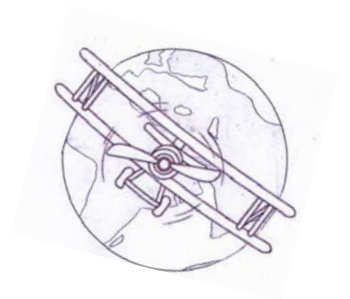


**The  
Senior Section**

*2nd Hull North Division  
Ranger Unit*



# Amy Johnson Challenge



## Amy Johnson Challenge

2016 is the 75<sup>th</sup> anniversary of the death of Amy Johnson CBE, the pioneer aviator.

Born in Hull on July 1<sup>st</sup> 1903, Amy Johnson became the first woman to fly solo from the UK to Australia and set a string of other records during her flying career.

We have created this challenge to celebrate Amy's life and achievements. There are three sections:

- The life and world of Amy Johnson
- Flight and flying machines
- Amy's solo trip to Australia

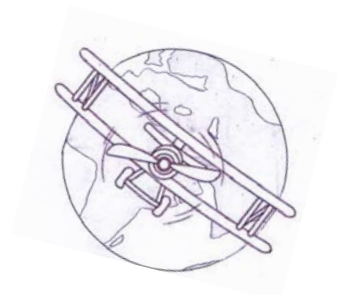


To complete the challenge we suggest that you choose and carry out two activities from the first section and one activity from each of the second and third sections but, of course, you could do more.

We have chosen challenges to suit different ages and interests. They can be completed as sixes, patrols, small groups or a whole unit. Please feel free to adapt them as needed to suit your group.

Badges are £1.25 each and a badge order form is provided at the back of this pack. Print it off, fill it out and send with your payment to 2<sup>nd</sup> Hull North Division Ranger Unit, c/o Tarn Hows, Rise Road, Skirlaugh, Hull, HU11 5BH. To help us manage the badges and ensure we have sufficient it would help to receive orders, or an indication of the number of badges required, by 15<sup>th</sup> May 2016.

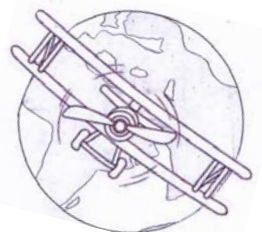
Thank you for taking part in this challenge. We'd love to hear what you chose to do and, if possible, see some photos of you completing the activities. Our email address is [hullnorthrangers@yahoo.co.uk](mailto:hullnorthrangers@yahoo.co.uk).



## The life and world of Amy Johnson

- Find out some facts about Amy Johnson and present them in any way you choose. This could be a leaflet, poster, radio / news report or song.
- Listen to the story of Amy Johnson and colour in the picture in this pack.
- Amy has suddenly become internationally famous after growing up in Hull. Create a roleplay to act out Amy's first outing amongst high society or research the people she was friends with and imagine what their first meeting must have been like.
- Find out about Amy's achievements and the different records which she set. Design a poster to celebrate her achievements and inspire other women. Discuss her determination to succeed - what are you determined to achieve in your life and how are you going to do this?
- As well as being the first woman to fly solo from the UK to Australia, Amy was also the first woman in Britain to obtain a Ground Engineer's Licence. Research other female firsts.
- Amy was a fashion icon. Design your own flying suit using the template in this pack. You could take this further and make your flying suit using recycled materials.
- Hold a thirties evening - music, food, clothes and dancing.
- After July 1<sup>st</sup> 2016, take a trip to find one or more of the Amy Johnson moths displayed around Hull and East Yorkshire.  
[amyjohnsonfestival.co.uk/](http://amyjohnsonfestival.co.uk/)
- Visit or look at a picture of Amy's statue in Hull city centre. Discuss what you think about it. Design your own statue to commemorate her achievements - this could be a drawing or a salt dough or papier Mache model.
- Visit the exhibition at Sewerby Hall near Bridlington to find out more about Amy.

[www.sewerbyhall.co.uk/hall/exhibitions/](http://www.sewerbyhall.co.uk/hall/exhibitions/)



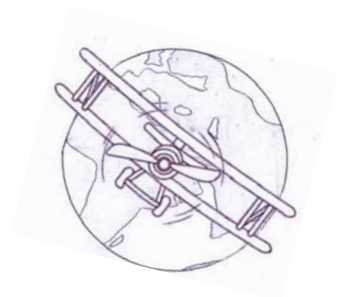
## Flight and flying machines

- Find out about the planes which Amy Johnson flew. Design your own plane livery using the template in this pack or make your own model plane using junk materials such as boxes and bottles.
- Make a paper aeroplane. Try different designs and see which flies furthest. Some ideas are provided in this pack. Find out how planes manage to take off and stay in the air.
- Aim a bit higher - build and launch a space rocket. Some ideas are provided in this pack. Understand how your rocket is powered.
- Visit an aircraft museum such as The Yorkshire Air Museum at Elvington. The South Yorkshire Air Museum near Doncaster, or the Manchester Airport Runway Visitor Park.  
[www.southyorkshireaircraftmuseum.org.uk/](http://www.southyorkshireaircraftmuseum.org.uk/)  
[yorkshireairmuseum.org/](http://yorkshireairmuseum.org/)  
[book.manchesterairport.co.uk/manweb.nsf/Content/runwayvisitorpark](http://book.manchesterairport.co.uk/manweb.nsf/Content/runwayvisitorpark)
- Learn about being a flight attendant and what to do in an emergency. Perhaps you could ask someone who is, or has been, a flight attendant or pilot to come and talk about their job.
- Play 'Amy Tag' or 'Flying Tag'. Instructions are provided in this pack.



