LESSON 26

MOUSETRAP CAR: TESTING PHASE

In this activity, you will complete the construction and testing of your mousetrap. Follow these instructions to conduct the official test. Then answer the questions to demonstrate your understanding of the project's connection to our recent lessons in work, power, energy, and simple machines.

Supplies

- Tape measure
- Flat, smooth surface
- Stopwatch
- Masking tape (or objects to mark starting/finish lines)

Instructions

1. Use the tape to mark a starting line for your car. Position your car completely behind the line.
2. Measure five meters from the starting line and use tape to mark a finish line.
3. Prepare your car for the test. Ask a helper to start the stopwatch as soon as the car begins moving and stop it when it crosses the 5-meter mark (or when it stops if it doesn't reach 5 meters). Record the time below.
4. Measure the total distance the car traveled from its starting position to where it came to a complete stop. Record the distance below.

Time to reach 5 meters: _____

Full distance traveled: _____

Questions:

1. Draw a sketch of your mousetrap car.

2. Calculate the velocity of your mousetrap car using the 5-meter distance and the time it took to reach 5 meters.

3. Using the velocity from #1 as your final velocity, calculate the acceleration of the car over that 5 meters (remember, the car started at rest).

4. Describe how energy was transferred during the testing of your car. How were potential and kinetic energy involved?

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5. What are some simple machines that were present in your mousetrap car?

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6. What are some things you could have done to improve the design of your car? What might have made it travel farther or faster?

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