

Credit: <a href="http://www.msichicago.org/experiment/hands-on-science/comeback-can/">http://www.msichicago.org/experiment/hands-on-science/comeback-can/</a>

## **Materials Needed:**

Empty cylindrical container [ex. Coffee can] / large rubber band / paper clips / scissors / an object to use as a weight [ex. 9 V battery or heavy block] / tape

**Building a comeback can:** First with the scissors, punch a hole in the center of the bottom of the can and then punch a hole in the center of the lid of the can. Next tape your weight to the center of the large rubber band. Pull one end of the rubber band thru the hole at the bottom of the can and secure it on the outside with a paperclip. The hanging weight should now be inside the can. Repeat by threading the other end of the rubber band thru the hold in the lid and securing with a paperclip. The body of the rubber band and weight should now be enclosed inside the can. You are now ready to test! Roll the can away from you on a flat surface, and see if it will return.

**The science:** The experiment demonstrates the transfer of kinetic energy to potential energy and back to kinetic. It all begins when you push the can to give it kinetic energy. While the can is then rolling, the weight causes the rubber band to twist multiple times. The twisted rubber band is the transfer of kinetic energy to stored potential energy. The rubber band then unwinds, and in doing so, the potential energy transfers back to kinetic energy as the can returns to you.

This activity ties into the Challenger Learning Center of Maine, where students experience a newfound excitement for science, technology, engineering and math.

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