

CARS AND ENERGY

PROBLEM: How does the height of a ramp affect potential energy of a car?

RESEARCH: Read about potential and kinetic energy in a textbook, encyclopedia or on a web site. Write two or three paragraphs in your own words.

HYPOTHESIS: At which height do you think the car will have the most potential energy?

MATERIALS: one small model car (like hot wheels)
one board - about one meter long and at least 12 cm wide

PROCEDURE:

1. Mark the board every 20 centimeters.
2. Stack 5-8 books and put the end of the board on top of the books. Use the board and books as a ramp for the car. Measure and record the height of the stack of books.
3. Send the car down the ramp and measure how far the car travels from the end of the board.
4. Repeat step 3 for a total of five trials. Calculate the average distance travelled for the five trials.
5. Keep the length of the board the same, but change the number of books in the stack. Measure and record the height of the stack of books each time change the number.

Enrichment: How do you think the potential energy will change if you change the length of the ramp? Design an experiment, including procedure, to test this problem.

DATA: Record the data from each trial, including height of the books and average, in a data table. Graph the average of the trials. Use height of stack as the independent variable and distance travelled as the dependent variable.

CONCLUSION: Explain what you learned by doing this activity and remember that you must answer the question you asked in your original problem statement.