Girlguiding
Shropshire county

ROYAL AIR FORCE museum COSFORD

Challenge Badge

Fun ‘n’ Flight Challenge Badge

This challenge was developed in conjunction with the RAF Museum Cosford; it can be used for any section but works best with Rainbows and Brownies.

Since this challenge was first published the Cosford museum has changed the displays so the challenge has been revised to accommodate these changes.

As a Unit visit an RAF museum or any museum associated with flight.

The challenge pack is split down into 3 sections;

- Crafts
- Make and Fly
- Do

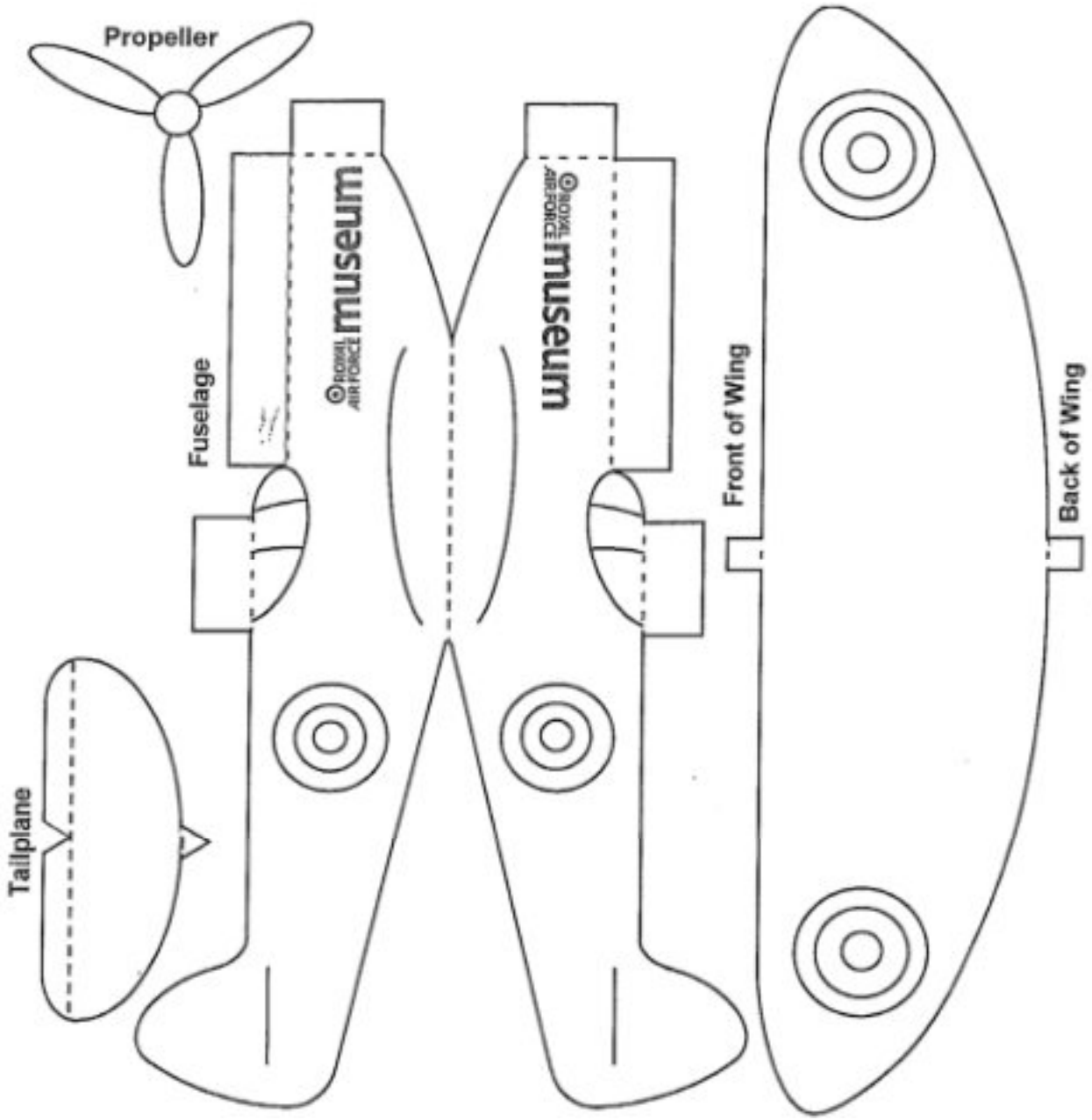
Challenges should be completed for each section and we recommend the following numbers should be completed for the badge, however, please feel free to adapt to the needs of your unit.

