These balloons rise thousands of feet into the air and can travel hundreds, and even thousands, of miles, using just the buoyancy of hot air!

But I can’t seem to control this balloon. Your challenge is to make a helium balloon hover in one spot. Then move it around the room using air currents.

Ready, Design Squad? Get that balloon under your control!

**PART 1: THE HOVER TEST**

Go slowly. Add or subtract weights one at a time.

No dragging, please. Tie the ribbon close to the neck, or cut it off.

Is it neutrally buoyant? When it floats in the same place for about 5 seconds, you’ve done it!
PART 2: EXPLORE AIR PRESSURE

“Drive” your balloon

Test it
Which moves the balloon best—one swift stroke right next to the balloon? Big swoops? Fanning? Quick swipes?

PART 3: TWO CHALLENGES

Challenge #1
Move the balloon in a circle around your partner.

Challenge #2
Steer the balloon up and over an object—a chair, a table, or your partner’s head.

Balloon race
Extra time? Race another team! Steer over a desk and into the seat of a chair as fast as you can.

Remember:
Don’t touch or hit the balloon!

Balloons drift wherever the wind takes them. But if you add a way to control where the balloon goes, say by adding an engine, you’ve engineered a blimp—a balloon that you can fly wherever you want!

Watch DESIGN SQUAD on PBS or online at pbs.org/designsquad.