Different Types of Paper Helicopters.

A

Cut a Rectangle

The solid outline for this template is 2 inches x 8.5 inches

B

Form the Rotor

1

Make a vertical cut from the top 3 inches long.

2

Fold one blade forward and the other backward along the dashed line
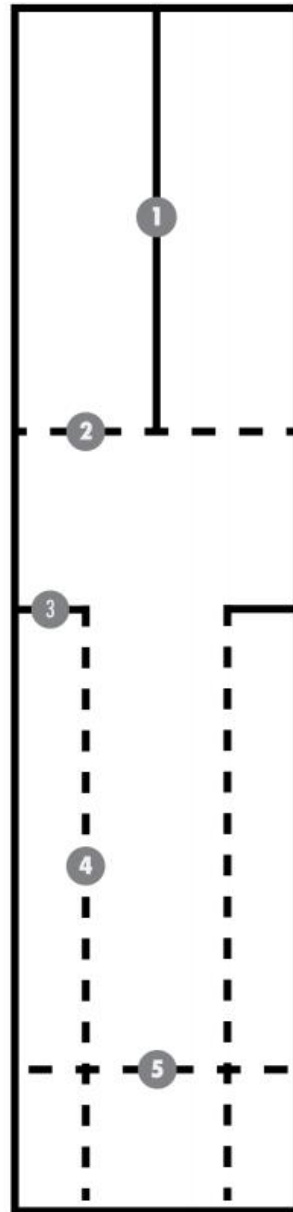
C