- Rainbows 6 challenges
- Brownies 8 challenges
- Guides 10 challenges

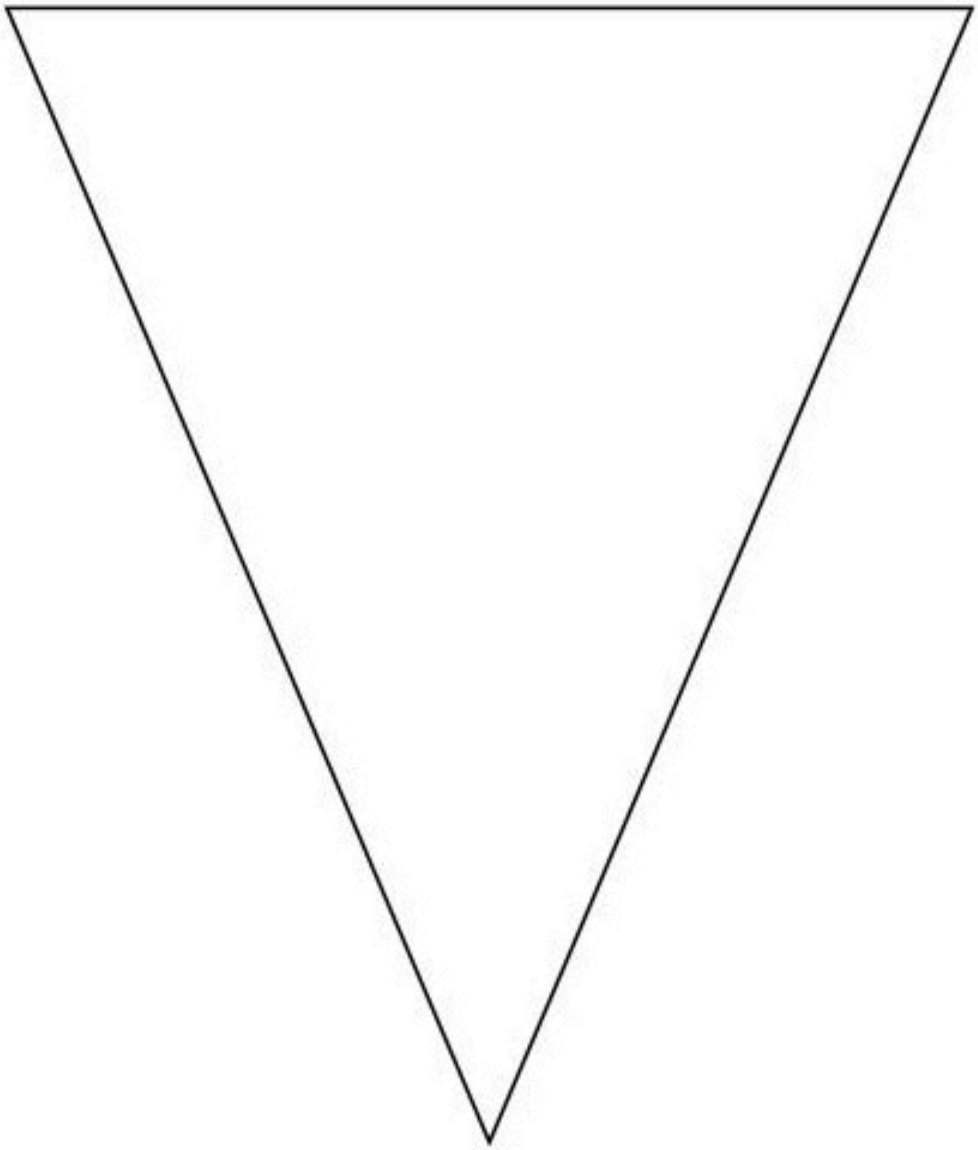
Badges can be ordered from the Badge Secretary using the booking form at the back of the pack. Cost for badges is £1 each.

