Toy Car Lab A

Purpose: To identify trends in graphs representing forward motion in relation to a starting and ending point.

Materials: Toy car, Tape, Meter Stick, Timer, Lab Sheet

Steps:
1. Place tape exactly 10 cm apart starting at 0 cm until you hit 100 cm.
2. Write the distance at each tape, marking the first piece at 0 as "Start".
3. Place your car at start and time it as it goes to 10 cm and record the time below.
4. Place the car back at start and time it as it goes to 20 cm and record the time.
5. Repeat until the car has reached 100 cm.

Table:

Dist. (cm)	10	20	30	40	50	60	70	80	90
Time (s)									
Speed									

Graph:

In your notebook, graph the data from the table. Be sure to label both axis and give the graph a title.

Conclusion Questions:
1. Calculate speed for each checkpoint, draw a conclusion about what happened to the speed as the car moved along the 100cm?
2. What does the slope of a distance vs. time graph represent?
3. If the graph gives a linear representation what type of motion is being shown?
4. What are the units for the slope of a distance vs. time graph?

Toy Car Lab B

Purpose: To identify trends in graphs representing forward and backwards motion in relation to a starting and ending point.

Materials: Toy car 1 and 2, Tape, Meter Stick, Timer , Lab Sheet

Steps:
1. Place tape exactly 10 cm apart starting at 0 cm until you hit 100 cm.
2. Write the distance at each tape, marking the first piece at 0 as "Start".
3. Place your car at start and time it as it goes to 10 cm and record the time below.
4. Place the car back at start and time it as it goes to 20 cm and record the time.
5. Repeat until the car has reached 100 cm.
6. Place your car at 100 cm and time it as it goes to 90 cm and record the time below.
7. Place the car back at 100 cm and time it as it goes to 80 cm and record the time.
8. Repeat until the car has reached start.

Table:

Dist. (cm)	10	20	30	40	50	60	70	80	90	100
Time Forward (s)										
Dist. (cm)	90	80	70	60	50	40	30	20	10	0
Time Backward (s)										

Graph:
In your notebook, graph the data from the table. Be sure to label both axis and give the graph a title.

Conclusion Questions:
1. Compare what occurred during the first 10 seconds to the last 10 seconds of each direction (forward and backwards).
2. What can the steepness of a line's slope tell you about it's motion compared to another line's less steep slope?