



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences –particularly students of color and girls – by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at [www.projectexploration.org/stemathome](http://www.projectexploration.org/stemathome).

## In this activity, you will:

make a paper airplane that can carry cargo and glide more than ten feet. Get ready for takeoff!



## Supplies Required:

Construction Paper  
Tape, lots of tape!  
Handfuls of coins  
Doorway

## Video

Learn how to make a paper airplane: <https://tinyurl.com/r99kx2r>

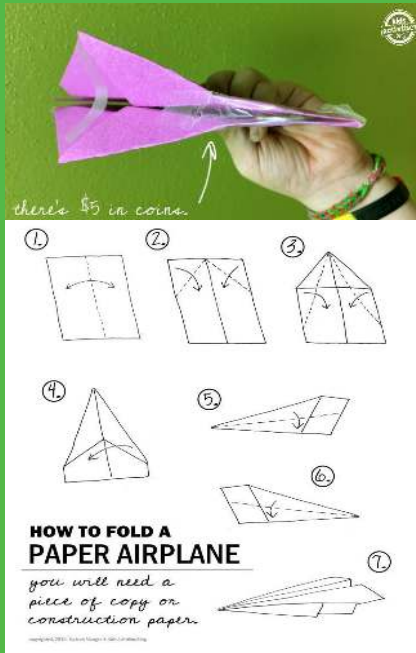
## Overview

You will make a paper airplane that can carry a cargo and glide more than ten feet (not be hurled, but actually glide). The cargo you will use is coins, but you can change to a different material available at home. What's the science behind paper airplanes? Depending on the aerodynamic design, paper airplanes can fly fairly far and glide through the air with ease. Physics can come in handy when designing the craft, as various forces can easily affect the distance and length of the flight.

There are various different designs which each cause the plane to fly differently. For instance, planes which are longer and balanced will fly longer, but those that are shorter and heavier in the front will barely fly at all. The key to making a great paper airplane is to experiment. Perhaps you will design one that beats the record by the current record holders for the farthest flight with a paper airplane!



## Instructions



1. Build your paper plane. If you have a hard time go to the Additional Resources below and watch the videos. There's also a website with links to do your research.
2. Use tape to attach the cargo (coins) to your paper plane.
3. Draw a line on the floor about ten feet in front of your doorway.
4. Use tape to make a "target" in the upper third of the doorway.
5. To prove your cargo plane can fly, you will need to glide the plane through that "target" successfully.



## Additional Resources

**Think About It!** There are various ways to fold paper into airplanes and each may have different flights. Try a few or try them all. You can even be creative and design something completely different from the ones shown!

1. The science behind paper airplanes: <https://tinyurl.com/go5e99m>
2. How to fold a paper airplane: <https://tinyurl.com/kxameh7>
3. Learn how to make different paper airplanes: <https://tinyurl.com/tmlpr2x>

## Share It Out

Talk about it with your family and friends!

**Share on social media:** record a video or take a picture of your paper airplane and post the results online using the hashtags:

#PaperAirplaneChallenge  
#ProjectExploration  
#StemAtHome

Tag a friend and challenge them to make their own paper airplane!

**Share via PE's website:** Students who complete STEM@home activities and share what they learned with the PE team via our website will earn points which can be traded in for cash prizes at the Explore Store. Your project number is 410. Learn more at [www.projectexploration.org/explore-store](http://www.projectexploration.org/explore-store)

### Join PE's character contest!

Design a STEM character who will lead kids through activities and be featured on our website and in our STEMbooks. Cash prizes will be awarded to the top 3 finalists. Learn more at: [www.projectexploration.org/character-contest](http://www.projectexploration.org/character-contest).



Call or text us for help: 312-772-6634

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