- Determine the force provided by the balloon for each run, then determine the average force provided.

Data: Fill in the chart below:

Run Mass (kg) Distance (m) Time (s) Velocity (m/s) Acceleration (m/s2) Force (N)

1

2

3

4

5

Analysis:

1. What was the average velocity of your car?

2. What was the average acceleration of your car?

3. What was the average force provided by the balloon?