Ramp Angle Lab

How does ramp height change a cart’s run?

Adult setup

Grades 2–5 | Plan 20–30 minutes together. Start with the animated lesson.

Gather

Toy car, stiff cardboard, 1–3 books, tape, ruler or measuring tape, soft towel.

Set up

Set the cardboard on one book with the low end touching the floor. Tape the ramp in place and mark the same release line near the top. Put a towel at the far end of the lane.

Use a clear floor lane. Secure the ramp and keep the stack low. Retrieve the car only when it stops.

Try it

1. Predict which ramp height will send the car farther past the bottom.
2. Let the same car roll from the mark without a push. Measure from the bottom of the ramp to where the front wheels stop. Repeat three times.
3. Raise the ramp by adding one book. Keep the ramp, car and floor surface the same. Repeat three times.
4. Compare the runs. What changed? What evidence supports your answer?

Try another idea

Test a third height and graph one typical result for each height.

Record your evidence

Prediction: _____

Test A, trials 1–3: _____ Test B, trials 1–3: _____

My evidence shows: _____