

Will it fly?



Location

Ground floor, Flight zone exhibition

In a nutshell

Predict if different flying machines from the 20th century will successfully take off.

What to do

Select a video to watch (Each clip is approximately 30 seconds), before the clip starts predict if the creation will fly successfully. At the end of each clip is some insight into why each flying machine was a success or not.

Time Required

KS1 & KS2 4 minutes per student.

What's happening?

For many centuries humans have tried to fly like birds, attaching wings made of feathers or light wood. These attempts were often disastrous due to the fact the muscles on a human arm are not like that of birds and cannot produce the required force.

In 1485 Leonardo Da Vinci produced drawings of the Ornithopter. He had over 100 drawings that illustrated his theories of flight. His Ornithopter was never created however the modern day helicopter is based on the concept. In 1783, Joseph & Jacques Montgolfier invent the hot air balloon, the first passengers were a sheep, rooster and a duck but on November 21st 1783 humans took flight in their balloon. From 1799 – 1850 George Cayley designed many different versions of gliders that were controlled by body movement. Otto Lilienthal, a German engineer was the first person to design a glider that could fly long distances in 1891. He studied aerodynamics, publishing a book in 1889 that was used by the Wright brothers as the basis of their designs. After testing many different wing designs in a wind tunnel the Wright brothers turned their attention to a means of propulsion. Their early engine design generated almost 12 horsepower (about 9000w). Finally at 10:35 on December 17th 1903 Orville Wright piloted their "Flyer". The two brothers took turns flying that day, the final flight covered 260 meters in 59 seconds. Human kind was not able to fly!

Curriculum links

KS1/2	Science - Forces (Yr 5)
	- identify the effects of air resistance, water resistance and friction, that act between moving surfaces
	English - Spoken language
	- articulate and justify answers, arguments and opinions
	- use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas
	- consider and evaluate different viewpoints, attending to and building on the contributions of others
	History - Key stage 1
	- events beyond living memory that are significant nationally or globally [for example, the Great Fire of London, the first aeroplane flight or events commemorated through festivals or anniversaries]

Relates to:

Workshops & Theme Days	Shows	Trails	Other exhibits
<ul style="list-style-type: none"> Fantastic forces (KS2 upper) Pushes and pulls (KS1) High Flyers day (KS2) 	<ul style="list-style-type: none"> Field Day Forces (KS2) Launch it! (KS2) 		<ul style="list-style-type: none"> Happy landings Launch it! Will it fly Hot air balloon

