



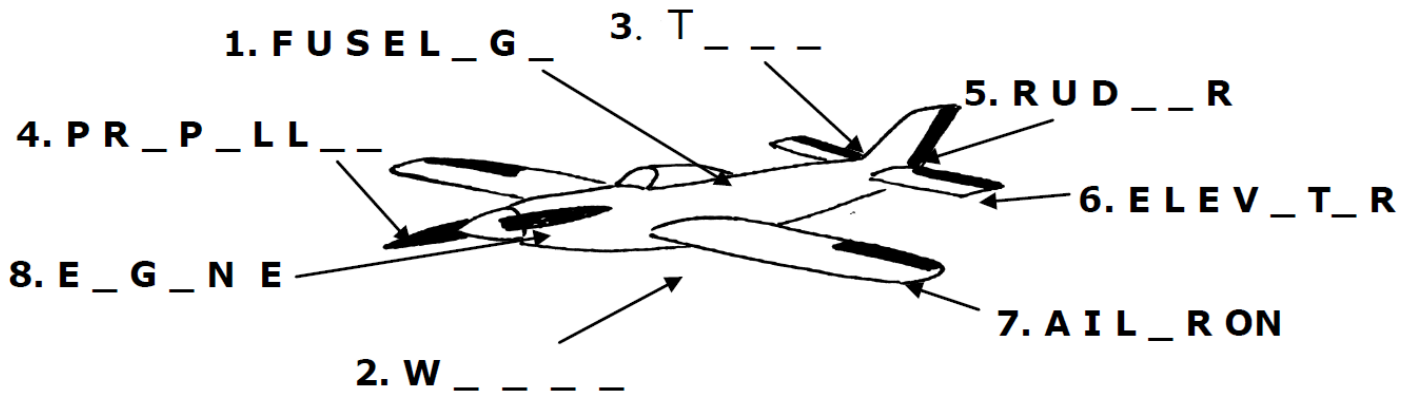
Air Activities Badge Stage 2

Name: _____

Troop: _____

Patrol: _____

Go to the **Physics of Flight Laboratory** (next to the shop) and use the wind tunnel interactives to find the names of the most important components of an aeroplane. Add them to the diagram.

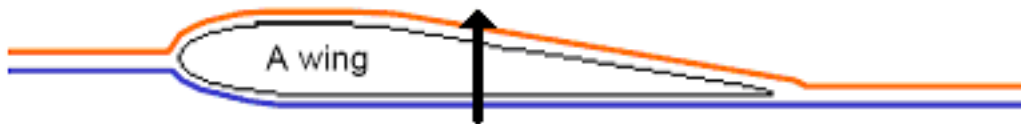


Parts 5,6 and 7 are called **C L** surfaces. The pilot uses them to move the aircraft in the direction he wishes to fly.

For more useful key words please see the wordsearch on Page 8.

Find the Wind Tunnel that demonstrates how an aircraft wing works.

Draw and label the airflow over this wing to show how an aerofoil provides lift.



Draw an arrow on the diagram to show the direction in which the wing must move for the aircraft to take off.

Name the force marked by the arrow _____

Helicopter rotor blades are aerofoils that spin. Is this statement true or false? Check the helicopter interactive to find out.

True False

Explore the Pioneers of Flight

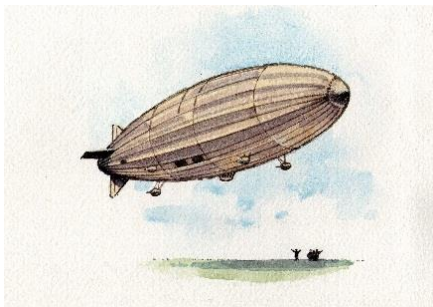
Explore the gallery above Hall 1! Discover 3 different types of aircraft used by the Royal Navy to get high in the sky.



What is this type of aircraft?

In what year was it used?

What was the name of its pilot?



What is this type of aircraft?

Discover the name of one famous airship.

Was this type of aircraft ever used during the First World War?



What is this type of aircraft?

What does it have instead of wheels?

Collect pictures or drawings of 6 aircraft in the boxes below. Don't forget to identify the name of your aircraft and to complete the fact boxes!

