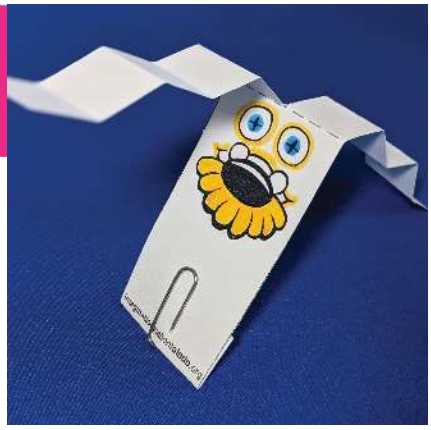
I.D.E.A. KIT



Gizmo-copters

What You Need

Printed Gizmo-Copter template
Scissors
Paper clip
Crayons, markers, colored pencils (optional)

What You Do

1. Use scissors to cut out one Gizmo-Copter by cutting on the solid lines.
2. Color your Gizmo-copter, if desired.
3. Cut down the solid line with the scissors icon in the center of the top part of the Gizmo-Copter. When finished, it should look like Gizmo has rabbit ears. These will become the blades of your Gizmo-Copter.
4. Fold the blades in opposite directions on the bottommost dashed line (just above Gizmo's eyes). Crease well, then release. If you look at it from a side view, it should appear like the Gizmo-Copter is a capital T.
5. Accordion fold each blade on the dashed lines.
6. Fold the flap at the bottom of Gizmo's face behind him, on the dashed line. Secure the fold with a paperclip.
7. Throw the Gizmo-Copter as high into the air as you can. You can also drop him from a height like a balcony or the top of a flight of stairs.

Questions to ask

- What happened when you threw your Gizmo-Copter?
- Which direction did your Gizmo-Copter spin? How could you make it spin the opposite direction?

What's The Science?

What goes up must come down! The force of gravity pulls everything that has mass together. As Earth has much more mass than the Gizmo-Copter, the Gizmo-Copter will fall back down to Earth. As it falls, however, it is traveling through the atmosphere. The air pushes up against the blades, causing them to bend upward. As the air continues to press up on the slanted blade, some of the thrust becomes a horizontal push. This is happening to both blades at the same time, but in opposite directions. The two opposing thrusts are what makes your Gizmo-Copter spin!

Try This

Use science vocabulary: Use related science words such as gravity, atmosphere, and thrust as you talk and play together. Children learn new vocabulary words when they hear grown-ups use them in context.
Extend the activity: Experiment with different variables to determine their effect on the Gizmo-Copter. Here are some ideas to try:

- Change the length of the blade
- Change the number of paperclips
- Change the type of paper the template is printed on

Keep In Mind

- Children are natural scientists; let them lead the way in their experimentation! Encourage them to ask questions and make suggestions only when they are stuck/discouraged.

Additional Resources

https://www.exploratorium.edu/science_explorer/roto-copter.html
https://www.explainthatstuff.com/helicopter.html

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