

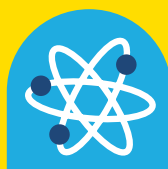
Suitable for  
3-7 years

- ✓ Solo
- ✓ Pairs
- ✓ Groups

Sarah's activity

# Aeroplane model making worksheet

Resource Pack



# Build Amy Johnson a Plane

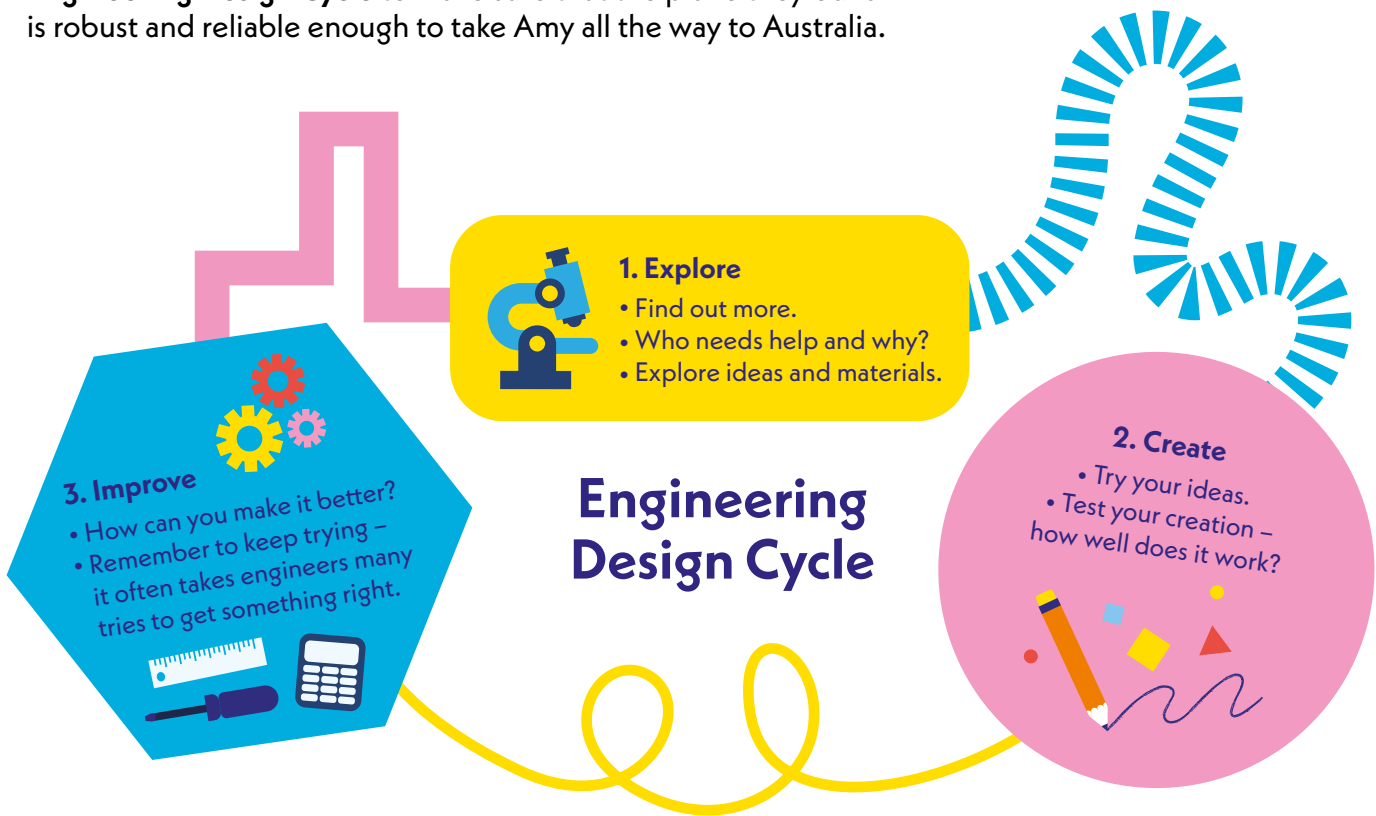
## Who is Amy Johnson?