CRAFT

Make your own spitfire – colour it in, cut around the edge of each of the parts and fold along the dotted lines. Slot the tail plane into the smaller straight slot on the tail and the wings into the longer curved slot. Glue the fuselage (body) and tail together – finish it off by gluing the propeller onto the front



Use the template below to make bunting – you could colour it in like the Union Jack!



- Make a loom band creation with the colours, red white and blue from the symbol for the RAF – the roundel

- Make and decorate a plane using Lolly sticks

  Use a clothes peg and 2 lolly sticks, decorate and stick together as shown. A smaller stick can be decorated and used for the tail. Be creative… can you add a message to a tail to be pulled along by your plane.

Make a Flying Saucer

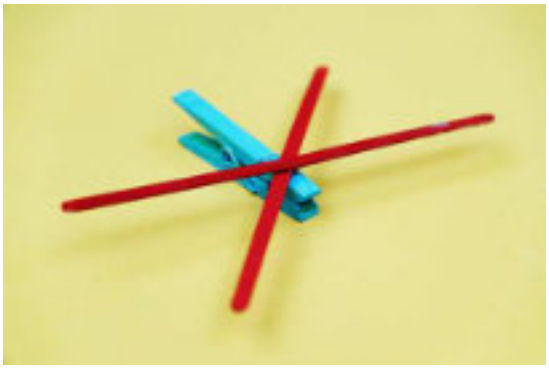
- 2 paper plates
- 1 Styrofoam coffee cup
- Silver acrylic paint
- Craft jewels
- Instant grab glue, hot glue gun or glue dots
- Newspaper
- String (optional for hanging)

What you do:

1. Paint the backside of both paper plates and the Styrofoam cup silver.
2. Turn paper plates over. Twist newspaper and glue it inside one of the plates. This will give the plates some cushion and filler, keeping them from collapsing.
3. Glue the plates together, silver sides facing out.
4. Cut the Styrofoam cup in half, keeping the top half, discarding the excess. Glue small craft jewels around the cup and glue the cup to the top of the saucer. Glue a large craft jewel to the top of the cup.
5. Glue craft jewels around the outside of the saucer, leaving about an inch of space between each one.

Design and build a helicopter using egg cartons or lolly sticks

Using 2 egg holders cut out a helicopter shape. Rotor blades can be added with a split pin and cardboard. You could make a helicopter out of a peg and lolly sticks in a similar way to the aeroplane.



Create a flight related biscuit or fridge magnet.
Create an aeroplane biscuit and decorate it or create a pilot biscuit. Either of these designs could also be adapted to make fridge magnets from Fimo or other moulding clay.

Make Rocket Wands

Rocket wands like the ones shown here can be purchased from Baker Ross or made using a variety of craft items to decorate, cardboard shapes, straws and crepe paper for tails.

Rocket Weaving Bookmarks

These can also be purchased from Baker Ross or made using foam and ribbon. Slits should be cut by an adult or under supervision for guides as a craft knife will be needed.

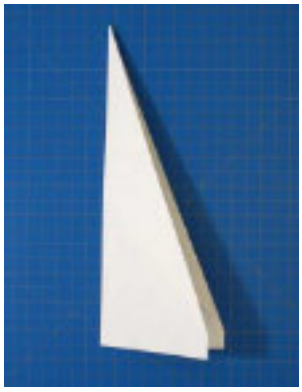
MAKE & FLY

Make a hot air balloon challenge

Make a hot air balloon using a carrier bag and see how high you can “fly” it with a hairdryer. You should provide cardboard, string / cotton, thin lightweight carrier bags and straws. Compete against other groups to build and fly your design.

