

Air-Powered Rocket

A paper rocket, launched by blowing down a cardboard tube.

What you will need

- ⇒ **1 cm diameter tube**
The tubes from rolls of Kitchen Foil are perfect .
OR use a sheet of thin card to roll your own tube.

Make sure the tube is clean!

- ⇒ **1 piece coloured A4 paper**
- ⇒ **1 piece coloured A5 paper**

Using different coloured paper will make the rocket more interesting

- ⇒ **Scissors**



- ⇒ **Sticky Tape**



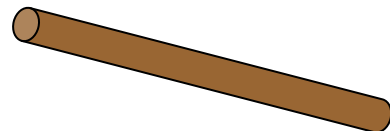
- ⇒ **Poster Putty (e.g. Blu-Tack/Plasticine)**



STEP 1: MAKING THE MANDREL

(only required if you do not have a ready-made tube)

Materials required: A4 sheet of thin card

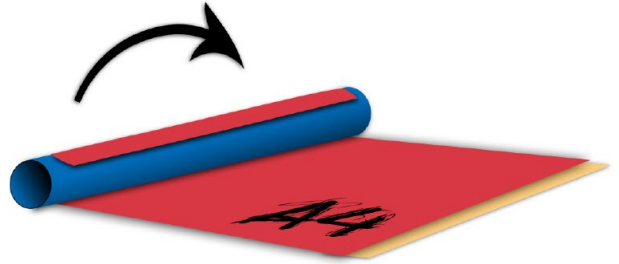


- Roll the cardboard (long-ways) into a tube shape and tape it into position. The tube you make should be approx. 1cm in diameter, and as round as possible.
- Ensure it is stuck well along the entire length otherwise the end of the card will stick out and cause problems when launching.

STEP 2: MAKING THE ROCKET BODY

Materials required: A4 sheet of paper

- A) Place paper in front of you.
- B) Tape the top edge of the paper to the table.
- C) Using the sticky tape like a hinge, Turn paper over.
- D) Place your mandrel (tube) at the bottom of the paper and roll up.
- E) Test it by sliding the paper over the tube.
They should slide smoothly but tightly against each other.



NB: Make sure you put the tape on first, then roll up!

If you roll up the paper around the Mandrel first and then look for tape, the paper will slip and be loose, this will cause the air to leak when you launch and the rocket will not have enough thrust (- it won't go as far when you launch it).

STEP 3: MAKING THE NOSE-CONE

Materials required: Poster Putty (Blu-Tac/Plasticine)

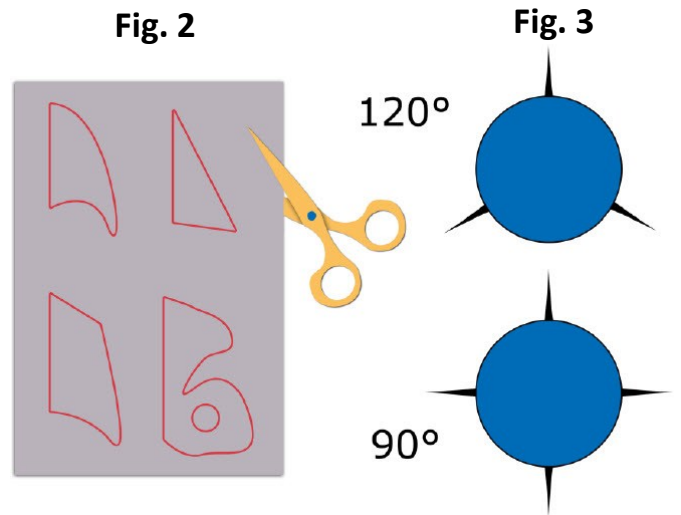
- A) Slide about 2 cm of the paper body-tube off the end of the mandrel and twist it into a point.
- B) Roll out the poster putty and form a pointy nosecone with it.



STEP 4: MAKING THE FINS

Materials required: A5 Sheet of paper

- Decide if you want 3 or 4 fins (**Fig.3**).
- Stand your rocket upright onto the circle with your chosen number of fins and mark out the positions at 90° OR 120°.
- Fold the A5 piece of paper into four.
- Draw the shape of the fin on the paper or use the template below.