Amy Johnson is a pilot, and she is planning a pioneering flight from the UK to Australia. She is the first ever woman to attempt this flight solo, and she has mapped out her route to make sure she gets there safely. Amy is also the first ever British-trained female ground engineer, so she knows the importance of a well-designed plane to aid her on her journey. She has enlisted the help of a capable Engineering team to help her plan, design and build the plane to take her on her journey.



## How do you build a plane?

The Engineering team explains that they need to go through the **Engineering Design Cycle** to make sure that the plane they build is robust and reliable enough to take Amy all the way to Australia.



## Are you ready to help Amy?

Can you help the Engineers take Amy's plane through the Engineering Design Lifecycle in time for her trip to Australia?



## STAGE 1 EXPLORE

# What does a plane need?

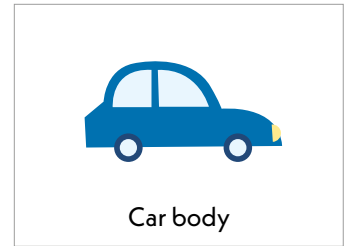
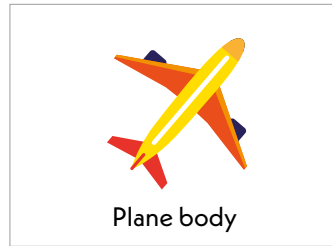
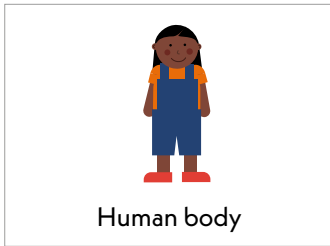


Stage one is where we come up with our first ideas of how to complete a task. We have sent a list of the plane parts that we need to the engineers there. They have sent back a list of ideas for each.

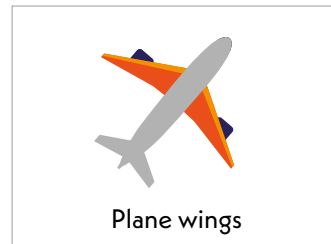
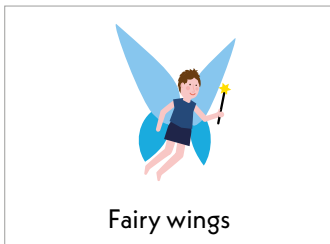
Can you circle the correct one for each plane part? These are our plane **requirements**.

Once you have circled the parts for Amy's plane, check the answers with your Project Manager (teacher!)

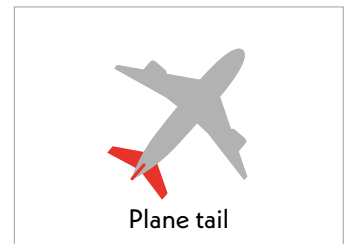
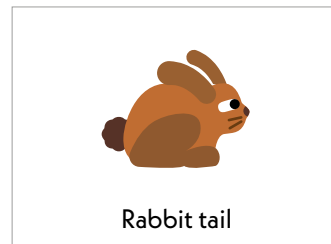
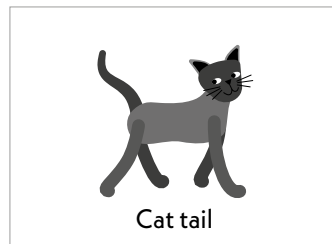
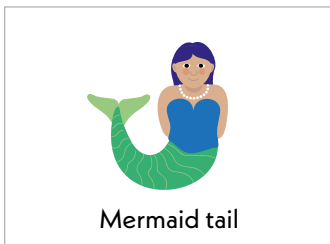
### Body