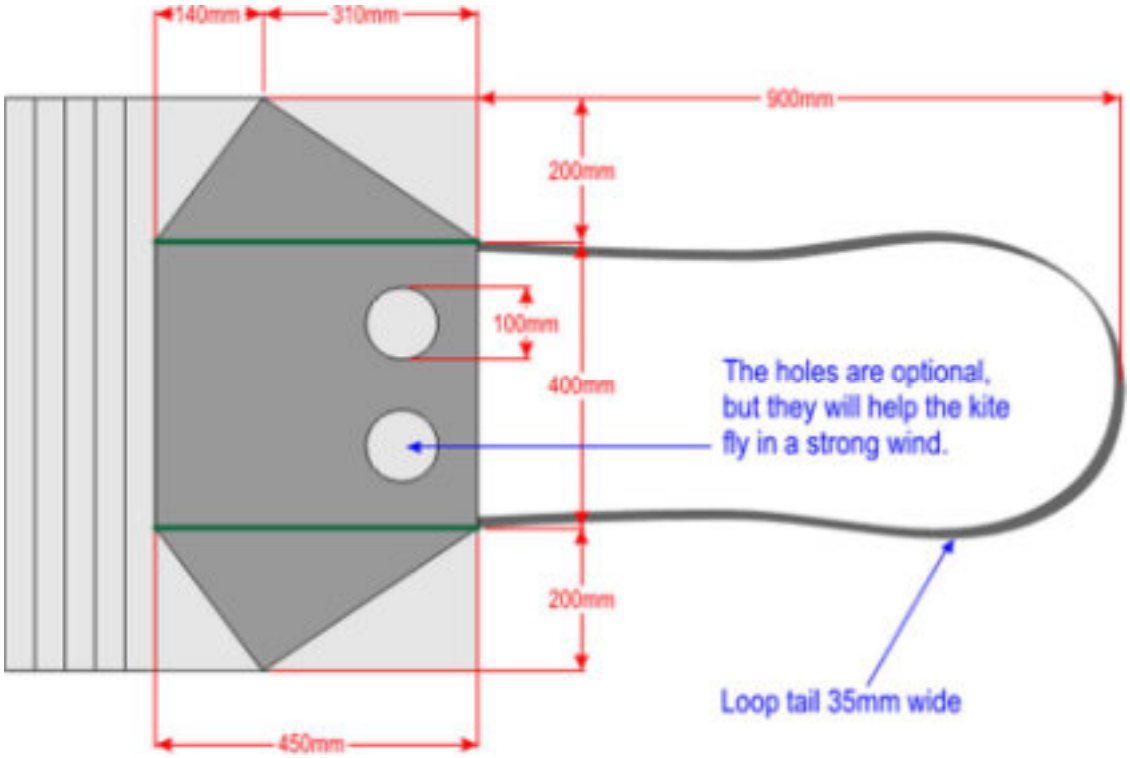
Make and fly a paper aeroplane.

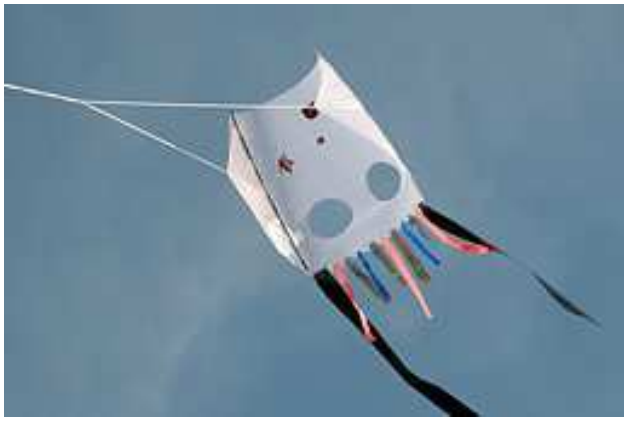
There are lots of different techniques that can be used to fold a paper aeroplane.



