Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Learning Objective: Students will calculate speed, distance & time. Students will use diagrams, graphs and data tables to explain motion of objects.

**Part 1: The Problem**

Bob wants to go from CMS to TJ Maxx to buy a suit. What time will Bob have to leave CMS to arrive at TJ Maxx by opening time (10:00 am). He only has use of his tiny car. Conduct research and design an investigation to help Bob get to TJ MAXX.

Your group will have to find:

1. Distance from CMS to TJ MAXX (miles)
2. The average speed of Bob’s car. (feet per second)
3. How long it will take Bob to get to TJ Maxx. (minutes)

**Part 2: Collecting Data**

Data Table 1: Distance from CMS to TJ MAXX

|  |  |
| --- | --- |
| **Distance (miles)** | **Research Source Used** |
|  |  |

Procedure: Average speed of Bob’s tiny car. List the steps you will follow and tools you will use to find out how fast Bob’s Tiny car can go.

|  |
| --- |
| 1. |
| 2. |
| 3. |
| 4. |
| 5. |
| 6. |

Data Table 2: Average Speed of Bob’s tiny car. (feet per second) Only use the columns you need to in the data table. Label the columns!

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Data Table 3: How long will it take for BOB to get to TJ MAXX?

|  |
| --- |
| Calculate the **average speed** of the tiny car.  (ft/sec) |
| Convert the **distance** from Cedar Middle School to TJ Maxx from miles to the units used in your average speed.  5,280 ft = 1 mile |
| http://s3.amazonaws.com/engrade-myfiles/4073857971585652/d-s-t_triangle.jpgCalculate the **time** it will take Bob to get from CMS to TJ Maxx.] |

**Part 3: Applying Newton’s 3 Laws of Motion:**

Explain how each Law of Motion was used or applied in this project.

#1 Law of Inertia:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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#2 Law of Acceleration:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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#3 Law of Action & Reaction:

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