**Make a Paper Airplane**

Test your design and problem solving skills with these fun flight challenges. Make paper airplanes and gliders that can fly further and more accurately than your friends while learning about what makes them glide so gracefully in the first place.

This lesson plan offers some fun activities that allow students to make paper darts, airplanes and gliders while learning important science principles at the same time.

**Make Paper Airplanes:**

* Making paper airplanes is a fun activity that you can use to challenge students knowledge of flight principles as well as their design and problem solving skills.
* Give everyone some paper to work with (it's a good chance to use recycled paper) and tell them to design two paper airplanes, one that is designed purely for maximum distance and one that is designed to change directions and fly through two hoops.
* For the first challenge you need a big enough space to measure the length the paper airplanes flew (preferably indoors to avoid weather disadvantages such as wind and rain). Give everyone a few tries and compare the best results, what did the best designs look like? What dart designs failed?
* For the second challenge hang two hoops with a diameter of around a meter from the roof. Put the first a few meters in front of where the students throw from and hang the second a few meters ahead and to the left (or right) of the first hoop so the students paper airplanes will have to change direction in order to make it through the second hoop. They will have to think hard about how to design a plane that will curve in the direction they want it too, give them a few tries at the challenge and you can even let them modify their planes as they go.
* When it comes to the construction of their paper airplanes a few tips you can give students include making sharp folds and keeping the plane symmetrical when trying to achieve the greatest possible distance.

**Make Gliders:**

Let's try making a special glider with round wings. Can they can still take advantage of the [Bernoulli principle](https://www.sciencekids.co.nz/lessonplans/flight/flightintroduction.html) and glide like a normal glider does?

What you'll need:

* Paper
* Scissors
* Tape
* Drinking Straw (around 20cm long)

Instructions:

* Make a loop out of each strip of paper. Overlap the ends with enough room to squeeze a straw through. Tape the ends
* Push the straw through the pockets in the loops. The large ring goes to the back and the small ring to the front.
* Launch the ring glider with a gentle flat throw.

Experiment with the position of the rings. Does it make any difference if you move the rings forward and back or change the order of the rings?

The round wings work in the same way as flatter wings. The air moves more slowly under the wing and the higher air pressure lifts the plane into the air.

Who can make the glider that flies the furtherest?