FLORIDA MUSEUM®

Ages: 5-11 yrs **Time Required: 15-30 min**

Oscillating Woodpecker

Make a kinetic toy!

Materials

- Woodpecker template (print or trace)
- A straw or a small piece of paper and pencil to make a straw
- Scissors
- Rubber band
- Tape or glue
- Crayons

Try this!

Step 1: Color the woodpecker template (use photos of real woodpeckers to get ideas!)
Step 2: Fold woodpecker template sheet in half, so that you have one woodpecker on each side.
Step 3: Cut along the edge of the woodpecker design template.
Step 4: Find a piece of straw or make your own using a small piece of paper and a pencil as a guide (it shouldn't be too long or wide).
Step 5: Tape the straw to the center piece, between both woodpeckers.
Step 6: Cut the rubber band and thread it through the straw piece.
Step 7: Fold woodpeckers and add tape or glue along the edge of the design to keep them closed together.
Step 8: To make the woodpeckers oscillate down you just need to hold both ends of the rubber band using both hands to stretch the rubber band. Once the woodpecker reaches the bottom flip your hands to make it go down again! You might have to adjust how much you stretch your rubber band depending how thick it is, usually thinner rubber bands are better.

Tips: You can add a bead or a paper clip at the ends of the rubber bands to make sure your woodpecker doesn't fall out.

What's going on?

The woodpecker oscillates back and forth like it was pecking on a tree thanks to kinetic energy and the friction produced by the rubber band. When you hold the woodpecker on the top side of the rubber band it has stored potential energy, and as soon as you release it turns into kinetic energy. Gravity is the force that is pulling down on your little woodpecker, but the friction produced by the rubber band also applies a force to the woodpecker, but in the opposite direction of the force of gravity, and that's why the woodpecker just doesn't fall straight down. Did you know that woodpecker skulls are built to absorb shock and minimize damage to their brains? Visit the following link to see woodpeckers you can observe in Florida: https://www.floridamuseum.ufl.edu/birds/gallery/piciformes.

Extension Activity

Let's do an experiment! What would happen if you changed the size of the straw or the rubber band? Or, what would happen if your thread something else through the straw instead of a rubber band? Whatever you end up picking it's important to have the right amount of friction for your woodpecker to come down pecking!

Additional Resources

You can visit https://www.floridamuseum.ufl.edu/educators/resource/oscillating-woodpecker/ to see a step-by-step guide on how to make this activity!

Woodpecker Design Template