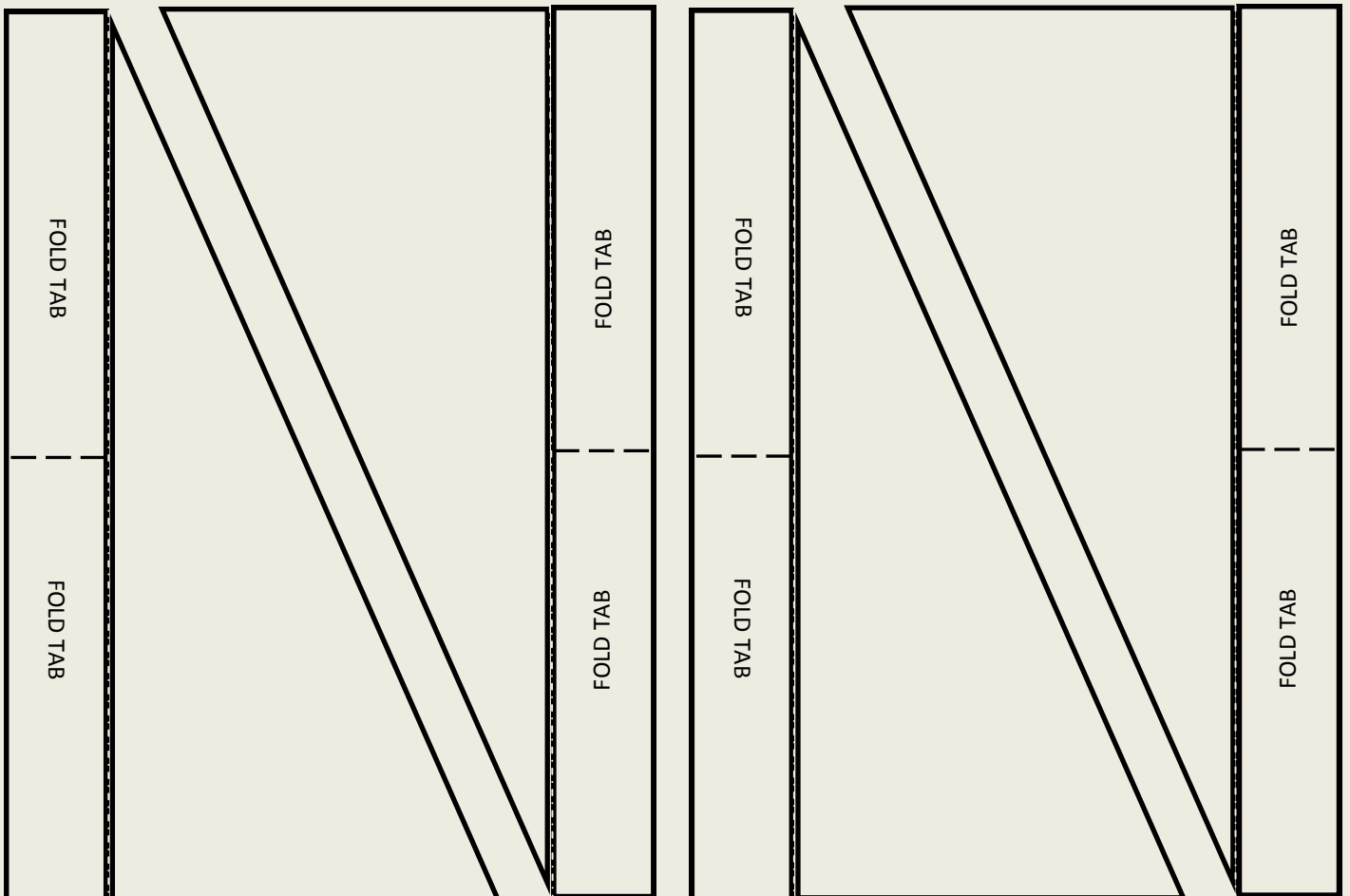
Why not try DIFFERENT fin shapes - which work best?

(See fig.2 for examples)

NB: Make sure you include a 'tab' (flap to fold over) on the straight edge – this will make sticking it to the rocket body easier.

- Cut out the fins and tape them onto bottom of ROCKET BODY (Not the mandrel)

Basic fin shape (to be photocopied): Cut along the SOLID lines only.



STEP 5: PREFLIGHT CHECKS

You should have:

A ROCKET with:

A weighted tip at the top
3 or 4 fins at the bottom.

A MANDREL (tube to blow through)

**Decorate or name
your rocket to make
it easy to identify.**

YOU ARE NOW READY FOR LAUNCH!

Make sure your rocket is on the mandrel

Find a safe, open space

Place mandrel to lips and ...