## Amy's solo trip to Australia

- Follow Amy's trip to Australia on a globe or map of the world. A list of her pit stops is provided in this pack. Can you find all of the places and plot her route on your own map? What route would you take to Australia and why?
- You are trying to follow in Amy's footsteps on a solo flight to Australia. What would you take with you and why? You could even create two lists - one from 1930 and one for a journey today.
- Take an imaginary flight in Amy's footsteps and complete an activity from each country in which you land.  
You could arrange chairs in the layout of a plane for your flight - don't forget the flight attendants' safety instructions and in-flight food and entertainment. Create a passport or boarding card and have it stamped at each place you visit.
- Make and / or eat food from one or more of the countries Amy visited. How about holding an international food-tasting evening?
- Hold an Australian-themed welcome party for Amy to celebrate her achievement.



## Amy Johnson - Pioneer Aviator

Amy was born in 1903 and grew up in Hull where her father had a fish export and import business. She gave no sign of any interest in flying and found a '25p joy-ride' when she was sixteen far from the delight it had promised to be.

Whilst working in London as a typist, she found herself at a loose end one weekend and visited an aerodrome. After this she became at first interested and then absorbed in the biplanes she had watched taking off and landing.

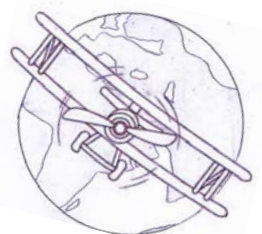
She decided to learn to fly but, to her dismay, discovered that it was an expensive business. However, she saved from her wages and with help from her parents began flying lessons wearing a borrowed flying suit and helmet. Amy proved a natural pilot and soon gained her licence. She also became the first woman in the country to gain a Ground Engineer's certificate.

The next challenge Amy set herself was to beat the record for a solo flight from England to Australia and become the first woman to make this journey. Again with help from her parents, she bought a second hand Gypsy Moth biplane which she named 'Jason' and had painted green and silver.

The journey required a lot of planning. There would be no radio contact with the ground, maps were very sketchy and some of the areas she would fly over were uncharted. Amy laid in supplies for every emergency she could think of - crashes into desert, swamp, jungles and shark-infested seas.

In the early morning of 5<sup>th</sup> May 1930, watched by her father and a few friends, Amy climbed into the open cockpit and set off from Croydon on her adventure. She crossed Europe safely and, despite a forced landing in a sandstorm in Iraq, arrived in Pakistan in record time. People had started to take notice and Amy found the world was following her exploits.

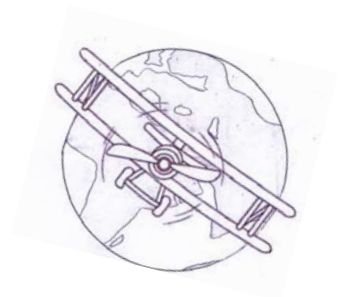
She was forced to crash land in India damaging one of Jason's wings. Help was on hand from a local carpenter and tailor who carried out running repairs. Over Burma she battled on after



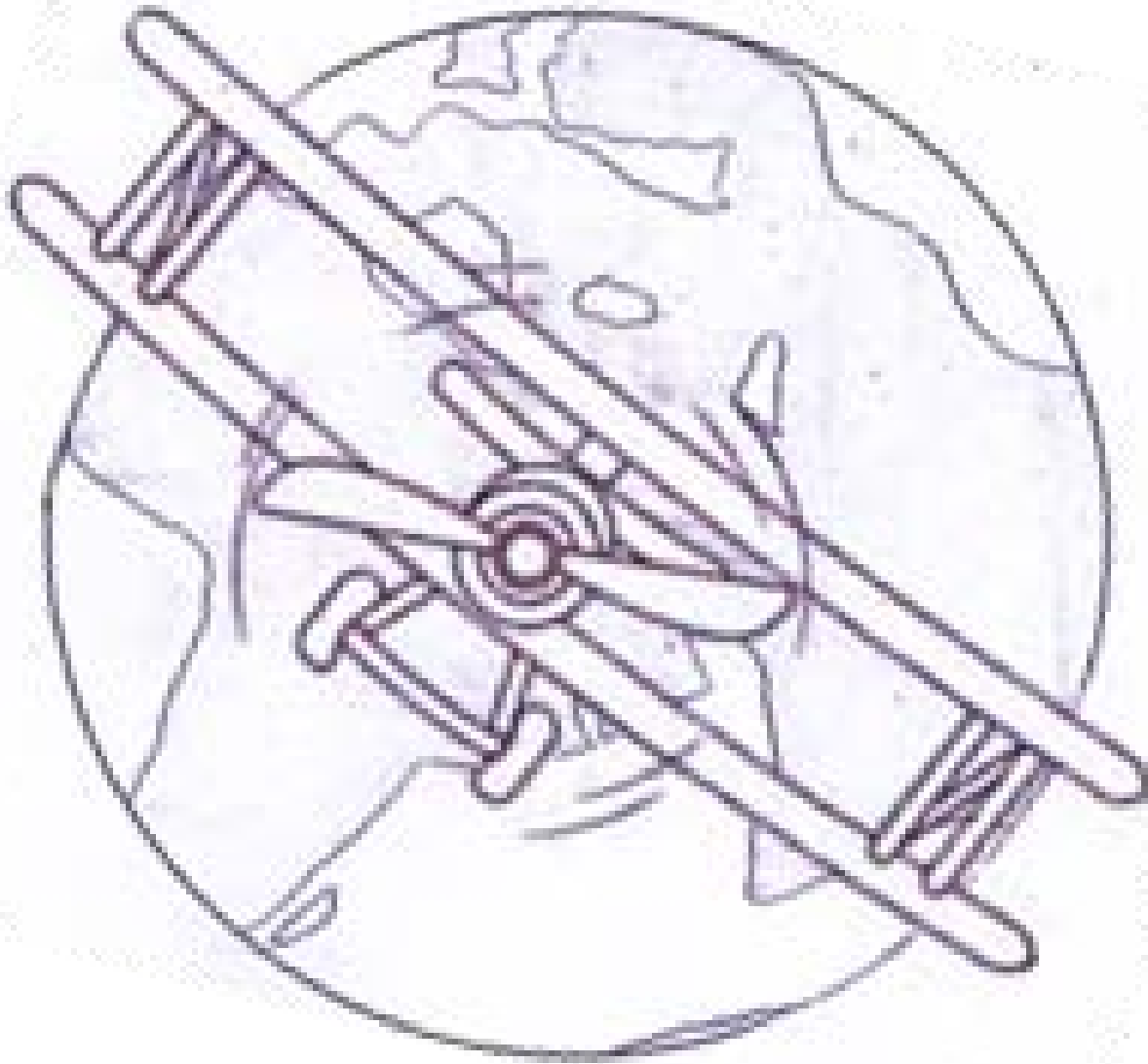
running into a blinding monsoon rainstorm. Again, help was at hand to mend a hole ripped in Jason's wing after a bumpy landing in Rangoon. Students from the local college used shirts made from salvaged aircraft fabric to repair the damage.