Make a Kite

A kite can be made using 2 bamboo canes, a carrier bag or black bin bag, string and sellotape. These can also be decorated.





Kite Instructions

Cut the bin-bag to the shape in the drawing. Keeping the plastic flat, use sellotape to stick the two sticks to it. Reinforce both wing tips with sellotape. For the tail, make a loop of polythene about 1.8m (6′) long and 35mm (1½″) wide from the left-over material from the bin-bag, and stick each end to the kite. The kite will fly without a tail, but will fly better with one. Cutting two holes towards the rear edge of the kite will help it fly in stronger winds.

To attach the bridle, make a hole at each ‘wing-tip’ and tie a piece of thin string about 2400mm (7′10″) long to each hole. At the middle of the bridle tie a small loop in the string to attach the line. Tie on the line, which for a kite of this size only needs to be slightly thicker than button thread, and you are ready to go.

Flying Straw Plane

Materials

- Straw (look for a long straw like the ones for 44oz drinks)
- Strips of heavy paper (index weight)
- Scissors
- Scotch tape

Directions

1. Cut 2 strips of paper from heavy paper.
2. One strip should be 1/2 inch wide and 9 inches long.
3. The second strip should be 1/2 inch wide and 7 inches long. Tape the ends together on the 9 inch strip of paper.
4. Next, tape the ends of the 7 inch strip of paper together.
5. Place the straw inside the first loop and tape it about inch from the end.

6. Next, tape the smaller loop about 1 inch from the front of the straw making sure both loops are taped to the same side of the straw. This is very important because the planes will not fly as well if they do not sit up straight on the straw.
7. If you have trouble taping the loops to the straw you can also just overlap the 9 inch strip 1 inch and tape the ends together so that a straw can slip in between the overlapped edges. Repeat these steps with the strip that is 7 inches long.

Flying the airplane

1. Place your pointer finger over the back end of straw after getting the loops securely fastened to your loop airplane.
2. The back end of the airplane is where the largest loop is located. Hold the straw between your thumb and another finger.
3. Push your finger forward with a quick motion to make your plane fly.
4. If your loop airplane flies about 20 or 30 feet it is built correctly.
5. If it doesn't fly that far try moving the straws closer together. Then try moving the loops further apart.
6. Keep trying until your plane flies correctly.

Science behind the experiment

In these cool science experiments four forces are acting on loop airplanes as they fly through the air. The four forces are gravity, lift, thrust and drag. The force of gravity is always pulling airplanes toward the Earth.

The lift, provided by the loops on this airplane, provide the lift that keeps it in the air. The thrust is provided by your finger as you push the straw at the back of the loop airplane. The drag is the resistance of your airplane to fly through the air. Take it further and find out about these forces.

An alternative kite activity for younger girls. Cut the middle from a paper plate, decorate with ribbons and go fly your kite!

Junk Model Rockets

Use a variety of junk or craft modelling items to produce rockets

DO

Design an In Flight Meal

Given a budget, design a small in flight meal or range of sandwiches to be served on board your flight. Make and market your meal.

Have an inflight film night.

Arrange your seats in the shape of an aeroplane and have a popcorn and film night. You can make your own popcorn and experiment with a range of toppings. Try making popcorn on the stove and in the microwave and compare them.

Plan a holiday and budget

Use magazines from a travel agent, plan and budget for a holiday for 4 people.

Pick your ideal travel destination and do some fact finding about the country. Where would you go? What is there to see and do there? Is it suitable for an elderly person or a young family? Do you need a visa? Find out about passport applications.

