

Family Engineering Night: Family Take Home Activity Catapulting Fuming Fowls

Objective: You will make a catapult to launch pom-poms.

Materials: Cereal box, rubber band, plastic spoon, masking tape, pom-poms (may add googly eyes to pom-poms)

FCAT Vocab: lever – a lever is a type of simple machine. It is made of a long arm that is balanced on a point (called a *fulcrum*), like a see-saw. When one end of the arm is pushed or pulled, the other end can lift or launch an object. A catapult is a type of lever.

Procedure:

- 1. Hold the handle of the spoon in one hand and the pom-pom in the scoop part of the spoon. Gently bend the spoon and release to test how the spoon works as a catapult.
- 2. Create a target (using a cup or a square of masking tape). Using your spoon and pom-pom, try to hit the target from 5' up to 15' away.
- 3. Have an adult cut a $2" \times 2"$ square in the middle of a cereal box.
- 4. Design a way to attach the spoon to the box using a rubber band and masking tape.
- 5. Test out your catapult by trying to hit the target with the pom-pom.
- 6. Redesign the spoon, rubber band and masking tape as needed.

Discussion:

How can I aim my catapult?

Objects launched from a catapult follow a trajectory, a path that goes upwards from the launch force and then downwards from gravity. Watch the path of the pom-pom after it is launched. It should look like an arch. Use this knowledge to help aim your catapult.

Who invented catapults?

The ancient Greeks are given credit for inventing the catapult. They got the idea from the crossbow, which is another invention that helps launch objects farther than they can be thrown.

What are some other simple machines?

Wedges, screws, levers, pulleys, wheels, and inclined planes are all types of simple machines. Simple machines are used to make work easier.

Web Resources:

- http://sln.fi.edu/qa97/spotlight3/spotlight3.html
- http://www.msichicago.org/simplemachines

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