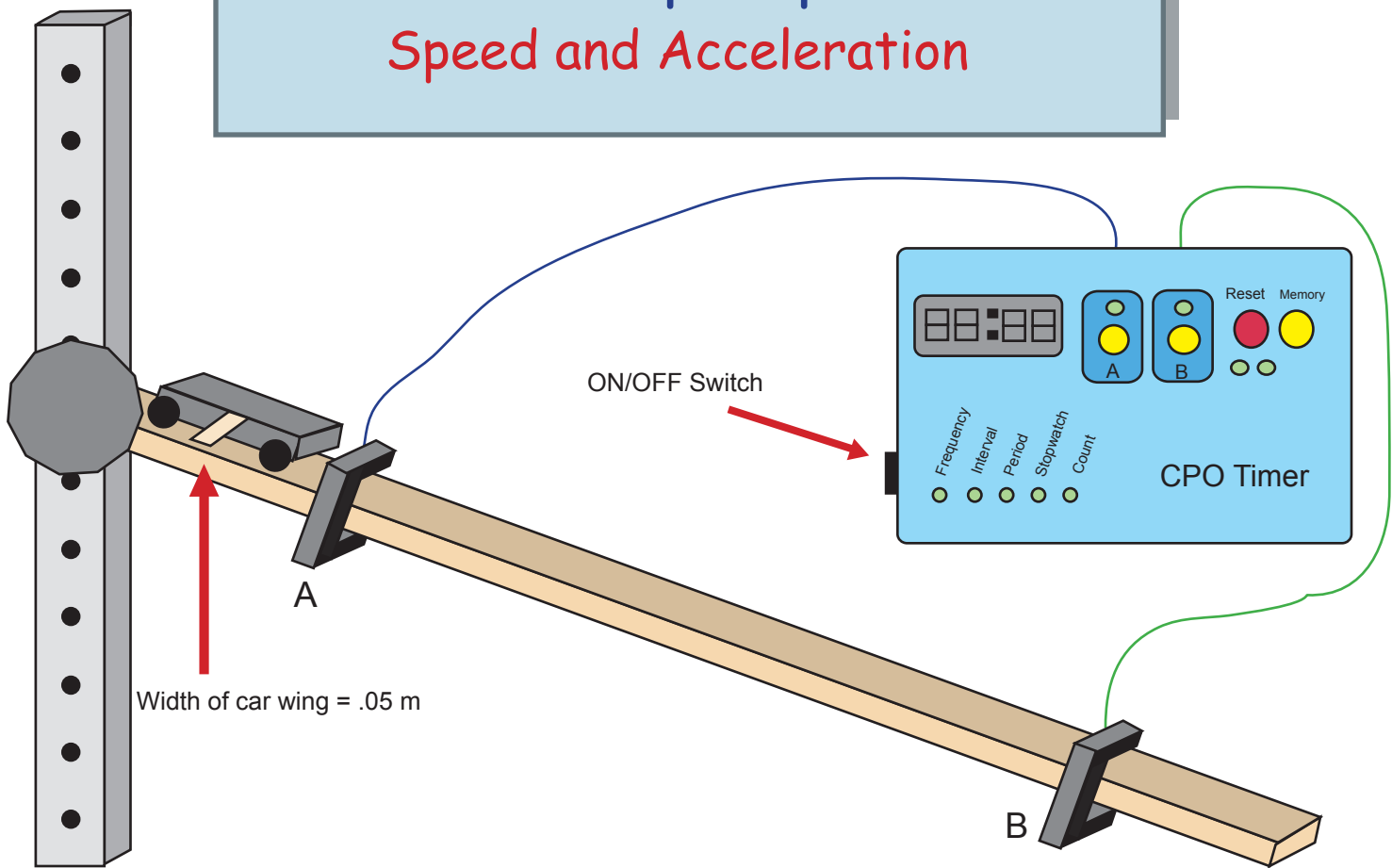


Car and Ramp Experiment

Speed and Acceleration



Instructions:

- 1) Turn on CPO Timer by the switch on the left.
- 2) Hold the car at the top of the ramp.
- 3) Set the **green** light on the CPO Timer to "Interval."
- 4) Press the **red** Reset Button.
- 5) Let the car go!! When the car reaches the bottom, the data from the gates gets stored in the CPO Timer.
- 6) Using the CPO Timer, write down the time it took for the wing of the car to go through the top Gate A by lighting only the A button. Record this value as "Time A". Do the same for Gate B by lighting only the B button. Record as "Time B".
- 7) Now write down the time it took for the wing of the car to get from Gate A to Gate B by lighting both the A and B buttons. Record this as "Time AB"
- 8) Calculate the **Acceleration** and **Speeds** of the car using the equations below.

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{Speed A} = \frac{.05 \text{ m (width of car wing)}}{\text{Time A (seconds)}} \quad \text{Speed B} = \frac{.05 \text{ m (width of car wing)}}{\text{Time B (seconds)}}$$

$$\text{Acceleration} = \frac{\text{Change in Speed}}{\text{Time Taken}}$$

$$\text{Acceleration AB} = \frac{\text{Speed B} - \text{Speed A}}{\text{Time AB (seconds)}}$$