Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Table Group \_\_\_\_ Per \_\_

**Graphing Your Toy Car**

**You have created a new product – a dead 9 volt battery toy car! To advertise your car, marketers want to know about its speed as it travels down a 3 meter track at a 3 degree slope. Unfortunately, your car can only be tested on a 1.5 m surface (your desk…). But, using the magic of graphing, you can predict how the car will move on a 3 meter track. Be prepared to support your claim about your toy car’s top speed with evidence from the graph. Your graph and calculations will need to be clear enough to create an advertisement that shows your car’s top speed!**

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Fill in the data chart for your car. Use the graph to predict the missing

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| Distance (cm) | 0 cm | 40 cm | 80 cm | 120 cm | 160 cm | 200 cm (predict) | 240 cm (predict) | 300 cm (predict) |
| Time  (s) |  |  |  |  |  |  |  |  |
| Avg. Speed (cm/s) |  |  |  |  |  |  |  |  |

**Answer these questions based on your data:**

1. Connect the points on your graph. Describe the line represented by the connected points.
2. Describe how you decided where to position your predicted points on your graph.
3. On a distance vs. time graph, a straight line shows that speed is CONSTANT. What is meant by CONSTANT speed?
4. On a distance vs. time graph, a curved line show that ACCELERATION is occurring. What is meant by ACCELERATION?
5. Based on your graph, was your car getting faster (ACCELERATING) or getting slower (DECELERATING) as it moved along the desk? How do you know?
6. Use the long track to time your car for 200 cm, 240 cm and 300 cm. Add the actual points to **the graph in a different color than the predicted points**.
7. How accurate was your prediction? Describe what you think might have caused differences between the actual graph and your predictions.