Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Material Write Up for Wind-Powered Vehicle Lab**

**Build**

**Distance: 10 points**

* You will earn 1 point for every meter your car travels, up to 10 meters (the back of the room).
* Your car must travel in a straight line for the distance to count.  Any distance to the sides will not count.

**Reliability: 5 points**

* Your car must be able to consistently travel down the track when it is time to collect data.
* You will get all 5 points if we can collect data on the first official run.  You will lose 1 point for every additional attempt necessary to get complete data.

**Analysis**

1. List the materials used in the production of your WPV:

a.­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Complete a sketch of your WPV and label where on your WPV your team

used each material:

1. List what each material does on your WPV:
2. At least two examples of what other materials you could have used, if you had more time/resources:

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Windy Cars

1. Data entry:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Distance (m) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Time (sec) |  |  |  |  |  |  |  |  |  |  |
| Velocity (m/s)  (v = ∆d/∆t) | From 0 to 1 meter | From 1 to 2 meter | From 2 to 3 meter | From 3 to 4 meter | From 4 to 5 meter | From 5 to 6 meter | From 6 to 7 meter | From 7 to 8 meter | From 8 to 9 meter | From 9 to 10 meter |

2. At what meter marking did the car start to slow down?

3. From your 1st velocity entry to the meter marking before the car slowed down the car is accelerating. What is the rate of acceleration (a = ∆v/∆t)\*?

4. From the meter entry that your car decreased in velocity to the end, your cars acceleration is decreasing, what is that rate of acceleration (a = ∆v/∆t)\*?

\*∆v = vf – vi and ∆t = tf - ti