

SCIENCE FAIR CENTRAL

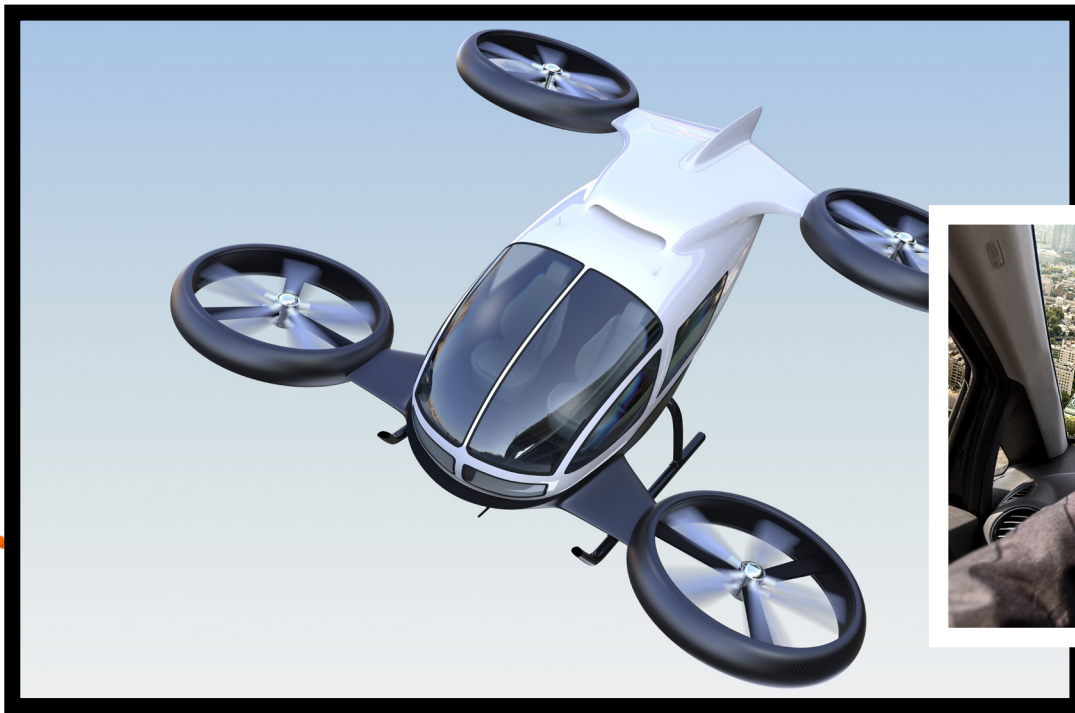
Flying Cars

Ages 5-12

OVERVIEW

The Home Depot's Kids Workshops program is celebrating its 25th anniversary! Thanks to innovations across all areas of life, the world has changed a lot since The Home Depot released their very first Kids Workshop activity in 1997. The kids who were making and doing at The Home Depot's Kids Workshops back then are now adults who make positive impacts on our world in 2022.

Looking 25 years into the future, you too will have the power to make big impacts on the world and the people around you. Thinking ahead 25 years, what could you build and do TODAY to have an impact on our world when we're ready to celebrate the 50th anniversary of The Home Depot's Kids Workshops?



MAKE. CREATE. EXPLORE.

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BACKGROUND

Imagine that the year is 2047 and transportation looks nothing like it did 100 years ago, 50 years ago, or even 25 years ago! Many cars are self-driving, so humans don't have to control them. The majority of cars are also electric, which helps the environment. And—perhaps the hardest to believe—cars can fly! Passenger vehicles of all shapes and sizes are now able to travel through the air from Point A to Point B.

MATERIALS

- Planning for the Future sheet
- Ping pong ball (or equivalent)
- Drinking glass
- Permanent markers
- Paper, several pieces
- Pencil
- Scissors
- Tape
- Flexible straws
- Timer

ACTIVITY (30 MINUTES)

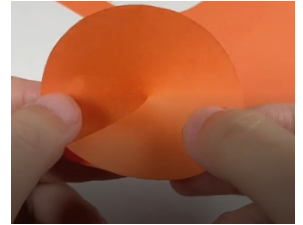
Read through the directions on the Planning for the Future sheet, and kick off the activity by using the materials above to create your initial flying car prototype. Then collaborate to recap the challenge, brainstorm solutions, and sketch your ideas for Flying Car Version 2.0. Once your family has a favorite design, create an optimized prototype that can fly for even longer!

ENGINEERING DESIGN CAPTURE SHEET

Directions: First, decorate your ping pong ball with the permanent marker(s). This ball will represent your car! Then follow the directions below to transform your car into a flying vehicle:

1. Trace a drinking glass on your paper and cut out the circle.
2. Draw a dot in the center of the circle, and then cut a straight line from one end of the circle to this dot.

3. Overlap the two ends of the circle to create a cone, like the image here. Once your cone has a point at the end, use tape to hold the cone in place.
4. Cut off the very end of the cone's point, so the hole is just large enough for the straw to fit through.
5. Push the straw (the end closest to the bendy part) through the hole, just until it comes through the bottom of the cone.
6. Now place your car inside the cone and on top of the straw. Blow through the straw and time how long you can keep your vehicle up in the air!



Once you've succeeded with this basic flying car model, brainstorm in the space below how to create a Flying Car Prototype 2.0 that stays up in the air even longer.

Recap: What is your goal?

Prototype: Choose your family's favorite idea and sketch it below. Then work together to bring your Flying Car 2.0 to life!

Brainstorm: What ideas do you have?