



The Chain Reaction Recycling Machine

Making Connections

We are going to connect all of our ramps to make a whole-class recycling machine. A ball will be dropped into the first ramp, which will cause a chain reaction that continues through all of the ramps and ends with the recycling of a plastic bottle and a wad of paper.

What are you to do?

- **Construct**

The “last group” will recycle the bottle and paper. All of the other groups will connect their ramps in a non-direct and clever way, so that the motion never stops.



- **Make a poster to present your findings. On your poster...**

Introduce

Write a few sentences that explain what work is, what energy is and what the basics types of energy are.

Log

Keep a log, with dates, on the engineering processes leading up to the creative connection. Any addition or modification to the connection should be listed with the science and the engineering rationale behind it. Include accurate measurements and ratios if applicable. Below is an example of how to start...

Date	Action Taken	The science and the engineering behind it	The outcome of the Action

Sketch

Draw a sketch of your creative connection and label **A**, **B** and **C**, similar to above.

Analyze

Collect data and record data in order to determine the following...

1. What type(s) of energy are at **A**? How much energy is at **A**?
2. What type(s) of energy are at **B**? How much energy is at **B**?
3. Work done by friction from **A** to **B**.
4. Work done from **B** to **C**.

Explain

Explain how you measured and calculated to get the values above.

What was difficult to measure and why?