Finally, on 24<sup>th</sup> May, 19 and a half days after she left Croydon, Amy landed in Australia to be greeted by large, cheering crowds. The monsoon may have prevented her from setting a new record time for the journey, but she had flown into aviation history and become a superstar.

(You can find more facts about Amy Johnson in a short biography at [amyjohnsonfestival.co.uk/](http://amyjohnsonfestival.co.uk/).)







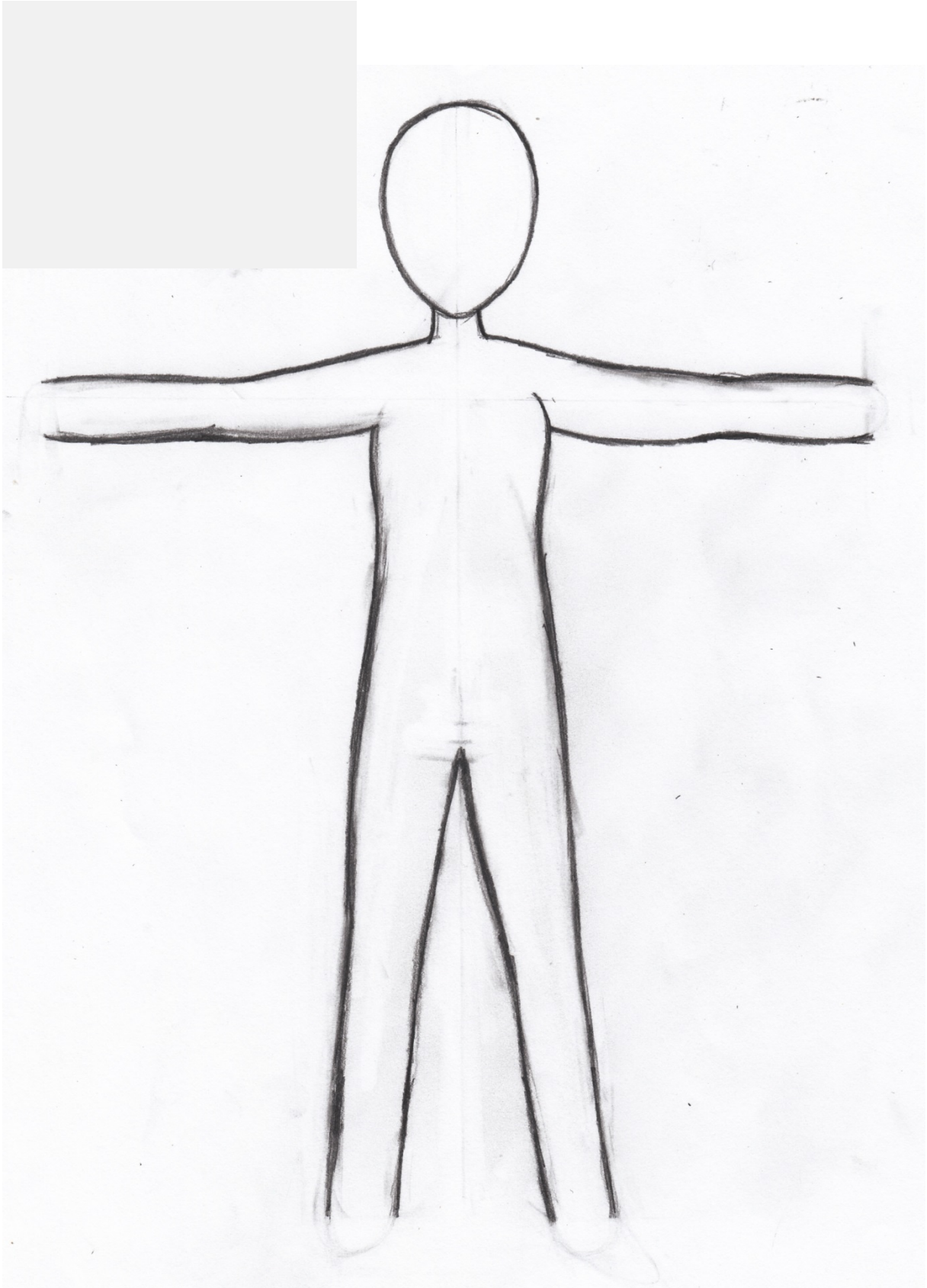
Amy

Johnson

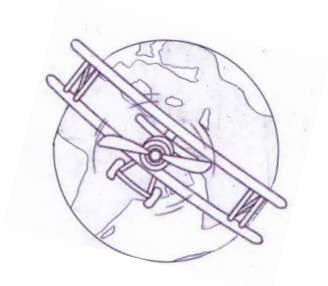


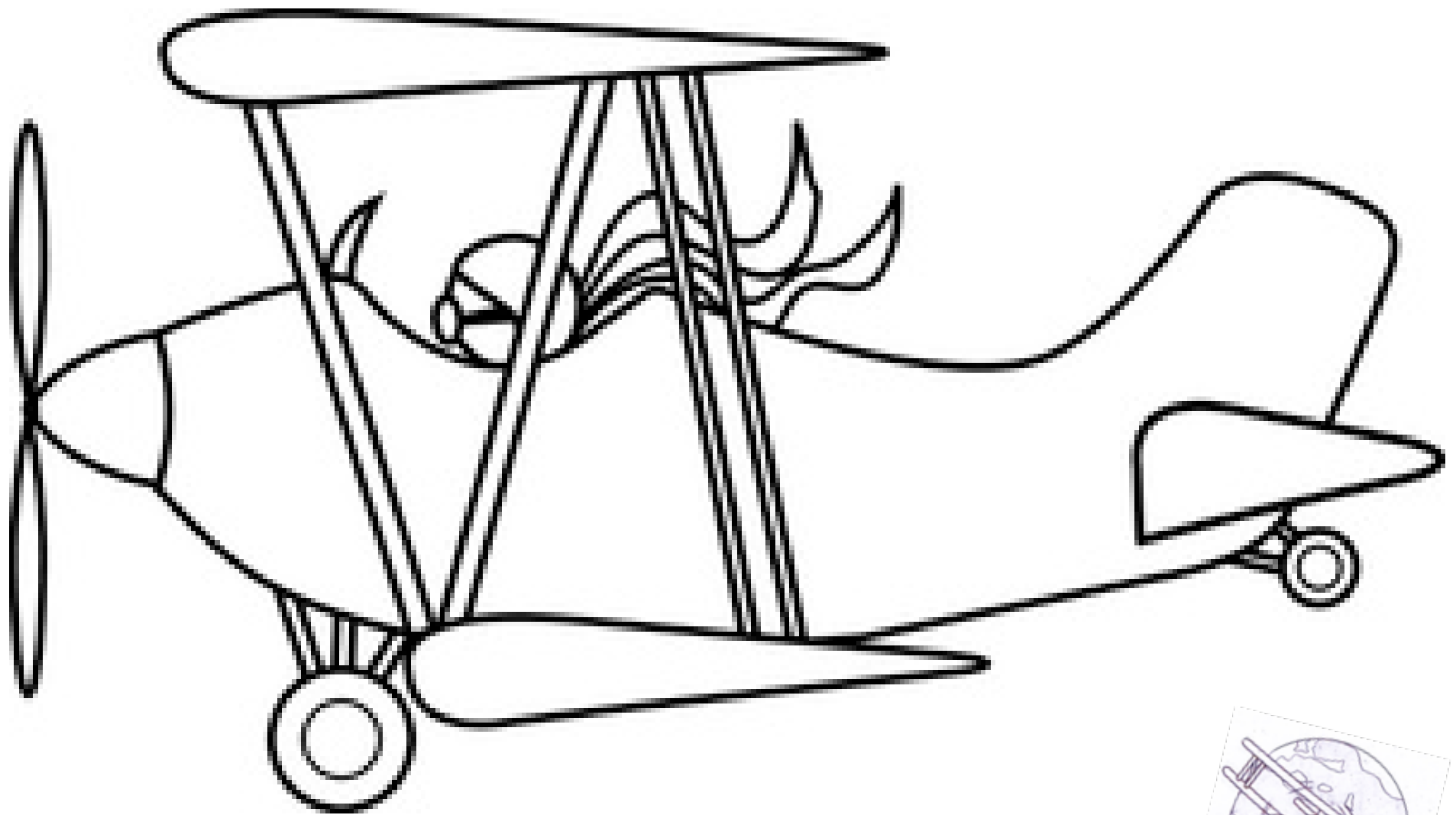
**Solo flight to Australia, 1930**



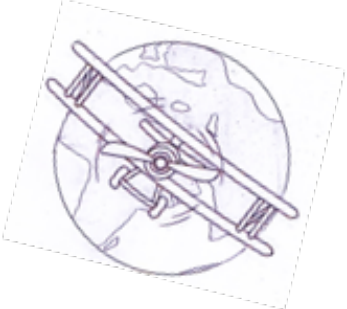


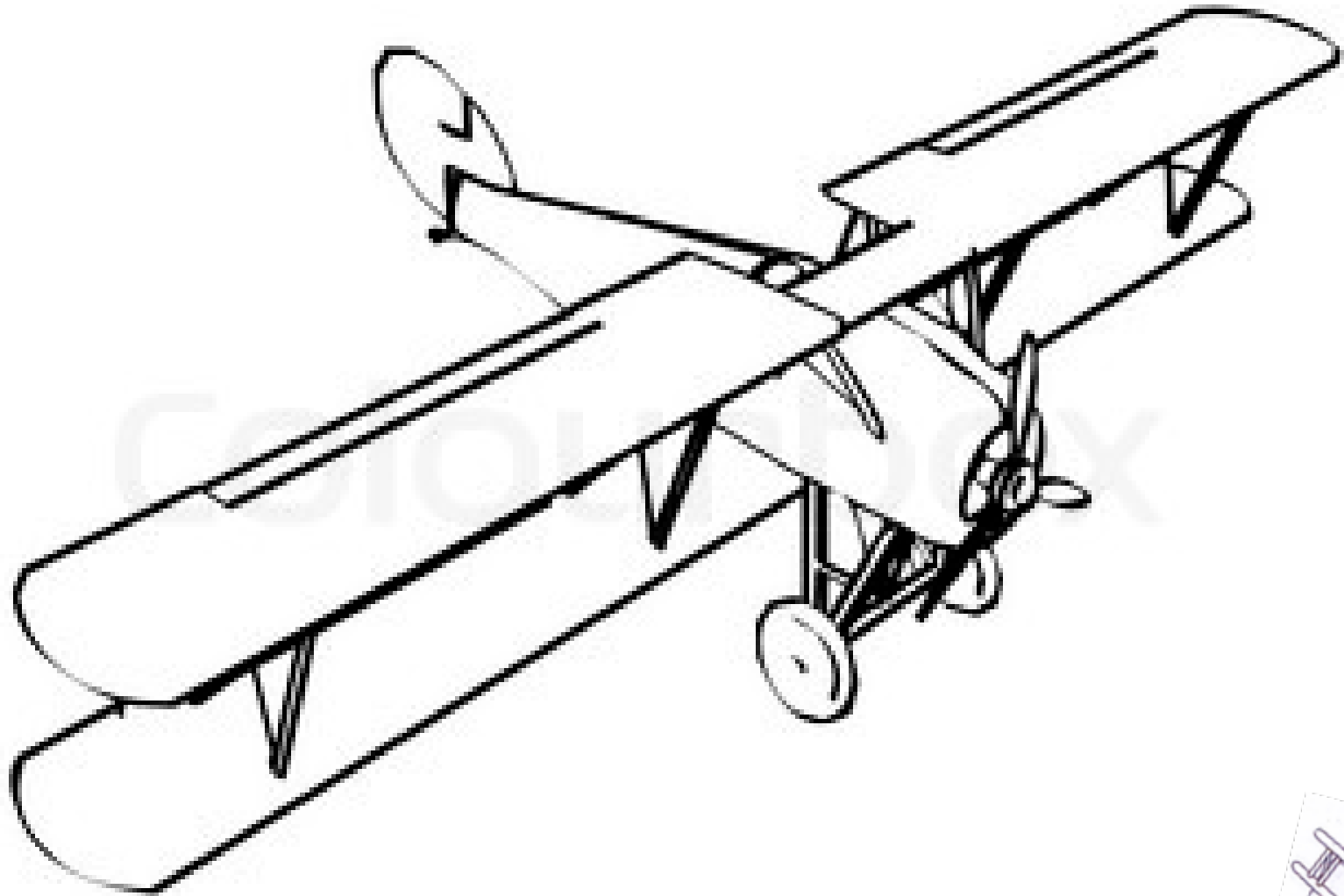
**My flying suit**



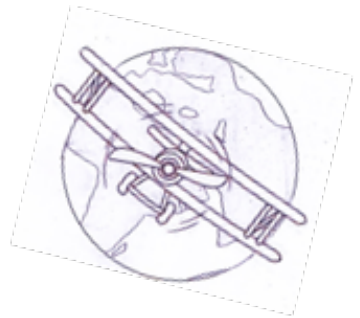