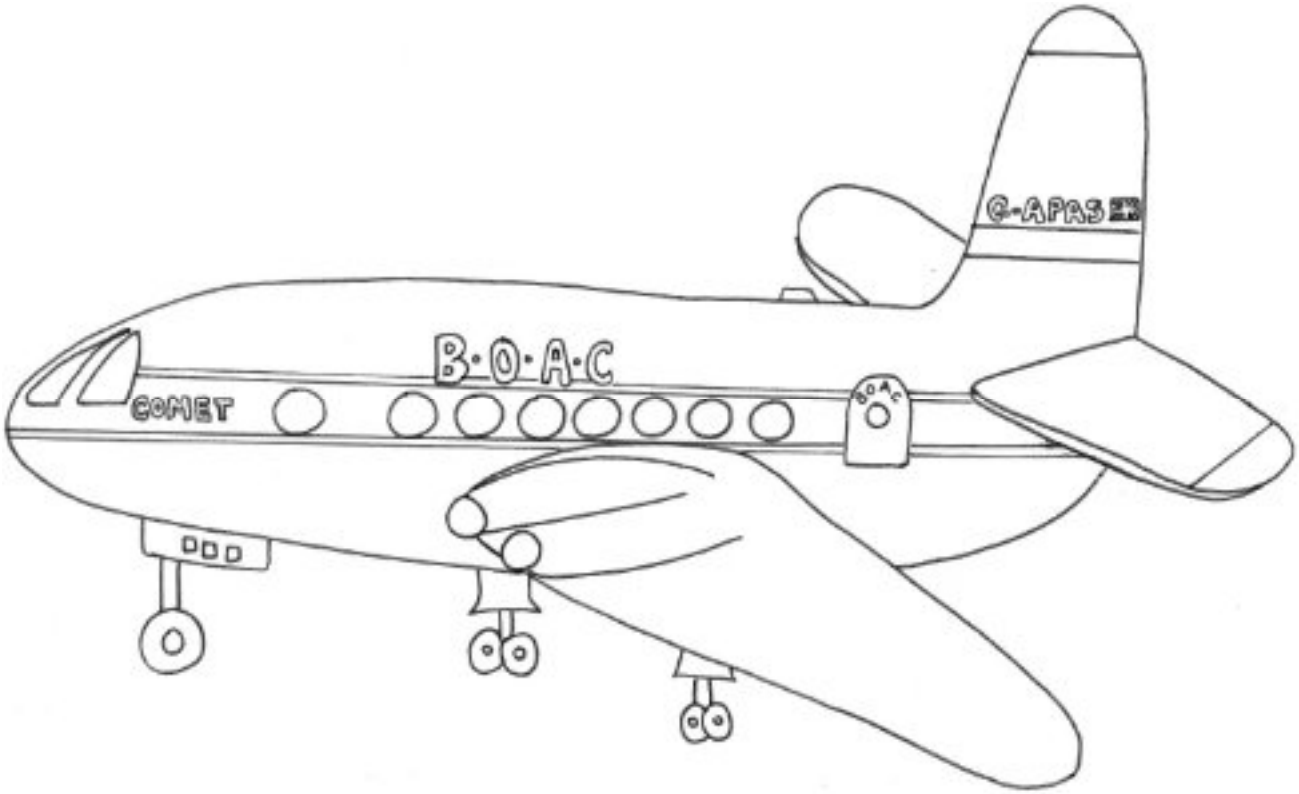
Design a postcard and a stamp

Postcards from abroad usually show an area of the county and the stamps are specific to the country. Either design a postcard and stamp for a country you would like to visit or for the area where you live.

Fundraise for a charity involved with flight

Invite a charity to talk to your group that is involved with flight. This could be Air Ambulance Charities, Dreamflight (who provide holidays for children) or another local charity. Undertake a fundraising event for them and try to get local press coverage to show Girlguiding in action.

Look at the drawing of an old De Havilland Comet.



