**How fast am I?**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Partner 1: \_\_\_\_\_\_\_\_\_\_\_\_\_

Partner 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Partner 3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Goals:**

* To describe motion through data, calculations and graphs
* To understand the connection between the data collected and the graph produced
* To make the connections between the slope of a graph and the velocity and acceleration of a 2 different motion activities
* To show how distance, time, velocity and acceleration are related
* ***As this is your last MYP assignment Science 10 please use this opportunity to demonstrate what you have learned this last school year.***

**Minimum Requirements:**

Group of 3-4 students



A piece of equipment with wheels + helmet



Distance of 40m including 8 intervals



A ***motion variable*** you wish to explore. For example:

* skateboard up a hill 40m vs. rollerblade up a hill 40 m (***in this case the variable is the mode of transportation***)
* skateboard up a 64 m hill vs. skateboard down that same 64 m hill (***in this case the variable is the path taken***)

Determine distance, displacement, time, speed and velocity for each motion variable

* in data table and graph format (**4 data tables and 4 graphs**)

When describing **trends** in the data/graphs: Use the following **vocabulary** – distance, displacement, increasing, decreasing or constant velocity, speed, positive, negative or zero acceleration.



Refer to the “***My Investigation Report***” sheet for details about the format and contents of the final report.

Planning day #1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Planning day #2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lab day #1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lab day #2 (if needed): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Data Analysis day: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Report due: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Criterion B: Inquiring and Designing** | | | | |
| **(0)** | **Beginning (1-2)** | **Developing (3-4)** | **Accomplished (5-6)** | **Exemplary (7-8)** |
| *I have not achieved a standard described by any of the descriptors to the right*. | *I am able to:*  **state** a problem or question to be tested by a scientific investigation  **outline** a testable hypothesis  **outline** the variables  **design** a method, **with limited success.** | *I am able to:*  **outline** a problem or question to be tested by a scientific investigation  **formulate** a testable hypothesis **using scientific reasoning**  **outline** how to manipulate the variables, and **outline** how **relevant data** will be collected  design a **safe method** in which he or she **selects materials and equipment**. | *I am able to:*  **describe** a problem or question to be tested by a scientific investigation  **formulate and explain** a testable hypothesis **using scientific reasoning**  **describe** how to manipulate the variables, and **describe** how **sufficient, relevant data** will be collected  design a **complete and safe method** in which I select **appropriate materials and equipment**. | *I am able to:*  **explain** a problem or question to be tested by a scientific investigation  **formulate and explain** a testable hypothesis **using correct scientific reasoning**  **explain** how to manipulate the variables, and **explain** how **sufficient, relevant data** will be collected  **design** a **logical, complete and safe method** in which I **select appropriate materials and equipment**. |
| **Criterion C: Processing and Evaluating** | | | | |
| **(0)** | **Beginning (1-2)** | **Developing (3-4)** | **Accomplished (5-6)** | **Exemplary (7-8)** |
| *I have not achieved a standard described by any of the descriptors to the right*. | *I am able to:*  **collect and present** data in numerical and/or visual forms  **interpret** data  **state** the validity of a hypothesis based on the outcome of a scientific investigation  **state** the validity of the method based on the outcome of a scientific investigation  **state** improvements or extensions to the method. | *I am able to:*  **correctly collect and present** data in numerical and/or visual forms  **accurately interpret** data and **explain** results  **outline** the validity of a hypothesis based on the outcome of a scientific investigation  **outline** the validity of the method based on the outcome of a scientific investigation  **outline** improvements or extensions to the method that would benefit the scientific investigation. | *I am able to:*  **correctly collect, organize and present** data in numerical and/or visual forms  **accurately interpret** data and **explain** results **using scientific reasoning**  **discuss** the validity of a hypothesis based on the outcome of a scientific investigation  **discuss** the validity of the method based on the outcome of a scientific investigation  **describe** improvements or extensions to the method that would benefit the scientific investigation. | *I am able to:*  **correctly collect, organize, transform and present** data in numerical and/ or visual forms  **accurately interpret** data and **explain** results **using correct scientific reasoning**  **evaluate** the validity of a hypothesis based on the outcome of a scientific investigation  **evaluate** the validity of the method based on the outcome of a scientific investigation  **explain** improvements or extensions to the method that would benefit the scientific investigation. |