



STEAM Challenge

K-5 Theme Week

Science, Technology, Engineering,
the Arts & Mathematics

Summer's Greatest Hits Science

Engineer a Paper Helicopter

Directions:

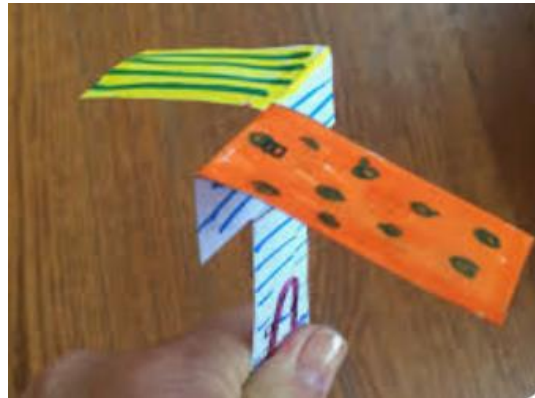
1. Using one of the following links, print out (or draw) paper helicopters. Cut and fold the helicopters according to the instructions provided.
 - a. [Build a better Bunny Copter](#)
 - b. [Make a Mars Helicopter](#)
2. Optional activity - color your helicopter, either before or after cutting!
3. Do a test flight - Stand up and hold the helicopter from its body. Raise it as high in the air as you can. Now, drop it.

Materials:

- Paper (printer paper, construction paper, etc.) or copy of the template
- Scissors
- Pencil or Pen
- Paper Clips
- Measuring Tape or Ruler (optional)
- Timer (optional)
- Art supplies (optional)

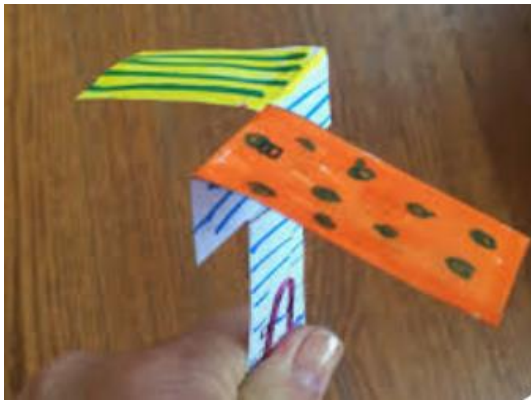
Make it an Experiment and Do Some More Engineering!

- What direction do the blades spin? Is this direction the same every flight?
- What happens if you change the direction the blades are bent?
- What happens when you drop your helicopter from a higher location?
- What happens if you change the length of the helicopter blades? What happens if you change the length of the helicopter body?
- How can you change your helicopter so it stays in the air the longest?
- Add more paper clips - how does adding more weight change how your helicopter flies?



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Add More Math:

- Drop the helicopter from different heights. Measure the heights. What do you notice about how the helicopter flies?
- Time how long your helicopter stays in the air when you change different aspects of it - height dropped, blade length, etc. What do you noticed about how long the helicopter flies when different parts of the helicopter change?

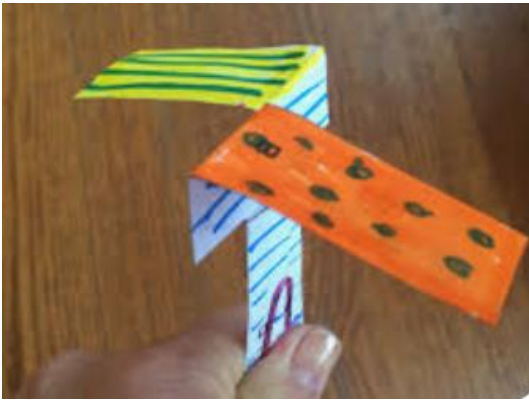
Add More Art:

- Make your helicopter out of a different material. What do you notice about do you notice about how the helicopter flies?
- Add paint and/or decorations to your helicopter?
- Add color, pictures, textures, etc to design and make a helicopter for different members of your family.

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Follow Up



How it Works:

- Gravity is the force pulling the paper helicopter to the ground.
- As the helicopter drops, the air pushes up against the blades, causing them to rotate. In doing so they create lift which helps to keep the helicopter in the air.
- Adding more weight (paperclips) will make the helicopter fall faster. Since the helicopter weighs more, less lift can be created.
- The direction the blades are bent in will affect whether it spins clockwise or counter-clockwise.
- The spinning is caused by the force of air acting on each of the helicopter's blades. The air presses on each of the blades with an equal force but in the opposite direction and the helicopter spins around.

Summer's Greatest Hits Science
Science and Engineering Links to Explore

[Science Buddies](#)

[Family STEM Activities](#)

[Wonderopolis](#)





Books to Explore



What can you learn about STEAM? Click on links above to login. Ask your school librarian for username and password.

Digital eBooks and Audiobooks from Sno-Isle (Click on Picture to check them out!) [Get Library Card](#)



Click to return to digital summer reading resources.

Reading, Writing and Math

Check out the activities by grade below to support summer learning!
Summer's Greatest Hits activities can be repeated and practiced in any order.

[Kindergarten](#)

[Third Grade](#)

[First Grade](#)

[Fourth Grade](#)

[Second Grade](#)

[Fifth Grade](#)