**My aeroplane**



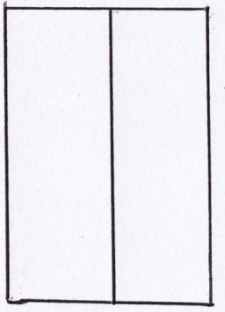


COLOMBUS

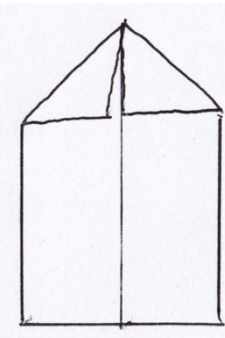


# Paper planes

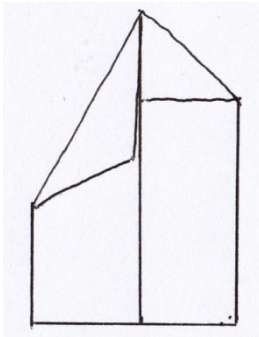
## Paper dart



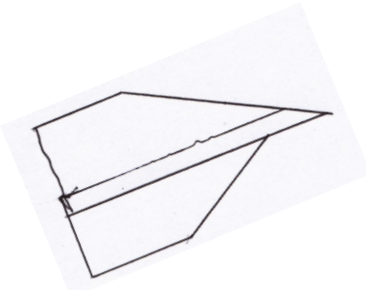
Take a rectangular sheet of paper and fold it half lengthways. Open it out giving a fold in the centre of the paper.