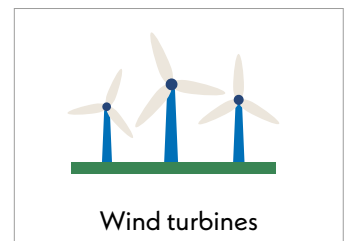
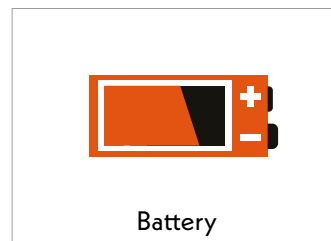
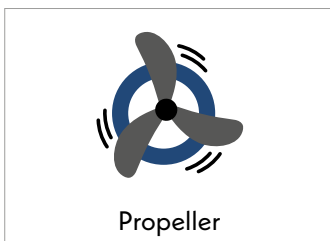
### Wings



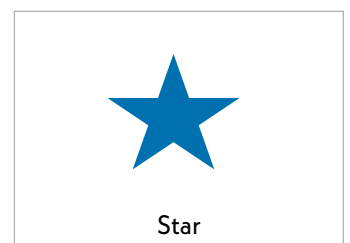
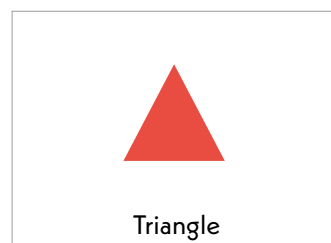
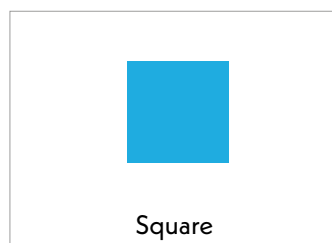
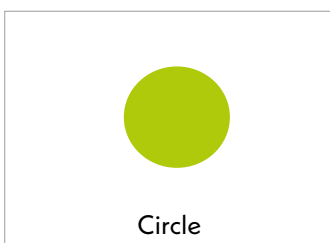
### Tail



### Power



### Wheels



## STAGE 2 CREATE

# Design your plane

Now that we have our plane requirements, it's time to design our plane! Can you draw your plane design in the space below? Remember to include all the parts we chose from the ideas lab.

**Plane requirements** = body, wings, tail, power and wheels.



A large, empty rectangular box with a thin blue border, intended for drawing a plane design.

### Inspiration

Here's some pictures of planes to help you design yours.



### DID YOU KNOW?

The first powered airplane was invented in 1903 – over one hundred and ten years ago! – by the Wright Brothers. Nowadays, there are over 25,000 planes in the world, thanks to these two inventive brothers!

## STAGE 2 CREATE

# Build your plane

Now it's time for the all-important build stage. Can you use the craft items in your classroom to build Amy a plane? Remember to include all the requirements!

→ Body, Wheels, Wings, Tail, Propeller



## Decorate your plane

Now decorate your plane for Amy! Be as creative as you can so that we know who is flying in the air!



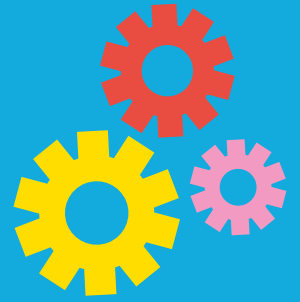
### DID YOU KNOW?

Planes used by pilots like Amy would have something called NOSE ART. This was a custom design on each plane added by the pilots to help distinguish their plane in the air. Can you add a custom design to Amy's plane so that we know who it belongs to in the air?

## STAGE 3 IMPROVE

# Check your plane

Now that your plane is built, it's time to check it meets all the requirements. Take your completed plane to the Testing Arena where it will undergo a series of checks.



### Test 1: Requirement Check



|               |                          |
|---------------|--------------------------|
| 1. Body       | <input type="checkbox"/> |
| 2. Wings      | <input type="checkbox"/> |
| 3. Tail       | <input type="checkbox"/> |
| 4. Wheels     | <input type="checkbox"/> |
| 5. Propeller  | <input type="checkbox"/> |
| 6. Decoration | <input type="checkbox"/> |

Well done! You have completed the engineering design v and successfully built a plane for Amy!

Now you can go and show off your new engineering design and tell everyone about Wonderful Amy Johnson and her fabulous flight!



Did your plane pass all the checks?

Thank you!

