

Flying High! Paper Aircraft Contest

An activity of "Tee & Boba".

Read "**Tee & Boba**" (page 28) and "**Learning from nature to build better**" (page 20–21). You will find both in *What's Up* March 2023. Tee has been watching pigeons to learn how they fly. However, he still has some difficulties building a flying craft. Can you do better? Have a contest in your class to test your ideas for paper planes. Work in groups of two or three.

THE CHALLENGE

To design and create a flying paper aircraft that meets these ideals:

- **Longest duration** — *Stays aloft for as long as possible.*
- **Furthest distance** — *Travels through air with the least drag.*
- **Unique flight design** — *Flies in an unusual way, e.g. mimicking a bird or other flying animal.*

STAGE I: PREPARE

1. Design your aircraft.

- Think about the type of aircraft you want to create. For instance, will it be a glider, a rubber-band powered plane, a plane that flaps like a bird, or something else?
- Get inspired by entries to the Singapore Amazing Flying Machine Competition ➤ <https://www.science.edu.sg/whats-on/competitions/SAFMC>).
- Sketch the design for your aircraft. Gather all the necessary materials.

Sketch of our aircraft

2. Make your aircraft using paper or any other lightweight material. Decorate it.
3. Field test your aircraft by trying it out before the actual competition. Note its drawbacks. Make changes to improve its performance. This is where these four basic aerodynamics principles come into play:
 - **Lift** is what keeps a plane in the air
 - **Drag** occurs as the plane is slowed down by the air it must move through.
 - **Weight** is the force of gravity pulling it down.
 - **Thrust** is the force that propels it forward.

STAGE 2: PERFORM

1. Participate in the competition. In an open space, mark out the starting line behind which each team must stand when launching its aircraft. Take turns flying your aircraft. Stay safe: make sure that planes are not thrown in the direction of other people.
2. All the students in your class then vote for the winners in each of these categories:
 - **Longest flight duration** – The plane that stays in the air for the longest time.
 - **Greatest distance flown** – The plane that travels the farthest.
 - **Most creative design** – The plane that has the most unique features.

STAGE 3: AFFIRM

1. In any contest, only a handful of participants are declared “winners”. Yet, if everyone participated wholeheartedly, then there are no real losers. You already know this as your teachers would have reminded you of this whenever you’ve had a contest.

Help your classmates to see why every team can celebrate its special creation. Spend time after the contest to point out the plus points of each of the other teams’ creations. And, welcome your classmates’ affirmations about your team’s aircraft.

My affirmations

Use this space to jot down, in point form, positive feedback for the other teams.