

MEET THEM



Dr Ling is a Civil Engineer with a PhD in Environmental Science and Engineering, and is currently investigating the **environmental impacts from the aviation industry.**

Watch Ling's video (26 MINS)

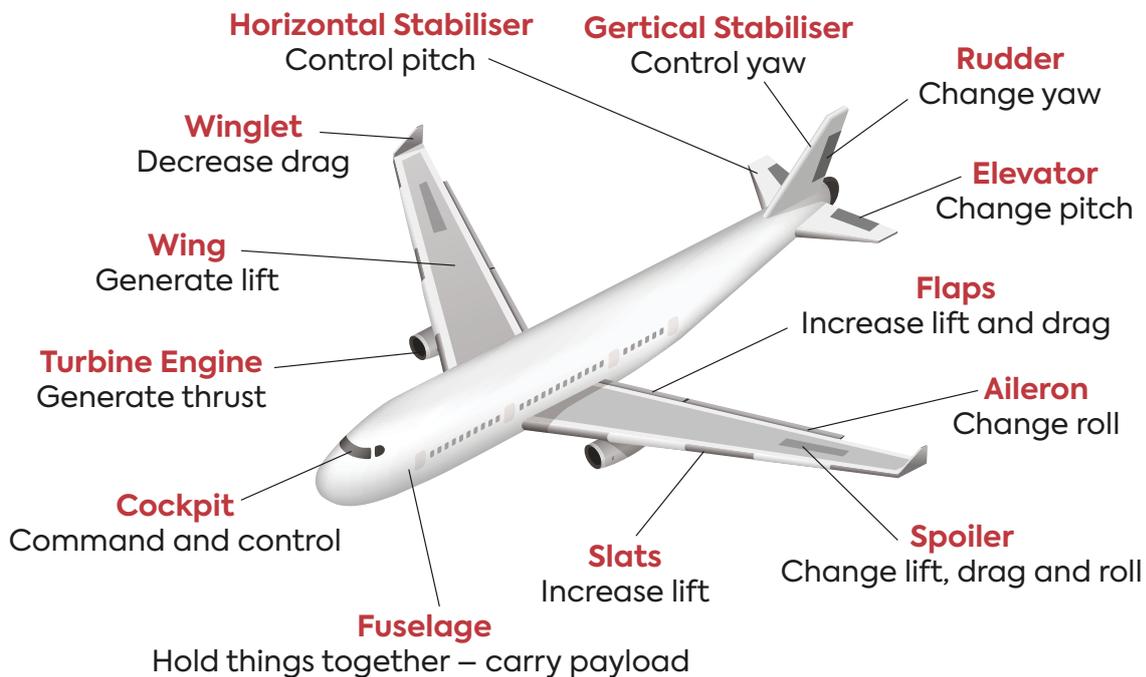


ACTIVITY: MODEL PLANES

Resources: plastic water bottle, card/paper, tape.

Ling's career involves knowing all the features of a plane. In this activity, students will look at the features of a plane and the functions of each of them. Make sure you have this image handy while you're modelling your plane so you can refer back to it.

AEROPLANE PARTS AND FUNCTION



- 1 Wrap an empty bottle in a paper cylinder. This will be the fuselage that holds the features of the plane together.
- 2 To create the wings, cut out 2 identical wings with an extra tab so you can tape this to the fuselage. Now, fold up the end of the wings to make winglets. Across the back of the wing, make 4 small snips to make the flaps.

ACTIVITY: MODEL PLANES continued

There are a few features of the wings – what forces are affected by these wing features?

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- 3** Now we need to make some turbine engines, so make 2 more small paper cylinders that fit under the wings.

Which forces do engines create?

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- 4** Now let's make the fin at the back of the plane by cutting out a small wing shape with a tab at the bottom. This is also known as the vertical stabilizer. At the back of the fin, make 2 small snips about $\frac{1}{4}$ of the way through the fin – this is the rudder.
- 5** Finally, we need our horizontal stabilisers on each side of the plane at the back, cut 2 more shapes similar to the fin, and stick them to the back of the plane on the sides.

What do these features do to the plane?

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Extension: At 16.34 in the video, Ling talks about some of the ways we could reduce the emissions caused by aviation. Can you incorporate any of these ideas or any of your own research about how to make your model plane more environmentally friendly?

NEXT STEPS...

If you're aged 4-18 and you're inspired to create a **Scratch project** on the themes covered here, submit it to the About Us coding competition by 23:59 GMT on 19 December 2021 for a chance to win some amazing prizes. You can also enter the **poetry competition** on the same theme by submitting a poem. Find out more and enter online at aboutus.earth.