Sopwith Pup: **Biplane**

Look at the machine gun on this aircraft can you spot a problem? Find out how you could you solve it? :

Dragonfly Helicopter

What has this aircraft been used for in the past? :

Swordfish

Which famous German battleship did this aircraft help sink?

Seafire

Aircraft carriers have short decks to land on, they must stop quickly to avoid ending up in the sea. Look around this aircraft carefully, what has been added to help it stop in time?

Find 2 more aircraft that interest you...

Name of aircraft:

Find and record one interesting fact about your aircraft:

Name of aircraft:

Find and record one interesting fact about your aircraft:

Go to Hall 4, where Concorde is kept.

Name the structure on the underside of an aircraft designed to support it on the ground and enable it to move along the runway?

U N D E R C _ _ R _ _ _ E

CONCORDE

Concorde was the world's first supersonic commercial aircraft.

Look in the cockpit to find out how many miles Concorde could fly in a minute

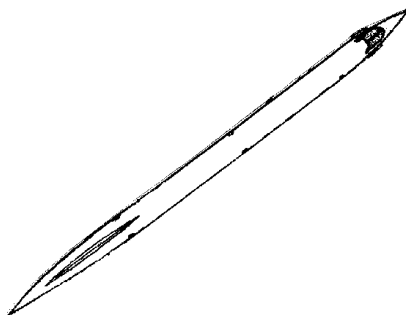
..... miles per minute.

Multiply this by 60 to give you miles per hour

..... miles per hour.

This is MACH 2—twice the speed of sound, faster than a bullet!

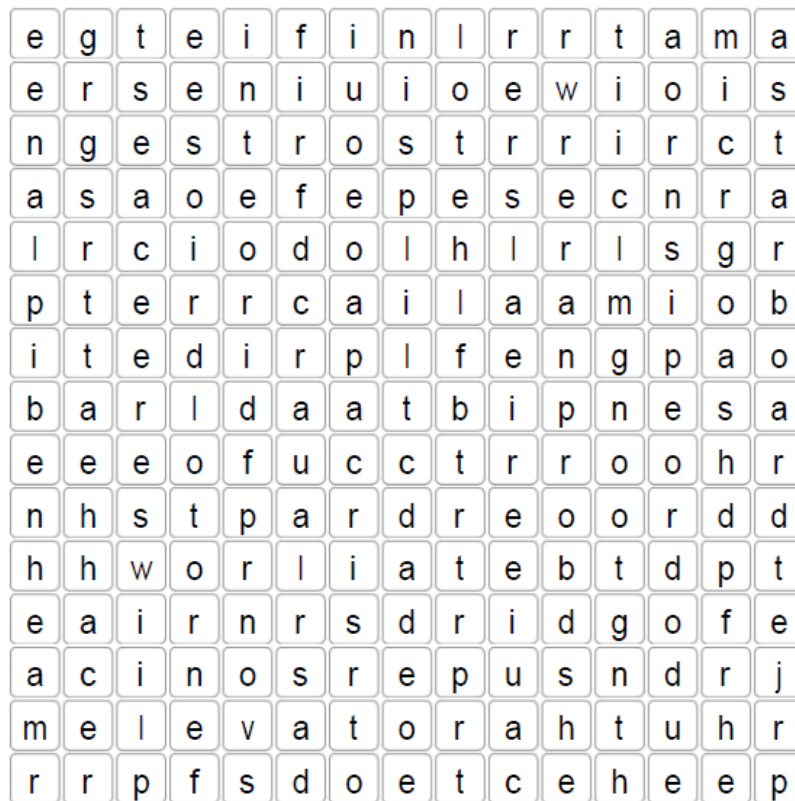
Concorde's wings were designed to fly at supersonic speeds. They have an OGEE shape. Add them to the fuselage below.



Well done you have completed the Aircraft Knowledge Trail!
This will help you complete your Air Activities Badge Stage 2.

This wordsearch has all the key words you need to help you finish your badge. Can you find them all?

Aircraft Knowledge Key Words



Words to find:

aerofoil, aileron, aircraft carrier, airship, biplane, elevator, fuselage, helicopter, jet, nose, port, propeller, rotor blades, rudder, starboard, supersonic, tail, undercarriage, wing.