LESSON 20

EXPLORING ACCELERATION LAB EXTENSION

This is a lab extension, meaning you're going to use the information you gathered from the main lesson 20 lab and build on that with further trials. You'll be continuing to explore acceleration as you practice your graphing skills.

Supplies

- Toy car
- Stopwatch
- Tape measure (metric preferred)
- Ramp (cardboard or wooden board)
- Sharpie

Instructions

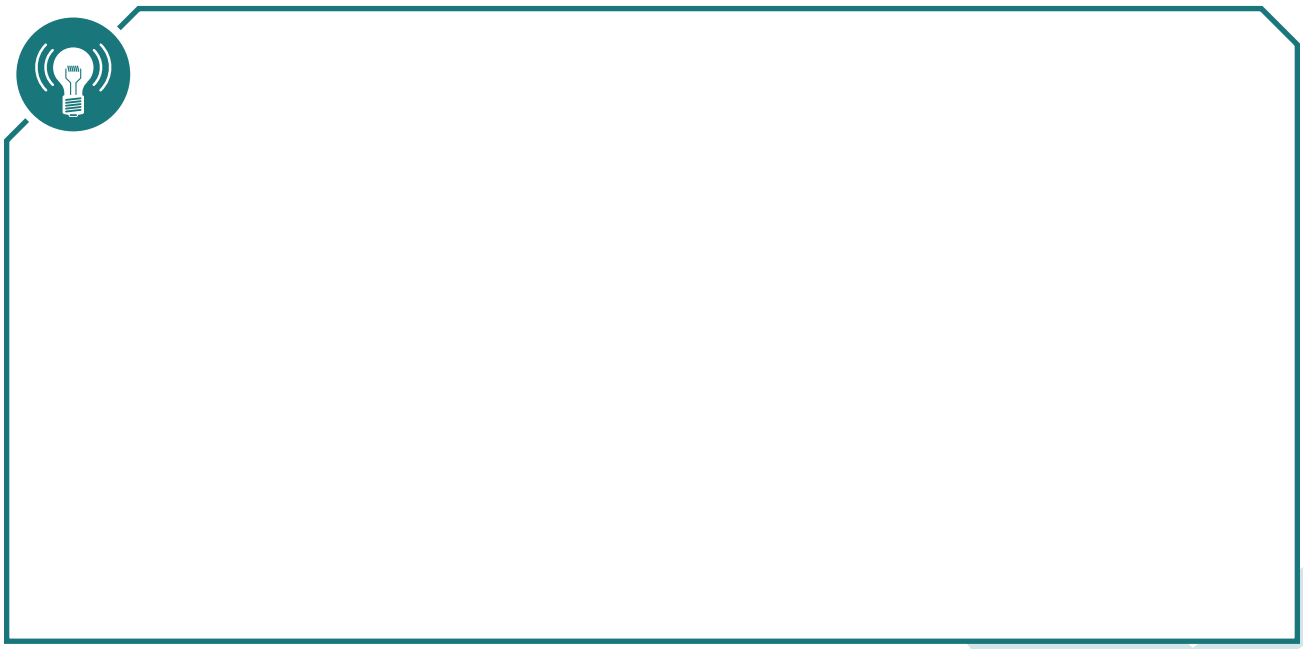
1. Hold the toy at the top of the ramp you created for the main part of the lab. Let go of the toy, but this time, don't start the stopwatch until the toy hits the bottom of the ramp. Stop the stopwatch as soon as the toy stops moving along the level ground. Record the time in the data table.
2. Repeat this two more times, but start the car at the different tape marks on the ramp and record your data.

Data Table

Trial	Time
#1 (Top of ramp)	
#2 (High mark)	
#3 (Low mark)	

Calculations

1. Calculate the acceleration for each trial. Use the final velocity from the first part of your lab as your new initial velocity. Remember that the toy came to a stop.



2. Graph the velocities of all three trials for the first part of the lab. Graph all lines on the same graph, but use different colors for each trial. Create a legend to show which color represents which trial.
3. Graph the accelerations of all three trials for the first part of the lab on a separate graph. Graph them all on the same graph and use the same legend for the three trials.
4. Graph the accelerations of all three trials for the second part of the lab on a separate graph. Graph them all on the same graph and use the same legend for the three trials.