

Build a Balloon Powered Car

Ask a child to describe science in just one word, and you'll probably hear "fun!" To young kids, hands-on science activities satisfy natural curiosities and are motivating, almost magical feats.

But science isn't just about experiments that yield magic-like effects. It's also about using knowledge to solve some of the world's toughest problems. In today's energy crisis, we're constantly looking at the science behind our sources of energy. Where does power come from, and how can we use it efficiently? Explore some of these big energy issues with your kids by putting on a jaw-dropping demonstration of an ultra-efficient air-powered car!



What You Need:

- Clean, dry, half-gallon milk carton with the top cut off, cut in half along the length of the carton
- 4 spools (or substitute your own items for wheels, such as large bottle caps)
- Straws
- Balloon (and some extra ones, too!)
- Hot glue gun and glue

What You Do:

1. For starters, you may want to decorate the milk carton—while this won't make the car go faster, it will make the ride more swank! You can use tempera paint to cover the outside surface (but do put in a drop of dish soap so that the paint will stick to the waxy coating on the milk carton), or glue on strips of colored paper, and mark windows and doors with a marker. Do beware: don't cut holes in the milk carton...the only hole will be the one you make for your balloon.
2. Cut a small hole in the middle of the back side of the carton. This is where the balloon will go. (Start with a small hole...you may need to make it bigger later if it doesn't let enough air escape from the balloon.)
3. Put the open end of the balloon through this hole.
4. Make holes in the sides of the cartons for the straws to form axles. (Axles are the straight stick-like parts of the car that hold the wheels.) These holes need to be close to the bottom of the carton.
5. Stick the straws through the holes and glue on the spools to form wheels.
6. Now the car is built and ready for testing. Before you try it out, though, be sure to explain the principle behind it. Have your child fully inflate a balloon, hold onto the end without tying it, then let it go. What happens? (It zips around the room until the air is fully deflated. This is because when the air comes out, it pushes the balloon with equal force in the opposite direction. The gas powers the movement of the balloon. This is the principle behind the car as well.) Ask your child to predict what is going to happen when he inflates the balloon in the car, and lets it go.
7. Now, try it out! Inflate the balloon, but don't tie it closed. Let go. What happened?

Note: You may need to make some adjustments to tweak the design of the car, the size of the hole holding the balloon, or the size of the balloon. It's all about problem-solving. Encourage your child to keep trying until it works—just like all the great inventors of the world!