

# Simple Machines

**PSS Kit Number 11**

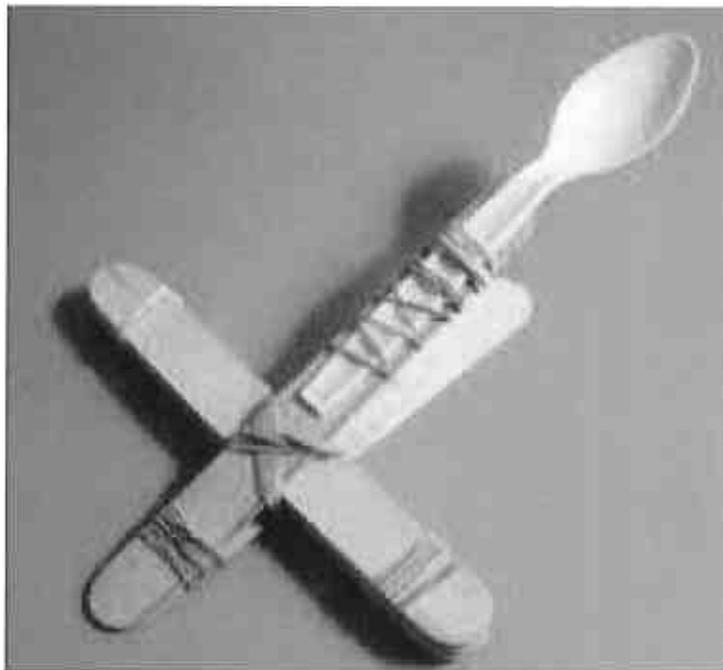
**Description** Materials for making a catapult

**Kit Contains**

Popsicle Sticks

Rubber Band

Plastic Spoons



# Human Sciences Extension and Outreach

## Empowering People. Growing Lives.

### Cedar County Extension and Outreach

### Building Strong Minds – Simple Machines

#### What we did

- We started out by reading Lance Dragon Defends His Castle With Simple Machines
  - Book is by Eric Braun and illustrated by Anthony Briglia
  - Talked about what simple machines Lance Dragon used in the book and what shapes make up the Simple Machines.
- Talked about Simple Machine – Lever, Inclined Plane, Wedge, Pulley, Wheel and Axle, and Screw
  - Lever – a bar or board that pivots on a fulcrum; when one end is moved, the other end moves in the opposite direction to lift or move an object.
  - Pulley – A wheel, usually with a groove around the outside so that a rope or cable can fit into it; it is used to lift or lower loads more easily
  - Inclined plane – a flat surface that is slanted so that things can be easily moved up and down along it
  - Wheel and Axle – An axle is a rod in the center of a wheel; usually it connects two wheels that turn around it. Wheel is a round frame or object that turns on an axle; when turned, the wheel moves a greater distance than the axle and takes less force to do so. An example would be a wheel barrel
  - Wedge – two inclined planes attached back to back so they create a sharp point that can be used to split things. Example would be a knife or crow bar.
  - Screw – a narrow inclined plane wrapped around a cylinder so that when it is turned onto or into something it tightens or loosens
  - What makes them a Machine
    - A machine uses a push or a pull to make it easier, or require less force, to move something.
- Played a game like Simon Says using motions that a simple machine would make
- Ended our time by making a catapult
  - To make one at home you need
    - 7 popsicle sticks
    - 6 rubber bands
    - 1 plastic spoon
    - Items to launch (we used Cheerios), different weights and sizes would be good
  - To make your catapult follow these directions
    - Stack 5 craft sticks on top of each other and secure both ends with a rubber band. (We used some of the colorful loom bands that seem to be everywhere in our kitchen.) This will be your crossbar.
    - Next, stack 2 craft sticks on top of each other and secure one end with a rubber band.
    - Carefully open up the 2 craft sticks and slide your stack of 5 in between them.
    - Then lay a plastic spoon on top of the top craft stick and secure both ends of the spoon to the craft stick.
    - Finally, criss-cross one more rubber band around the area where the craft sticks intersect, holding it all in place.