



Weight and Distance



THIS TRAIL MIX INCLUDES A COMBINATION OF: science, math, engineering, and technology skills. Students will build a ramp and release cars of different weights. They will measure the distance each car travels and graph the results to determine the effect of weight on distance.

DESTINATION

- Determine the relationship of weight and distance
- Make observations and collect data
- Develop evidence, claims, and reasoning
- Calculate averages
- Use digital tools to represent and analyze data

GEAR

- [“View the World Through a STEM Lens with Tom Traferatops and Friends”](#) book
- [Car and Truck Picture](#)
- [How Does Weight Affect Distance?](#)
- For each group of students: measuring tape, materials to build a ramp such as books, cardboard, wood, toy car, washers, rubber bands or tape
- [Create a Graph](#) or graph paper

TRAIL M.A.P.

Motivation: Revisit the section of the Tom Traferatops [book](#) where the dinosaurs are wondering if size and weight makes a difference in how fast something goes down the slide. Ask students what they think. Build an example ramp with books and cardboard or wood. Ask students: *What will happen when I put a toy car on the ramp?* They should respond that the car will go down the ramp. Put the car about halfway up the ramp and release to verify student responses. Depending on knowledge level, you can ask students what causes the car to go down the ramp (gravity). Show students the picture of the [car and truck](#). Ask: *What are some of the differences between the truck and the car?* (height, length, weight) Ask students: *If we could put a truck on the ramp, would there be a difference in the distance it would travel compared to the car?* Discuss all answers. Explain to students that they will be investigating if weight will make a difference on the distance an object travels.

Activity: Give each group of students a measuring tape, toy car, washers, rubber bands or tape, any other materials to build a ramp, and a copy of the [How Does Weight Affect Distance?](#) document. Have them follow the directions to complete the activities in the Evidence section using their supplies. After building a ramp, students will test their car using different amounts of washers. They will complete three trials at each weight and determine the average distance for that weight. They will then create a graph of their data using [Create a Graph](#) or graph paper.



If students are unfamiliar with Create A Graph, you may want to walk them through making a [simple practice graph](#) before they begin to graph their distance data.

Product: Using the evidence gathered by the activity, have students complete the Claim and Reasoning section of [How Does Weight Affect Distance?](#)