

Whizz Aero Industries Factory Challenge

A SCOUTING IRELAND FUN CHALLENGE



INSTRUCTIONS

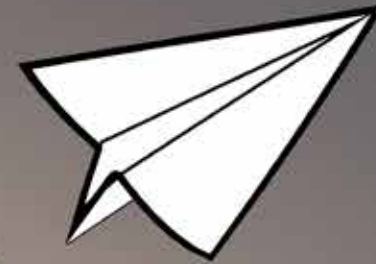
WHIZZ AIRCRAFTS, AN AIRCRAFT MANUFACTURER, IS SUB CONTRACTING SOME OF THEIR VAST AIRCRAFT CONSTRUCTION WORK TO A NEW RANGE OF SELECTED MANUFACTURERS. YOUR TEAM ARE A SUB CONTACTING BUSINESS SEEKING A CONTACT TO BUILD THE NEW AIRCRAFT.

THE COMPETITION FOR SELECTION AS A SUB-CONTRACTOR INVOLVES THE BUILDING OF 4 AIRCRAFT FROM PLANS PROVIDED. THESE AIRCRAFT MUST BE READY FOR VIEWING AND INSPECTION AT THE TEST SITE IN THE ALLOTTED TIME.

IN ORDER TO WIN A CONTRACT YOUR AIRCRAFT MUST BE CAPABLE OF COVERING THE SET TEST DISTANCE AND MEET ALL DESIGN SPECIFICATIONS.

COMPETITION

BEST FLYER - IN A STRAIGHT LINE
BEST LANDING ON THE TEST STRIP
BEST STUNT FLYER
LONGEST FLIGHT TIME
BEST IDENTIFICATION MARKING



YOU ARE SUPPLIED WITH ENOUGH MATERIAL FOR 8 AIRCRAFT, 4 MUST BE DISPLAYED. EXTRA MATERIAL CAN BE PROVIDED FOR PRETESTING, DESIGN MODIFICATIONS AND TWEAKS.

ONLY YOUR BEST AIRCRAFT SHOULD BE BROUGHT TO THE TEST SITE.

ONLY ONE AIRCRAFT OF EACH TYPE WILL BE ALLOWED TO COMPETE.

ALL AIRCRAFT MUST BE MARKED FOR IDENTIFICATION.

THE TEST CIRCUIT IS AVAILABLE FOR PRE-TESTING YOUR CRAFT BEFORE THE OFFICIAL TEST TIME.

TEST SITE - A LONG TABLE IN THE MIDDLE OF THE HALL/ROOM.

EACH TEAM IS GIVEN 8 SHEETS OF A4 PAPER

ESTABLISH AN OFFICIAL THROWING LINE

FOLDING TECHNIQUES

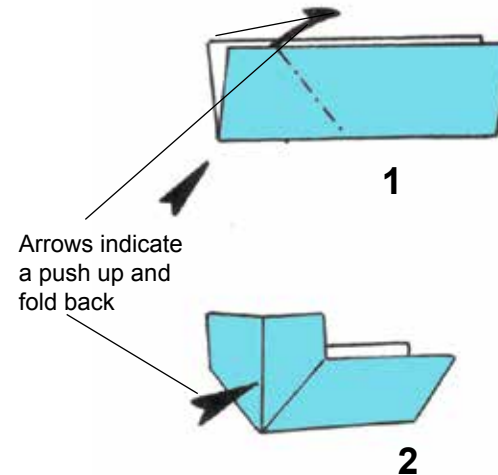
Paper

Use standard A4 photocopying paper or school notebook paper is also good. Be careful of the weight of the paper as thicker paper is harder to fold and more inclined to twist and crease in the fold. You can also use old paper or magazine pages - cut them to size before you start.

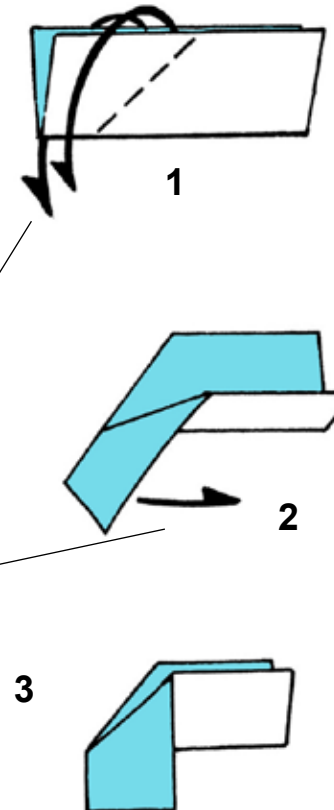
Folding

When folding use a ruler to keep folds straight and sharp. Press down edges and keep all side symmetrical. This allows your plane to have true and slick lines and will fly better.

