



Balloon Flinker

Make a helium balloon “flink”—neither float away nor sink to the ground.

What You Need

- small paper cup
- pencil or hole punch
- helium balloon with ribbon attached
- scissors



Engineering Scoop

Gravity is pulling down on your balloon, the helium inside the balloon, and on the air around the balloon. The helium inside your balloon is a gas, just like air. But helium weighs less than air. So a balloon filled with helium weighs less than the air around it. The air around the balloon pushes up the balloon harder than gravity pulls it down, so the balloon floats to the ceiling. If you add weight to the balloon, you make the balloon heavier. Too much weight means that gravity pulls down harder than the air pushes up, so the balloon sinks to the ground. If you add the right amount of weight, the balloon will flink—it doesn't float or sink.

1 Use the pencil or hole punch to **poke** a hole on each side of a small paper cup.

2 Put the balloon's ribbon through both holes and **tie** a knot. **What happens** when you let the balloon go?

3 How can you make the balloon **flink**—neither float nor sink? Try changing the **length** of the ribbon. Or **cut** off small pieces of the cup.

4 **Keep changing** the design of your flinker until it flinks for **10 seconds**.



Redesign It!

Redesign your flinker so it can **carry** something. Add some popcorn, a message, or something else that is **light**. What do you have to **change** to make your flinker flink again? Choose **one thing** to change, like the **length** of the ribbon, the objects you add, or the **weight** of the cup. Then **test** it and **send** your results to ZOOM.

Sent in by Daniel T. of Hixson, TN



© 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. So, send it to ZOOM. Thanks! Illustrations by Stephen Schudlich.

pbskids.org/zoom

