

Paper Airplane Cargo Challenge



Use your engineering skills and creativity to create an airplane that can successfully carry cargo!

Materials

Paper (construction paper is best)

Cargo (pennies, dried beans or paper clips are good options)

Tape!

Test Flight Area (make sure there is plenty of space for your plane to fly)

Procedure

1. Make a paper airplane. There are lots of examples online to guide you.
2. Test your paper airplane. Make sure it is actually gliding and flying- not just crashing through the air when it is thrown really hard.
3. Now add your cargo! Add as much cargo as you think your plane can handle. Use tape to secure the cargo if needed.
4. Launch your plane loaded with cargo. Was this flight successful? What did you notice about your plane's flight with cargo compared to your plane's flight without cargo?
5. Adjust your design as needed and try another flight with cargo. What happens if you change where the cargo is loaded on your plane?
6. Repeat step 5 until you think you've perfected your design. How much cargo did your plane carry? How far did your plane go while carrying cargo?

Extra Questions

1. What happens if you repeat the process using two pieces of paper stacked on top of each other (making your plane thicker)? Does the additional piece of paper help? Or does it make your design less effective?
2. What happens if you change the type of cargo your plane is carrying? Do you need a different design? Can your plane carry more of a different type of cargo?
3. What happens if you change the type of paper you use?
4. What did you notice during your test flights? What did you notice about the flight path of your plane? Was it always flying at the same height? What was the farthest your plane flew?