Form the Body

3

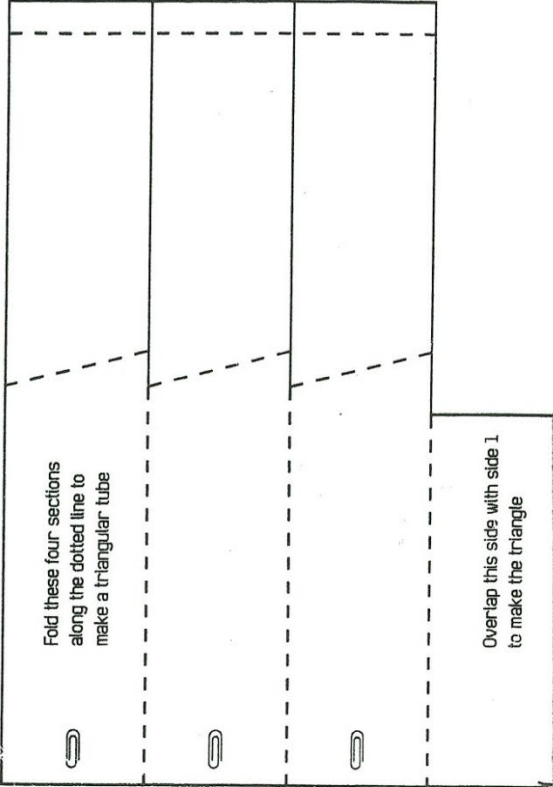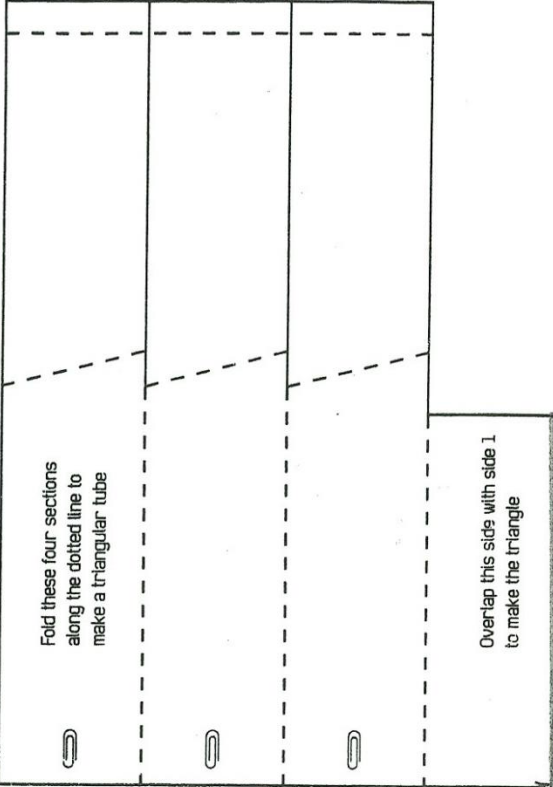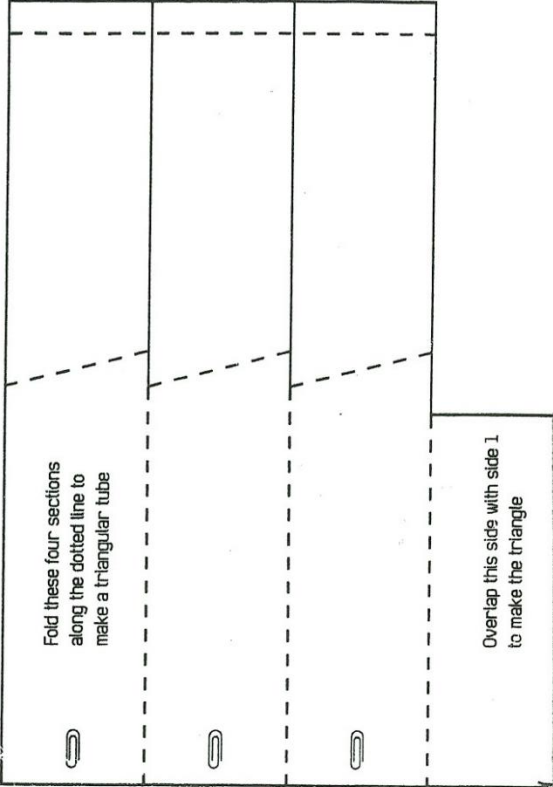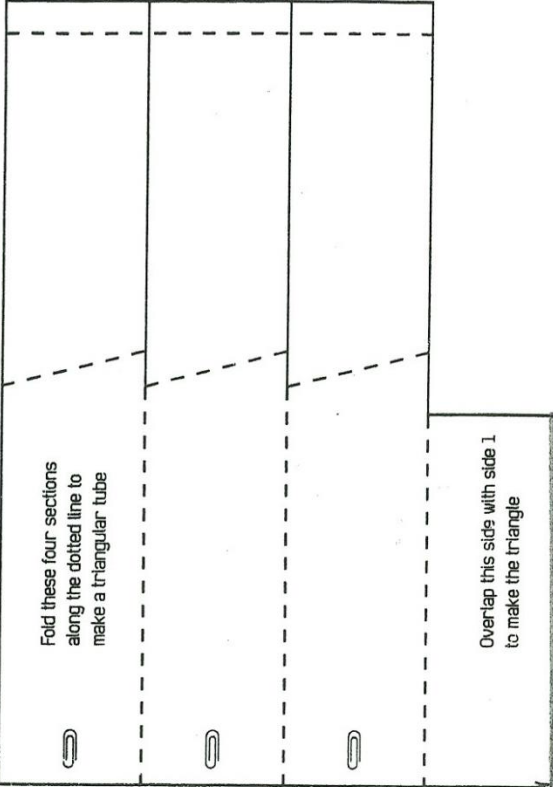About 1 1/4 