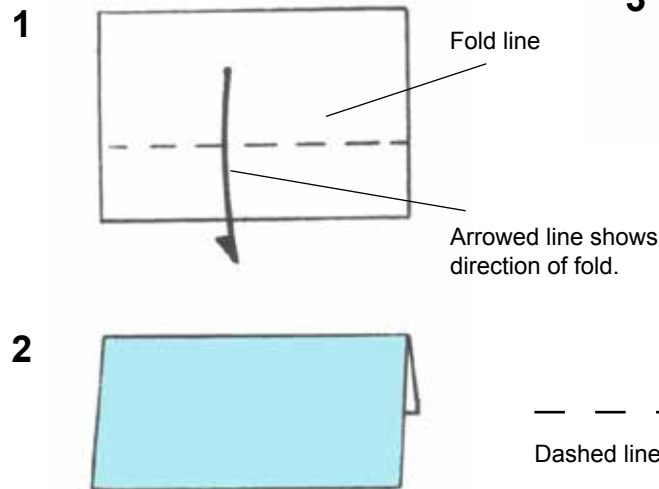
Pinch Fold



Reverse Fold



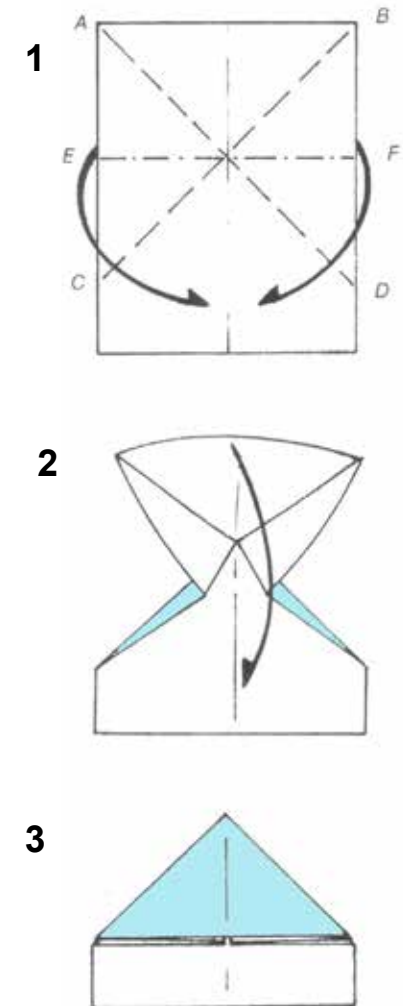
Basic fold along a line



Dashed line indicates a fold or crease

Base fold

The base fold is a more complex fold that includes a pinch and a fold. You start first by creating a series of folds and creases. Then all folds are opened and the page is laid flat. Pull in the points E and F and create the pinch. When you do this the top of the page will fold downwards. Press top of page down to complete the fold.



HOW TO THROW

PAPER PLANES

BY THE PAPER AIRPLANE GUY

step 1

START WITH THE RIGHT PAPER
Old photocopies and documents work best. The heat stiffens the paper as does the plastic-laden and at times pesky ink.



step 2

NEATNESS COUNTS
Much like constructing a passenger plane, manufacturing paper planes needs precision. Fold with care and proper attention to detail.

step 3

FOCUS ON THE FOLDS
Sharp creases, particularly the leading edges of the wings, are important. Crisp folds allow air to pass over the wings like smooth, smooth butter cream.

YIKES



step 4

RESPECT YOUR AIRCRAFT
Always pick the plane up from the nose. Bending the tail can destroy your wing shape and self esteem.



DIHEDRAL ANGLE

step 5

ALWAYS KEEP IT POSITIVE
Positive dihedrals that is. The wings should angle upward from the body of the plane to increase stability.

step 7

CENTER YOURSELF
Hold the plane where the most layers overlap. That's close to the sweet spot - the center of gravity. Oh, yes.



step 6

SYMMETRICAL SUCCESS
Be sure to make one wing the mirror image of the other. Otherwise it will end up in a weird downward spiral.

CENTER OF GRAVITY



step 8

"LEVEL EASY LAUNCH"
Always go with a level easy launch (LEL); start with an easy toss to see how the plane is flying then set that baby bird free.

step 9

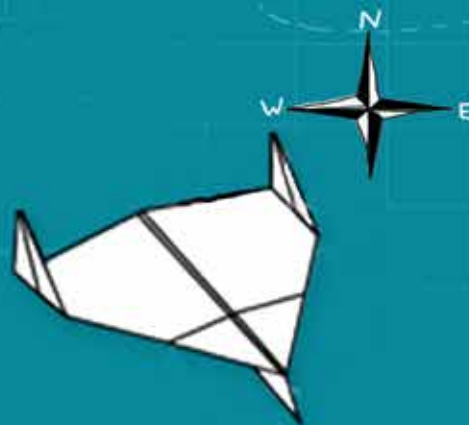
KEEP A FLIGHT LOG
Treat every flight like a test flight. Watch what the plane does in flight and how it reacts to your launch variables.



TOP SECRET

step 10

MANIPULATING FLIGHT PATH
The best trick for adjusting: bend the tail of the plane the direction you want the nose to go—left to go left, right to right, up to climb, down to dive. Use very small bends.

