



Bottle Cars

Turn your trash into a new toy!

Materials Needed:

- Plastic Bottle
- 4 plastic bottle caps
- 2 plastic straws
- Wooden skewers or toothpicks
- Balloon
- Tape
- Scissors (make sure to have an adult help with scissors)



Procedure:

1. Cut one of the straws in half and tape both pieces to the water bottle (on the same side).
2. If using a wooden skewer, cut it in half. Put each piece (or toothpick) through one of the straws.
3. Take the scissors and make a + shaped hole in the center of each bottle cap. After, put each bottle cap onto the ends of the wooden skewers. You just made axels and wheels for your car!
4. Take a break and push your car on a flat surface. Make sure that your car is able to roll smoothly and coast. If it can, move on to the next step. If not, make sure your axels are parallel to each other, the wheels are centered, and the straws are taped securely to the water bottle.
5. Tape the end of the balloon around one end of the uncut straw and make sure it is taped airtight.
6. Cut a small hole near the neck of the bottle. Make sure it is just big enough to be able to push the straw through. Then, push the straw through the hole and out the mouth of the water bottle.
7. Tape the straw and make sure it is secure to the bottle.
8. Blow into the straw to inflate the balloon. Put your finger over the tip of the straw and make a prediction: What will happen when you place the car on a flat surface and release your finger?
9. Bonus! Adjust the car to make it go farther. Inflate the balloon less or more. Aim the straw in different directions. Record your findings.

The Science Behind This:



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When you blow up the balloon, potential energy is being stored, which is energy that is able to be stored based on the position of an object. Once released, the energy is converted into kinetic energy. Kinetic energy is the energy of motion. You can also use Newton's third law of motion to think about the balloon: For every action there is an equal and opposite reaction. When you blow up the balloon and release the air, the rubber contracts and air is pushed out. And here is the equal and opposite reaction: The air pushes back on the rubber of the balloon and pushes the car forward.