inch below the blades, make two horizontal cuts 1/2 inch long.
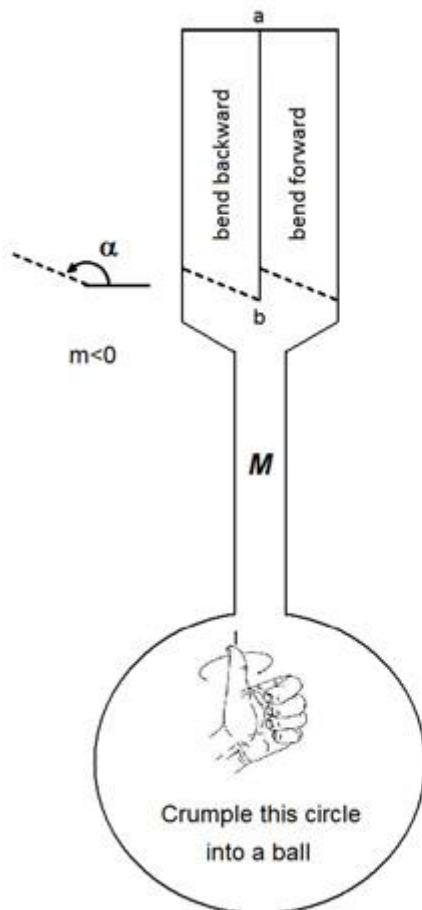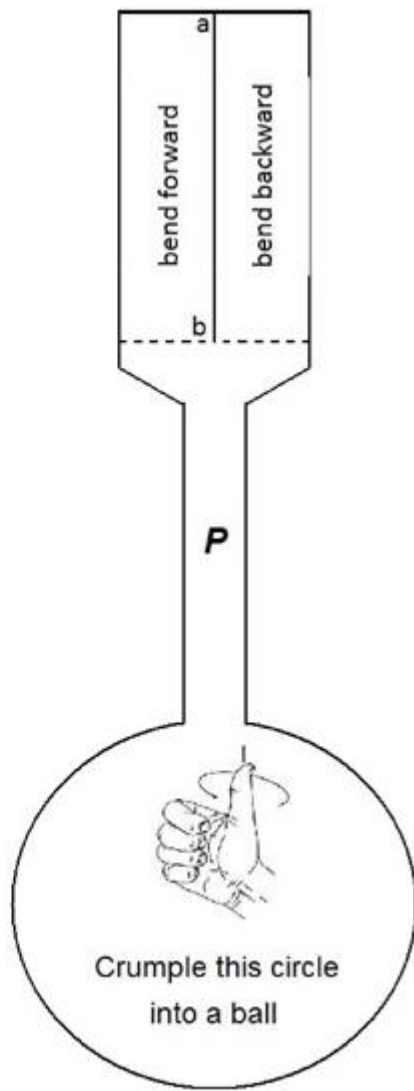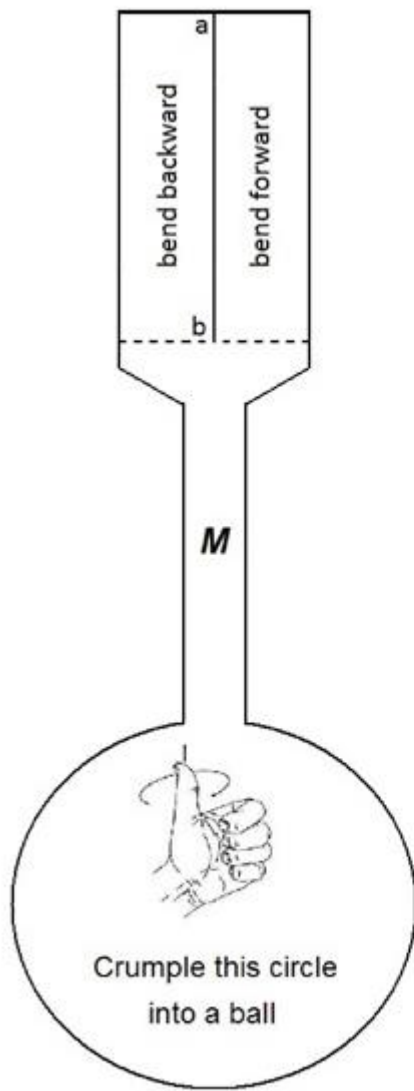
4