At one end of the paper, fold both corners into the centre fold.

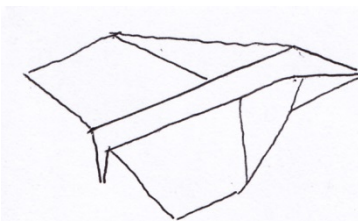


Fold both of the sloping sides into the centre fold.



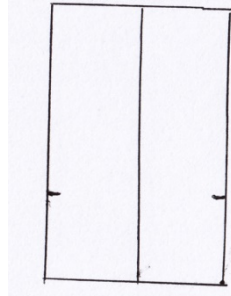
Fold the plane in half again along the centre fold.

Then fold the wings down about 2 cm above the centre fold.

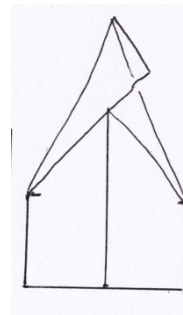


Open out the wings so they stand out from the centre fold.

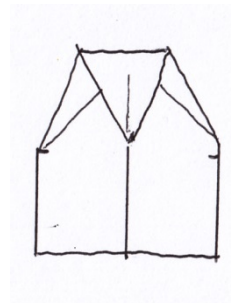
## Paper glider



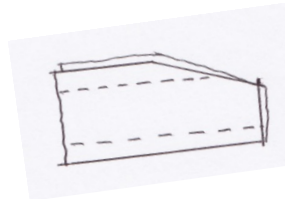
Take a rectangular sheet of paper and fold it half lengthways. Open it out, measure  $\frac{2}{3}$  of the way along both long sides and make a pencil mark.



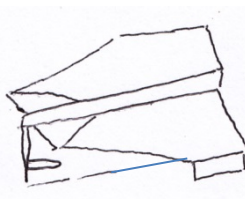
Bringing the top right hand corner over make a fold that runs from the centre top to the pencil mark on the right hand side. Repeat on the left. You may have a small flap left over.



Fold the nose down so it is level with the pencil marks. Tuck the small flap away. Fold the whole shape in half with the nose on the inside.



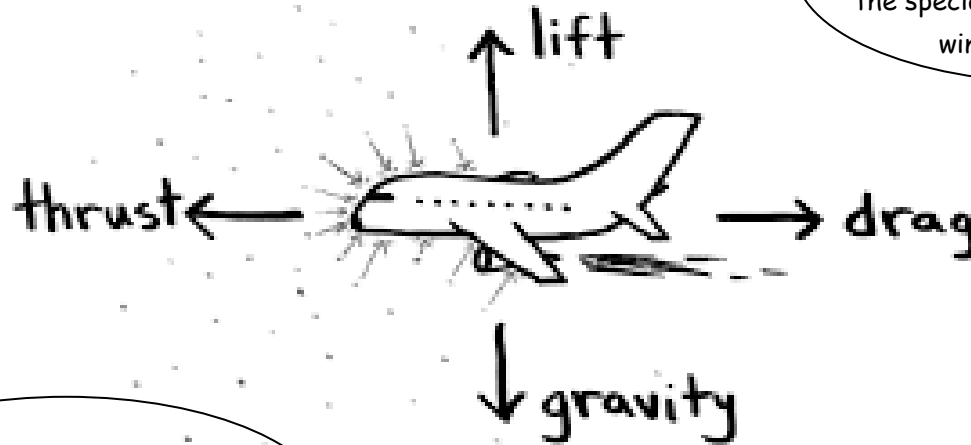
Fold both sides down about 2 cm from the centre to create the wings. Fold down the wing tips about 1 cm.



A paper clip on the nose of the glider may help it to fly straight.

## How does a plane stay in the air?

**Thrust** pushes the plane forward causing air to flow over the wings. It is created by propellers or jet engines.



**Lift** is needed for planes to fly. It is created by air flowing over the specially shaped wing. Larger wings give more lift.

**Gravity** pulls the plane down to earth. Lift has to be great enough to overcome gravity

**Drag** slows planes down. To go fast planes need to have a streamlined shape to reduce drag.

You can find out more from the following short videos:

How does a plane fly? HooplaKidz TV [www.youtube.com/watch?v=ulcvE-bDyNc](http://www.youtube.com/watch?v=ulcvE-bDyNc)

Science stories How do planes fly? [www.youtube.com/watch?v=FNvQd\\_d07aw](http://www.youtube.com/watch?v=FNvQd_d07aw)

Science scrapbook How does a plane stay in the air?

[www.thenakedscientists.com/HTML/podcasts/video/scrapbook/show/2011.07.12/](http://www.thenakedscientists.com/HTML/podcasts/video/scrapbook/show/2011.07.12/)



# Water Rocket

You will need:

Plastic squash bottle

Rubber bung or cork with a hole through the centre

Plastic tube from a stick biro

Bicycle pump

Rubber / plastic tubing

Plastic bowl

Drill

Water

Thin card

Sticky tape

Scissors

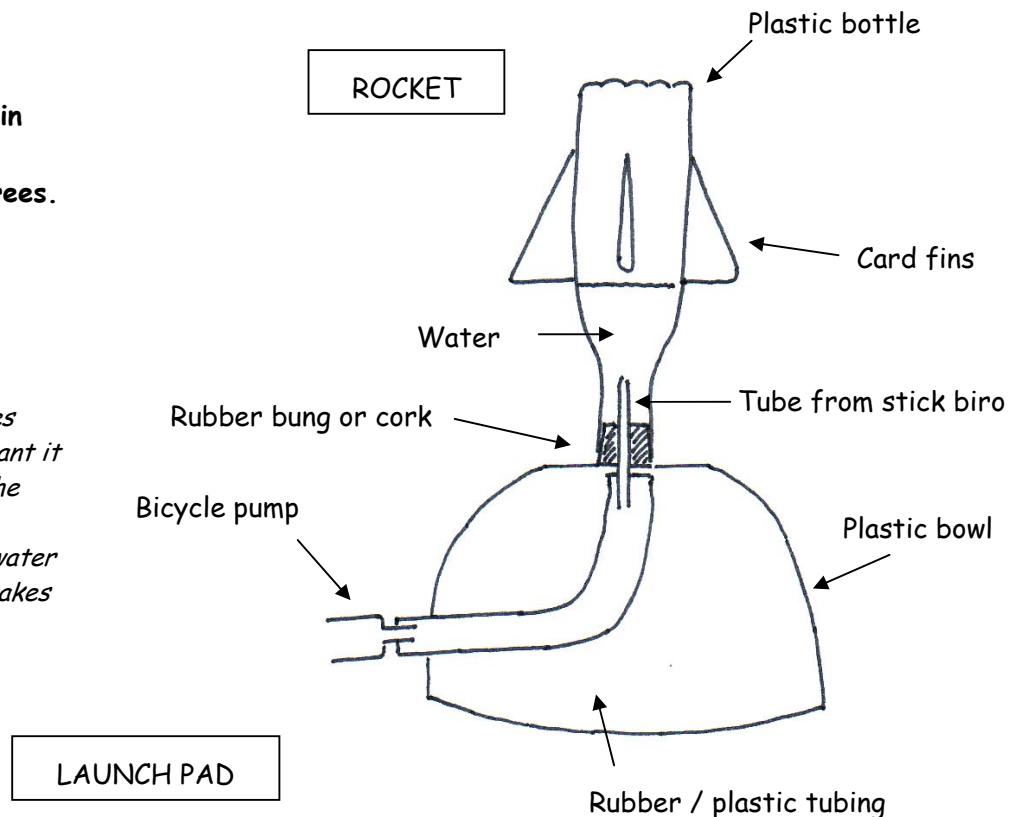
- Construct the launch pad as shown in the picture. (You will need to drill a hole in the side and top of the bowl).
- You can make fins for your rocket with the card and attach them with sticky tape if you wish.
- Pour water in the bottle until it is about half full.
- Invert the bottle and push it on to the bung on the top of the launch pad.
- Pump the bicycle pump and watch the rocket fly!

## WARNINGS

- **Launch your rocket in an open space away from buildings and trees.**
- **You might get wet.**

### The Science Bit

*The force of a rocket comes from the amount of propellant it shoots out. The water in the bottle is the propellant. Compressed air above the water provides the energy that makes the thrust.*





## Turn a cork into a rocket

### You will need:

one teaspoon of bicarbonate of soda  
paper towel (about 10 cm x 20 cm)  
100 ml vinegar  
small plastic bottle  
cork that fits tightly into the neck of the bottle  
paper streamers or ribbons  
drawing pin

- Place the bicarbonate of soda on the middle of the paper towel. Roll up the towel and twist the ends to keep the powder inside.
- Pour vinegar into the bottle.
- Cut some streamers or ribbon and attach them to the top of the cork with the drawing pin.
- Drop the paper towel into the bottle and very quickly push the cork into the neck of the bottle.
- Stand back and wait for your rocket to launch.

### **WARNINGS**

**When the cork is about to launch make sure that you are a safe distance away. Only launch the rocket out-of-doors in an area that is away from windows etc.**

#### *The science bit*

*A chemical reaction between the vinegar and bicarbonate of soda produces carbon dioxide.*

*The pressure created inside the bottle pushes against the cork and sends it into the air.*



You can also make rockets from:

film canisters

[www.bbc.co.uk/bang/handson/fizzbang.shtml](http://www.bbc.co.uk/bang/handson/fizzbang.shtml)

and balloons

[www.creative-chemistry.org.uk/activities/documents/balloons.pdf](http://www.creative-chemistry.org.uk/activities/documents/balloons.pdf)





## Amy Tag

**Number of players:** 6+ (the more the merrier!)

**Equipment needed:** None

**To play:**

- To begin, make sure that all of the players are aware of the boundaries of the playing area. The size of the playing area needs to be large enough for the players to run round without colliding but not so large that the tagger cannot catch at least some of the players relatively easily.
- One player is chosen as 'Amy' (the tagger). The rest of the players are planes.
- The planes fly around the playing area and when tagged by Amy join hands with her and stay together whilst trying to tag other planes.
- As more planes are tagged and join Amy, only the players at the ends with a free hand can tag other planes.
- The game continues until everyone has been tagged or time is called.

