

## Balloon Car Design Challenge 2

# Engineering Notes

Test, Analyze, & Improve Your Car's Design

### Your Challenge:

Design and build a prototype of a car that is powered by a balloon.

### Test Your Prototype:

Engineers improve their designs by testing them. Watch closely as you let go of your car.

**Make some quick notes here about what you've seen your car and others' cars do.**

**REMEMBER!** If your car doesn't work the way you expect it to, that's not bad. It's an opportunity to solve a problem and make a better prototype.

### Analyze & Share Your Results:

Engineers think carefully about their test results and how their prototypes perform.

**Why did your car perform the way it did?** Write your ideas here.

### Design Thinking Process

- Identify the Problem
- Brainstorm & Plan
- Build
- Test
- Analyze Results and Improve
- Share Your Solution

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### Brainstorm Improvements:

Engineers use their test results and analysis to guide how they will improve their prototypes. Based on what they learned from testing, they think of possible improvements.

**Write ideas or draw plans to improve your design here.** Use extra paper if you need to!

**REMEMBER!** If you want to, you can make changes to your car and test it again. That's what engineers do: they design, test, improve, and test again, over and over, until they come up with a product that works the way they need it to.

### Ideas to try:

- **If your car is slow**, look at how the jet is attached to your car. Is the straw parallel to the floor? If it points up, down, or to the side, your car won't move as fast or far as if the jet points straight back.
- **Does your car veer off to one side?** Check if your axles are parallel to the floor or if they are at an angle. Check if your wheels are centered on the axles
- **How could you make your design even faster?** How could you make it go further?