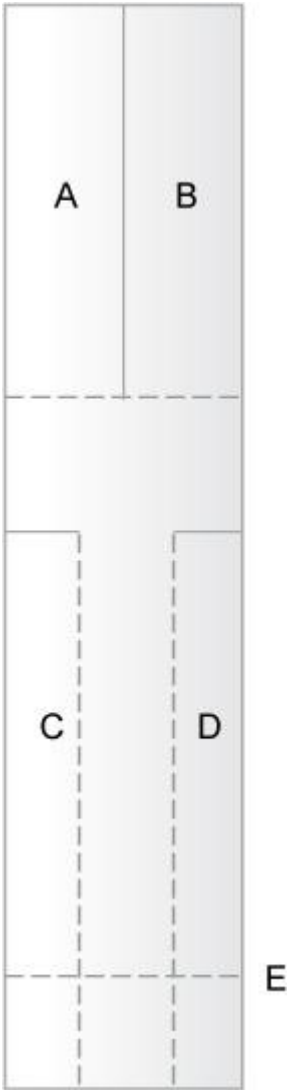Fold along the vertical dashed lines.

5

Fold along the horizontal dashed line, about 1 inch from the bottom.

This paper helicopter forms a triangular tube for the base and has three propellers. Print out this page and cut out the template, cut the solid lines round the outside, then cut down the solid lines to make the propellers, fold along the dotted lines and glue the tab. Attach a paper clip to the bottom to get a better spin. Drop and watch it 'fly'. To get a better spin stand on a chair or drop from a height (Officers will need to risk assess this.)

Fold these four sections along the dotted line to make a triangular tube

Overlap this side with side 1 to make the triangle

Fold these four sections along the dotted line to make a triangular tube

Overlap this side with side 1 to make the triangle

Fold these four sections along the dotted line to make a triangular tube

Overlap this side with side 1 to make the triangle

Fold these four sections along the dotted line to make a triangular tube

Overlap this side with side 1 to make the triangle

a

bend backward

bend forward

b

M

Crumple this circle
into a ball

a

bend forward

bend backward

b

P

Crumple this circle
into a ball

a

bend backward

bend forward

b

α

m<0

M

Crumple this circle
into a ball

a

bend forward

bend backward

b

α

m>0

P

Crumple this circle
into a ball

A	B

C | D

E

1. Cut along all the solid lines on the diagram to the left.

2. Fold flap A forward and flap B to the back.

3. Fold flaps C and D both forward along the dotted lines.

4. Fold along the line E upward to give a weight at the bottom.

5. Now this should look like the diagram at the top.

6.You can scale up this model as much as you want. You just drop the model with the blades facing upwards and the weight at the bottom facing downwards for the best results.

Paper Helicopters & Looping Aeroplanes

Brief outline

These paper helicopters spin gracefully as they fall slowly through the air. They're quick and easy to make and can be released from a paper aeroplane during a loop-the-loop. The helicopters are constructed from a narrow strip of ordinary or coloured photocopy paper (21cm × 2cm). Folding instructions and a brilliant aeroplane design perfect for launching them are provided on pages 2 and 3. Flying requires a large space with high ceilings (eg school hall, gymnasium) or outdoors if winds and weather permit.
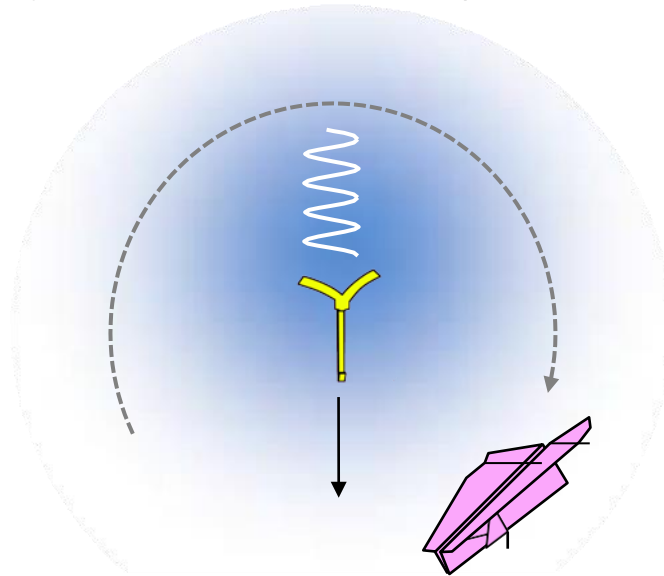
The paper aeroplane design provided performs a graceful loop-the-loop. Tuck the paper helicopter inside the plane's fuselage and it will be deployed at highest point in the loop before gracefully spinning back to the ground.

