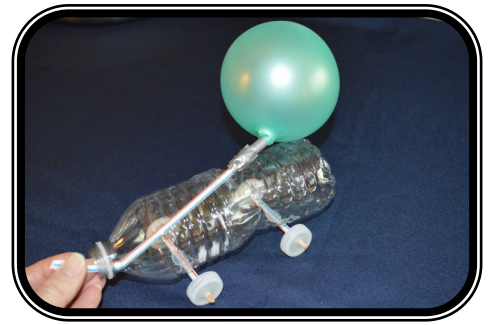


DIY Making a Wind Powered Car...

Key Physics Concepts used in this activity...

- Kinetic Energy
- Potential Energy
- Conservation of Energy
- Newton's Laws of Energy



Background:

It might not seem like it at first, but a simple balloon car is loaded with physics and engineering concepts! When you inflate a balloon, it stores potential energy in the form of stretched rubber and the compressed air inside. When you release the balloon, this energy is converted to kinetic energy—the energy of motion—as the balloon zooms around the room. Some of the energy is also converted to heat due to friction. According to the law of conservation of energy, the total amount of energy is conserved. Energy never “disappears”—it just changes to another form.

Activities with your car...

- Time the speed of your car over a measured distance using a second hand on a watch.
- Make two cars and race them with a family member. Did they finish at the same time? What differences in the cars caused one to be faster than the other?
- Can you alter the cars to make them faster? Hints: Use more air in the balloon, try changing the type of wheels used, change the shape of the water bottle. Remember you science methods and change only one feature at a time to compare their speeds.

Making the car... Materials Needed:

- Plastic beverage bottle, (4) plastic bottle caps, and small Phillips screwdriver
- (2) plastic straws one with a bendable inter-piece, tape, and glue
- A BBQ stick, scissors, and a balloon

Using scissors, cut one straw into (2), 2” pieces. Glue the straw pieces to the bottom of the plastic bottle spreading them out as wheel axles for the car. Cut the BBQ stick into (2), 3” pieces. Place the sticks through the straws. Using the screw driver, cut small holes in the center of each bottle cap and push the ends of the BBQ sticks through the holes. They should be snug in the caps but roll freely inside the straw to act as wheels. On the top of the bottle near the open end, cut a hole large enough to place the other straw into the bottle. Take the balloon, and tape it onto the straight end of this straw. Insert the bendable end of the straw through the top hole and make sure the end extends out of the bottle through the bottle opening. You should be able to fill the balloon using this end of the straw. Blow up the balloon and use your finger to keep the air in. Set the car wheels on the floor and let go of the straw. Watch your car fly!

