



**ZOOMsci Activities**

**Try It Out**

**ZOOMon: Change One Variable**

**Share Your Results**

**Keep ZOOMing**

**ENGINEERING**

**Balloon Flinker\***



Weight a helium balloon so it neither floats nor sinks.

- Weight of cup
- Length of string

- What happened with your first design?
- What did you change to get your balloon to flink?

- Keep experimenting with floating and sinking:
- Flinker
  - Boats Afloat

**Egg Bungee Jump**



Invent a bungee jump for an egg.

- Length of nylon
- Type of nylon
- Weight of egg

- What design did you use?
- What made your design work?
- If you had an “eggsplosion,” why?

- Keep experimenting with technological design:
- Financial Support
  - Straw Bridge

**Flinker\***



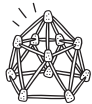
Design an object that doesn't float or sink—it “flinks.”

- Type of liquid
- Type of object

- How long did your object flink?
- What made your object neither float nor sink? Why?
- How can you make it flink longer?

- Experiment further with buoyancy:
- Dancing Raisins
  - Pour Water in Air

**Gumdrop Dome\***



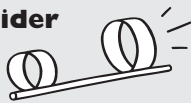
Build a geodesic dome with toothpicks and gumdrops.

- Number of toothpicks in the base
- Shape of sides (square or triangular)

- How many triangles are in your dome?
- Compare a dome with square sides and a dome with triangular sides. Which is more stable?

- Make a large dome from newspaper:
- Geodesic Dome

**Hoop Glider**



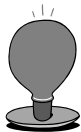
Create a glider that travels the longest distance possible.

- Type of paper
- How you design your glider

- How far did your hoop glider travel?
- How can you make it travel farther?

- Make more things that fly:
- Delta Wing Flyer
  - Glider

**Hovercraft\***



Make a vehicle that glides on a cushion of air.

- Size of holes in film canister and plate
- Size of plate
- Size of balloon

- Which parts help the hovercraft move? Which parts slow it down?
- If your hovercraft didn't work the first time, how did you fix it?

- Experiment further with air:
- Air Lift
  - Hoop Glider

\* indicates Spanish version available



© 2003 WGBH Educational Foundation. All rights reserved. ZOOM and the ZOOM words and related indicia are trademarks of the WGBH Educational Foundation. Used with permission. ZOOM is produced by WGBH Boston. Funding for ZOOM is provided by the National Science Foundation, the Corporation for Public Broadcasting, and public television viewers. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation. All submissions become the property of ZOOM and will be eligible for inclusion in all ZOOMmedia. This means that we can share your ideas with other ZOOMers on TV, the Web, in print materials, and in other media and ZOOMways. So, send it to ZOOM. Thanks! Illustrations by Stephen Schudlich.

[pbskids.org/zoom](http://pbskids.org/zoom)

