Curiosity Guide #210
Mechanical Energy

Accompanies Curious Crew, Season 2, Episode 10 (#210)

Craft-Stick Chain Reaction

Investigation #2

Description

Build a "cobra" out of sticks, set it in motion, and watch what happens!

Materials

- Craft sticks
- 8-10 paper cups
- Directions from the internet on how to do a cobra weave. Search "cobra weave sticks." Click "Video."

Procedure

1) Cobra-weave the craft sticks together.
2) Make sure both ends of the woven sticks are locked.
3) Build a pyramid of paper cups at the end of the cobra weave.
4) Release the first craft stick and watch the chain reaction!

My Results

Explanation

When the sticks are woven over and under one another, they become stretched. The weaving puts the sticks under tension and increases their **elastic potential energy**. When the sticks are released, each stick springs away from the other. This motion changes the potential energy to **kinetic energy**. Finally, the sticks knock down the cups with **mechanical energy**.

Think about this! Imagine a book that is up on a high shelf. Now, what would happen if that shelf wasn't there? The book would fall, wouldn't it? That's because gravity is pulling it to the ground.

Now imagine that the shelf is still there. Gravity is still pulling down on that book, so that the book has the potential of falling. We would say that the book has **potential energy** that is being stored up. As soon as the book starts to fall, we say it has **kinetic** or **motion energy**. Just for fun, let's imagine that that book hits a little catapult lever and launches a marshmallow. Because the book moves the lever and the marshmallow, we say that it has **mechanical energy**. That's pretty energizing!

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