Classbox
by Betabox Learning

Activity Sheet: Potential vs Kinetic Energy
Name:

Instructions

Your goal is to investigate potential and kinetic energy by using a toy car to drive down tracks at different heights. You will observe the difference in energy that the cars exert when they make a dent on a piece of clay. Follow the steps below to brainstorm and test your hypothesis.
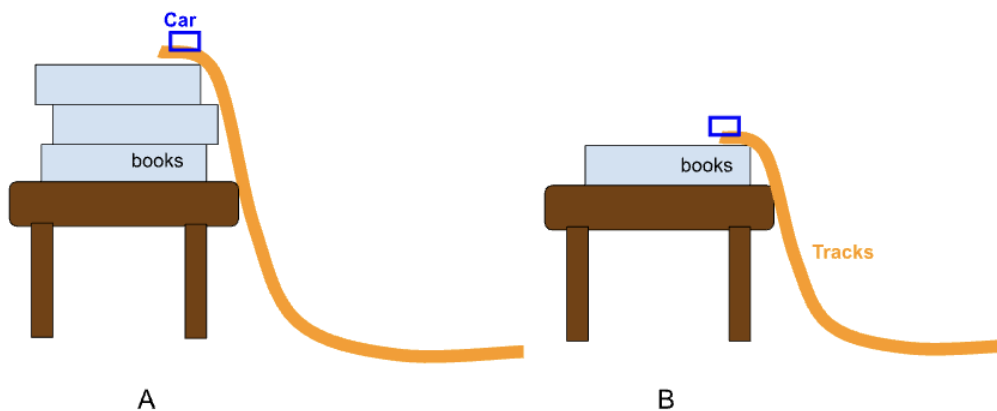
Step 1: Background knowledge

Define potential and kinetic energy and come up with your own example.

Step 2: Form a hypothesis

The purpose here is to predict and investigate which car will make the largest dent on the clay!

Example: I predict Car [A/B] will make a larger dent on a piece of clay because it has [higher/lower] potential energy.

A   B

Step 3: Set Up Experiment

1. You might want to gather books or find a way to elevate the starting height of the track, such as using a desk.
2. Now, find a way to stop the cars at the end of the track, like placing it against a wall or a heavy book.
3. Roll up 3-4 identical pieces of clay and flatten them a bit.
4. Place your first piece of clay at the end of the track.
5. Cut a straw into approximately 3-4 pieces and use tape to securely attach the straw to the top of the car, so the straw is poking out in front of the car. This way, you will be able to tell the depth of the dent that the straw makes.
6. You're almost ready. Measure the height where your car will start and record it in the table below.

Step 4: Test

1. Push the car very lightly from the top of the ramp so that your force doesn't affect the final outcome.
2. Observe the dent on the piece of clay and set it aside later for comparison.
3. Set up a new experiment with a higher or shorter height and repeat your experiment!

Step 5: Observations

Make a table or graph to visually compare the dents made on the clay.

Car's height from the floor	Amount of Dent	Additional Notes

Step 6: Conclusion

Review your hypothesis. Did the experiment work as you expected? Which car made the largest dent and the smallest dent? Why? Use evidence to support your reasoning.