Materials and equipment

If available, use a combination of brightly coloured papers for the aeroplane and helicopter for a very attractive result.

| Quantity per student	Description
1	Sheet of A4 paper for paper aeroplane
1	21cm × 2cm strip of paper for helicopter

Preparation

To conserve paper, allocate students in small groups and supply one photocopy of the Paper Helicopter and Looping Aeroplane folding instructions per group.
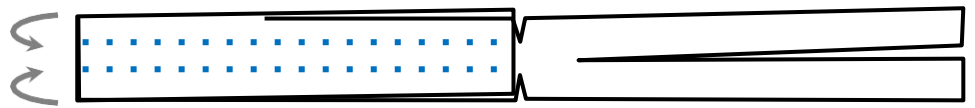
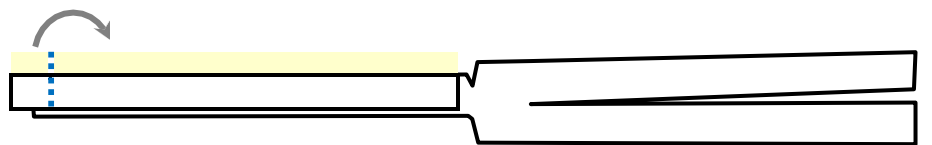# Paper Helicopter Instructions

21cm

2cm

Start by cutting a 2cm wide strip from the short edge of an A4 sheet of paper. Cut along the red lines.
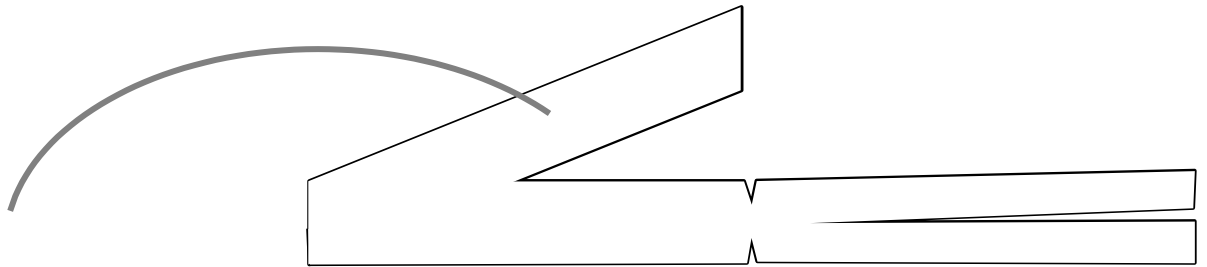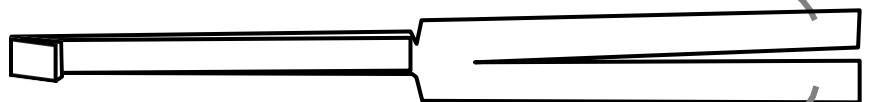
Fold over the bottom third like this.

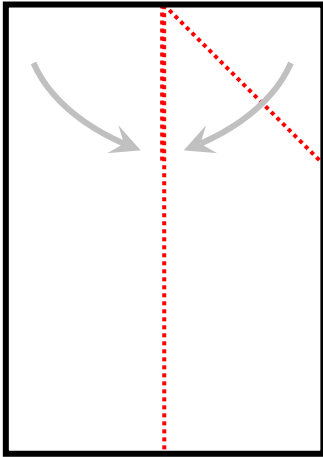Fold one side of the bottom third over, then the other side.

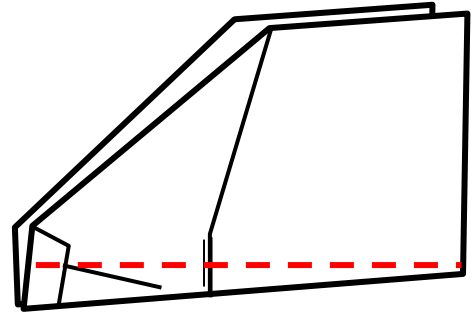Fold about 1cm of the bottom over like this.

