



# Science

*Air resistance and paper aeroplanes*

*LC: Design a paper aeroplane that can fly the furthest distance*

**Task: design the best paper aeroplane**

**You will need to research designs and test your paper aeroplanes before submitting your design**

**Success Criteria: The winner will be the plane that flies for the longest amount of time before hitting the ground – video evidence will be required as proof.**

**What makes a paper airplane fly?**

Air! How easily an airplane moves through the air, or its aerodynamics, is the first consideration in making an airplane fly for a long distance.

If you want your plane to fly as far as possible, you want a plane with as little drag as possible.

You will also need to keep your plane's weight to a minimum to help fight against gravity's pull to the ground.

Thrust is the forward movement of the plane and lift comes when the air below the airplane wing is pushing up harder than the air above it is pushing down.

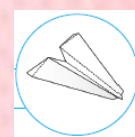
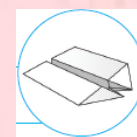
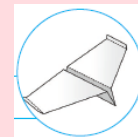
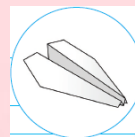
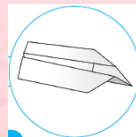
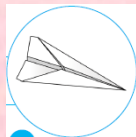
A long flight occurs when these four forces — drag, gravity, thrust, and lift — are balanced.

**Task: design a paper aeroplane and record how long it can fly for.**

**You will need to film the flights and submit them as evidence.**

**There are lots of different designs you could choose from or you could invent your own.**

**Below are some common designs that you could try**



**How streamlined is your design? Why is this important?**

**What effects are aerodynamics having?**

**You should have discovered that designs with a larger surface area will have a longer flight time and more streamlined designs can fly at a faster speed.**

**How many different designs have you tried? Can you think of any changes you could make?**

**Next, can you investigate the variables that can affect flight time? For example, are the flight times the same in different weather conditions?**