

## Design Challenge: Paper Airplanes

### **Description:**

Students will create paper airplanes using a variety of strategies.

### **Objective(s):**

Students will utilize the EDP to solve a challenge.

### **ISTE/NGSS Standards:**

4c: Students develop, test and refine prototypes as part of a cyclical design process.

5c: Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

MS-ETS-1.1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

MS-ETS-1.2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

# Teq™ Lesson Plan Activity

## Essential Question(s):

What provides lift and stability to aircraft?

## Materials:

- Paper
- EDP Graphic Organizer
- Tape
- Timer

<https://docs.google.com/document/d/1UYqqzT3aMgdNVb6-zog02Q4mY686WuM-2iHSEfsyLps/edit>  
[https://www.teachengineering.org/lessons/view/cub\\_airplanes\\_lesson06](https://www.teachengineering.org/lessons/view/cub_airplanes_lesson06)

## Do Now:

Have students build paper airplanes.

## Lesson:

1. Students will be introduced to the planes that will be building, students will predict which of the four will fly the farthest and fastest and why.
2. Students will be introduced to vocabulary around planes, such as nose, rudder, and stabilizer.
3. Students will build four different types of paper airplanes, using designs found [here](#).
4. Class will create a landing zone using tape markers for distance, students will fly their planes and record the speed and distance.
5. Students will record which planes flew the farthest and fastest based on class averages of those models.

## Closure:

Students will complete their reflections in the EDP graphic organizer.

## Extension:

Students can use other materials, such as tape or paper clips, to improve their craft, as long as they can present reasoning behind the additions.