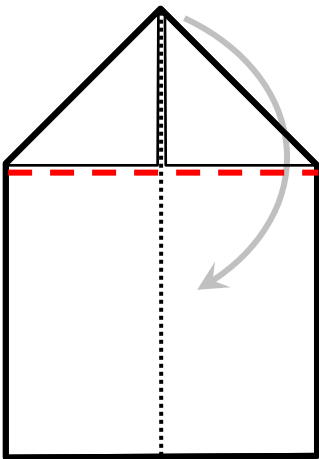Separate and curl the blades like this and your helicopter is ready to fly.
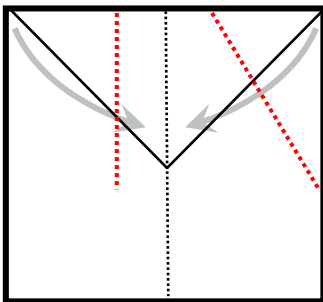
Looping Plane Instructions

Fold an A4 sheet in half and re-open. Fold the top corners into the midline like this.
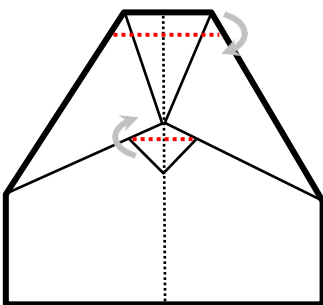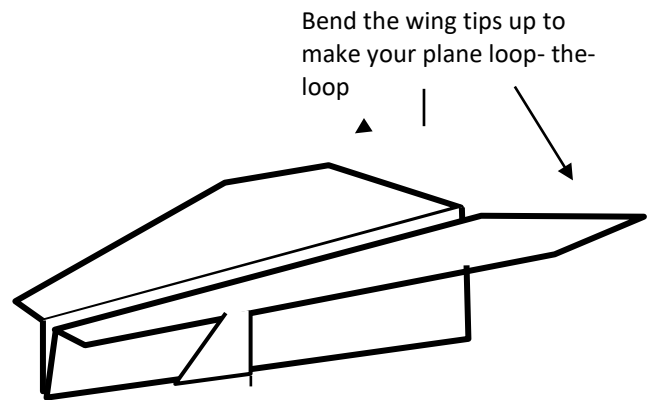
Fold the wings down at an angle like this

Fold the top down

Bend the wing tips up to make your plane loop- the-loop

Press all the folds firmly and make sure the wings are symmetrical and you're ready to go.
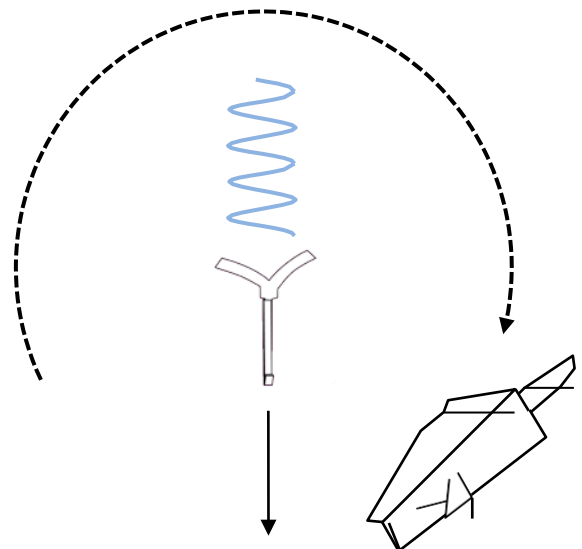
Fold the top corners into the middle to meet about 2cm above the previous fold's apex

Fold the top 1cm down. Fold the small apex up, to lock in the flaps

Flying instructions:
Tuck your paper helicopter inside the plane's fuselage. Launch the plane and the helicopter will be deployed at the top of the loop's highest point.

Hint: for low ceilings, fold up the tail flaps more

For other ideas:

You can buy:

led helicopters

dragonfly hand propeller toy

www.paperhelicopterexperiment.com

http://www.paperairplanes.co.uk/link2us.php