

## Grading Rubric Lab 1 Worksheet - Introduction to Measurement (24 Points)

See the grading rubric at the end of the instructions in the Lab Manual for details on how you will be graded.

### Basic Sensors:

1. Which Basic Sensor did you try measuring with? What does this sensor measure?

**2 Points** - One of the sensors is identified AND a reasonable description of what it measures is present.

**1 Point** - One of the sensors is identified BUT the description of what it measures is either not present or makes no sense.

**0 Points** - The sensor is not identified AND the description of what it measures is either not present or makes no sense.

2. What units does the sensor measure in?

**1 Point** - The appropriate unit is stated OR for the Light and Microphone sensors, there is a reasonable explanation of how to interpret the graph readings is present.

**0 Points** - No unit is stated or the explanation of how to interpret the graph readings makes no sense.

3. What could the sensor be useful for measuring?

**2 Points** - A reasonable application is given.

**1 Point** - An application is given but does not make sense.

**0 Points** - No attempt was made.

4. Insert a screenshot of the collected data. Be sure it is zoomed in appropriately.

**3 Points** - A professional looking screenshot is included AND zoomed in to show all the details.

**2 Points** - There is a professional looking screenshot AND an attempt was made to zoom in but the zooming is insufficient to show all the details.

**1 Point** - There is a professional looking screenshot but no attempt was made to zoom in to show details.

**0 Points** - A screenshot is not included OR the screenshot is taken of the computer screen with a phone camera or similar.

### Force Sensor:

5. Insert a screenshot of the collected data. Be sure it is zoomed in appropriately.

**3 Points** - A professional looking screenshot is included AND zoomed in to show details.

**2 Points** - There is a professional looking screenshot AND an attempt was made to zoom in but the zooming is insufficient to show the necessary details.

**1 Point** - There is a professional looking screenshot but no attempt was made to zoom in to show details.

**0 Points** - A screenshot is not included OR the screenshot is taken of the computer screen with a phone camera or similar.

6. What does the force sensor measure?

**2 Points** - There is a reasonable explanation of what the force sensor measures.

**1 Point** - An attempt was made to explain what the force sensor measures but the explanation is inaccurate.

**0 Points** - No attempt was made.

Wheel Sensor:

7. What does the wheel sensor measure?

**2 Points** - There is a reasonable explanation of what the wheel sensor measures.

**1 Point** - An attempt was made to explain what the wheel sensor measures but the explanation is inaccurate.

**0 Points** - No attempt was made.

8. Insert a screenshot of the collected data. Be sure it is highlighted appropriately.

**2 Points** - A professional looking screenshot is included AND a region of interest is highlighted using the data tool.

**1 Point** - There is a professional looking screenshot but no attempt was made to highlight a region of interest.

**0 Points** - A screenshot is not included OR the screenshot is taken of the computer screen with a phone camera or similar.

The Data Tool:

9. What information do the data tool items -  $\mu$ ,  $\sigma$ , a, and s - tell you? (Hint: a is not acceleration and  $\mu$  is not friction.)

**4 Points** - All four items are identified correctly.

**3 Points** - Three items are identified correctly.

**2 Points** - Two items are identified correctly.

**1 Point** - One item is identified correctly.

**0 Points** - No items are identified correctly.

Determining Average Velocity:

10. Insert a screenshot of your average velocity data. What is the average velocity in m/s?

**3 Points** - A professional looking screenshot is included AND zoomed in appropriately.

**2 Points** - There is a professional looking screenshot AND an attempt was made to zoom in but the zooming is insufficient to show the necessary details.

**1 Point** - There is a professional looking screenshot but no attempt was made to zoom in to show details.

**0 Points** - A screenshot is not included OR the screenshot is taken of the computer screen with a phone camera or similar.