## Flying Tag

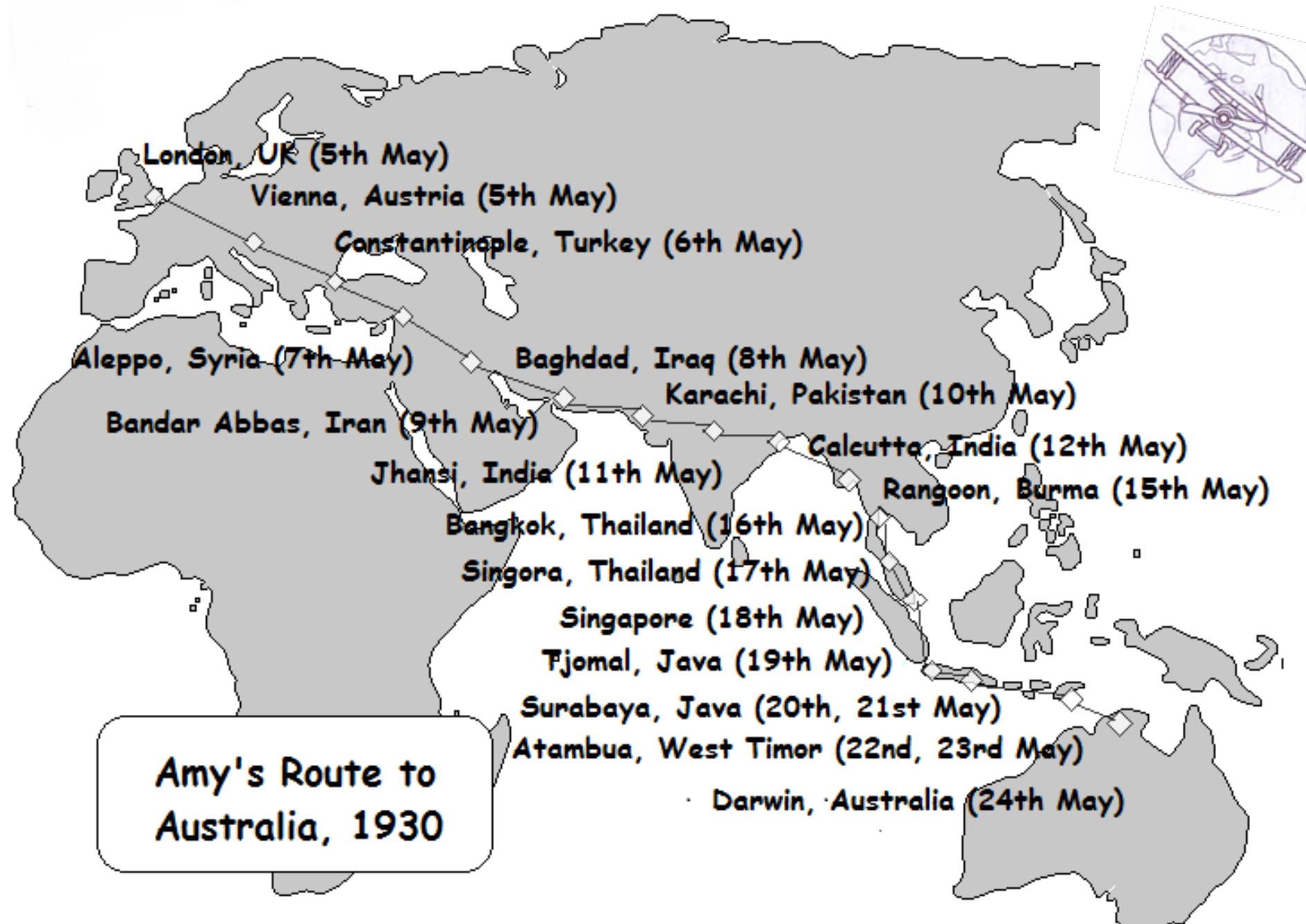
**Number of players:** 6+ (the more the merrier!)

**Equipment needed:** None

**To play:**

- To begin, make sure that all of the players are aware of the boundaries of the playing area. The size of the playing area needs to be large enough for the players to run round without colliding but not so large that the tagger cannot catch at least some of the players relatively easily.
- One player is chosen as a 'lightning bolt' (the tagger). The rest of the players are planes.
- The planes fly around the playing area and when tagged by the lightning bolt turn into clouds and must freeze with their arms out
- A cloud can be freed when another plane flies through them (under their arms)
- The game continues until time is called or a new lightning bolt is chosen.





**Amy's Route to  
Australia, 1930**

**London, UK (5th May)**

**Vienna, Austria (5th May)**

**Constantinople, Turkey (6th May)**

**Aleppo, Syria (7th May)**

**Baghdad, Iraq (8th May)**

**Karachi, Pakistan (10th May)**

**Bandar Abbas, Iran (9th May)**

**Calcutta, India (12th May)**

**Jhansi, India (11th May)**

**Rangoon, Burma (15th May)**

**Bangkok, Thailand (16th May)**

**Singora, Thailand (17th May)**

**Singapore (18th May)**

**Tjomal, Java (19th May)**

**Surabaya, Java (20th, 21st May)**

**Atambua, West Timor (22nd, 23rd May)**

**Darwin, Australia (24th May)**

# Badge Order Form



Thank you for taking part in the Amy Johnson Challenge.

To order your badges please complete this form and send it together with your payment to:

2nd Hull North Division Ranger Unit  
c/o Tarn Hows  
Rise Road  
Skirlaugh  
Hull  
HU11 5BH

If you have any queries please email: [hullnorthrangers@yahoo.co.uk](mailto:hullnorthrangers@yahoo.co.uk)

Name	
Unit	
Address	
Email:	
Telephone	
Number of badges required (£1.25 each)	
Postage and packing 1 - 5 badges £1.00 5-20 badges £1.50 20 + badges £2.00	
Total Cost	

Please make cheques payable to '2nd Hull North Division Ranger Unit'.

To help us manage the badges and ensure everyone receives the number they would like, it would help to received orders or an indication of numbers of badges required by 15<sup>th</sup> May 2016.