Constant Motion Worksheet

**Materials**: Constant motion car with batteries, meter stick or measuring tape, stopwatch, pencil

**Group roles**: (record names)

Reader/recorder (reads instructions and records data): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Driver (operates car, measures distance in group of 3): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Timer (operates stopwatch): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Measurer (measures distance in group of 4): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Activity 1.** Measure speed

1. The speed of a moving object is the ratio of distance travelled to time. Plan a way to measure the speed of the constant motion car. Describe and/or sketch your plan here:
2. Carry out your plan; measure the speed of your car. Do not forget to use units!

Speed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate how far your car will travel in 10 seconds. Show your work.
2. Calculate how far your car will travel in 3 minutes. Show your work.
3. Draw a graph representing the car’s motion using the grid on the next page. Remember to provide a title and units with the picture.
4. What is the slope of your graph? What does this slope have to do with the car’s motion?

**Activity 2.** Motion without batteries

1. Place the car on a table or floor and turn it on. What do you observe? (Stop the car and turn it off).
2. Describe your observations in terms of Cause and Effect. What is the cause? What is the effect?

1. In what direction did the car move?
2. Would your answer about direction be meaningful to someone who is not in the room? Can you give an answer that would be meaningful to someone not in the room?
3. Remove the batteries from the car. Place the car on a table or the floor and turn it on. What do you observe?
4. Pick up the car and move it around in the air. Do the lights turn on?
5. Place the car on a table or the floor and push it. What do you observe?
6. Describe your observations in terms of Cause and Effect. What is the cause? What is the effect?
7. What provides energy to move the car when it has batteries in it?

1. What provides energy to move the car when it does not have batteries in it?

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