1. Where would you sit if you were a passenger? Draw yourself sitting on the plane and where the pilot would sit?

Parts of an Aeroplane – fill in the spaces on the aeroplane using the words below:

Fuselage – the body of an aeroplane

Wing – the part which supports the aeroplane when flying

Tailplane – small horizontal wing at the tail of the aeroplane

Fin – the upright surface on the tail

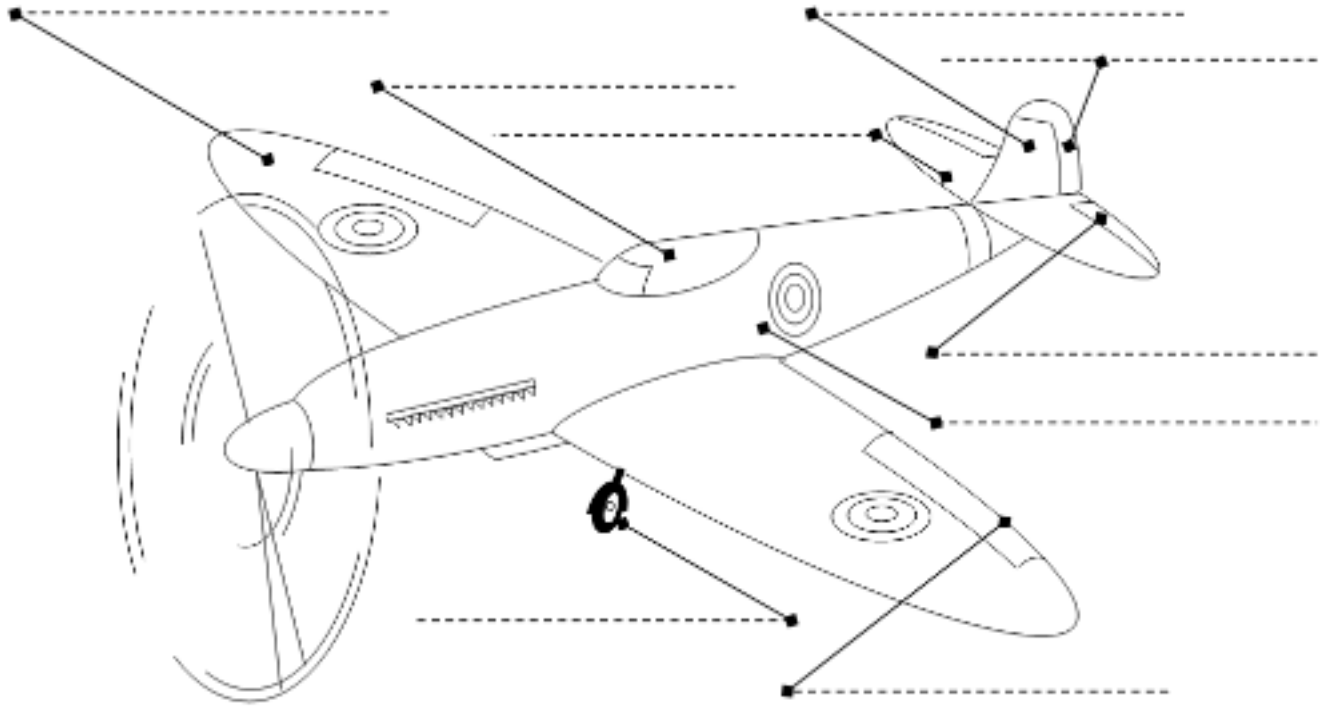
Undercarriage – the landing gear and wheels

Cockpit – where the pilot sits

Rudder – hinged rear part of the fin which helps the pilot to steer

Aileron – hinged rear edge of the wing

Elevator – hinged rear part of the tailplane



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Shropshire county

Fun n Flight Badge Order Form

Name	
Address	
Email	
Unit	
County	

Postage: £0.50

No. of badges: _____ @ £0.50 each = £ _____

Plus postage @ £1.00 Total £ _____

Date badges needed for: _____

Make all cheques payable to: The Guide Association Shropshire Depot (Badge Account) and post to:

Mrs Marion Wynn
15 Fair Oak
Newport
TF10 7LR