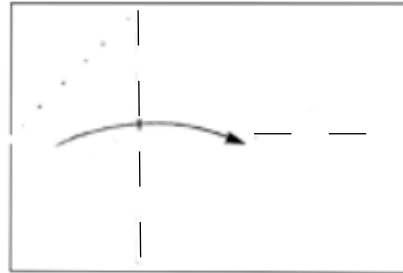


PLANE DESIGN 1

SIMPLE GLIDER

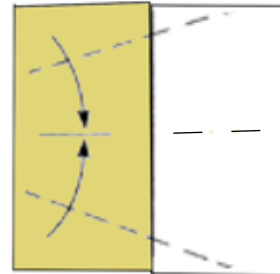
1

Fold in one third of the paper



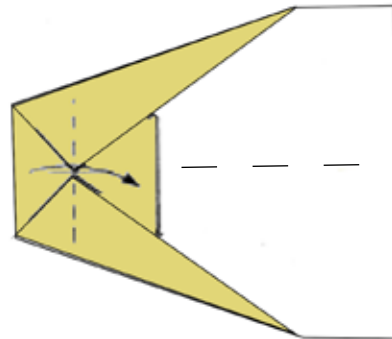
2

Fold in to center the sides of the paper as shown



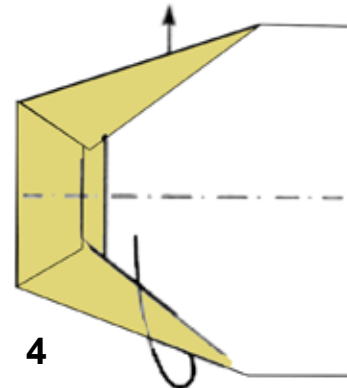
3

Fold top of fold inwards about two thirds



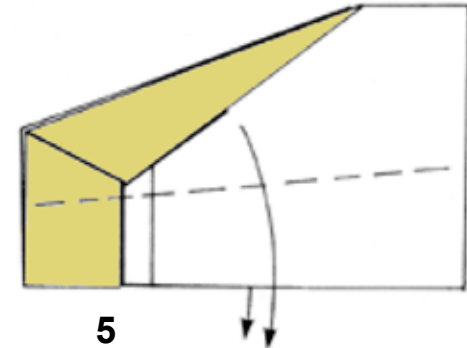
4

Fold in half



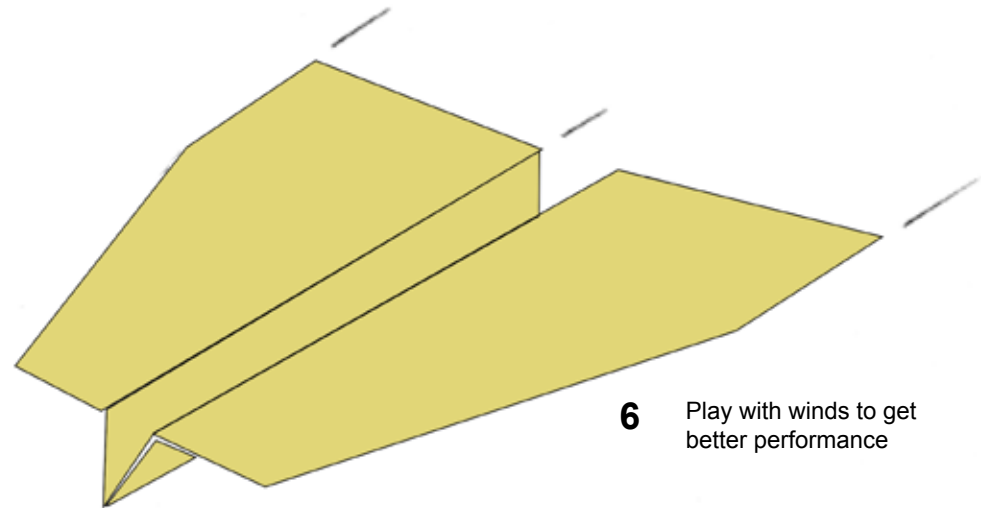
5

Fold back to create wings



6

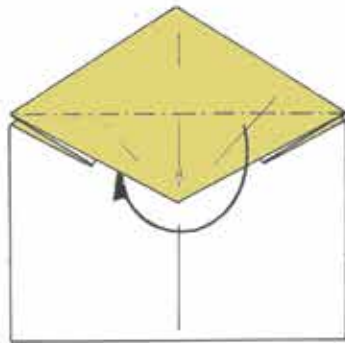
Play with winds to get better performance



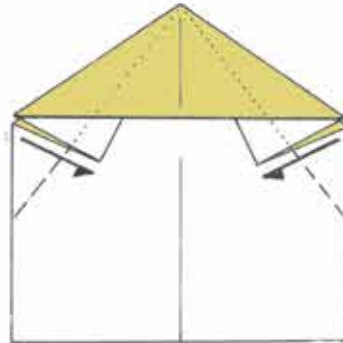
PLANE DESIGN 2

STUNTER MARK II

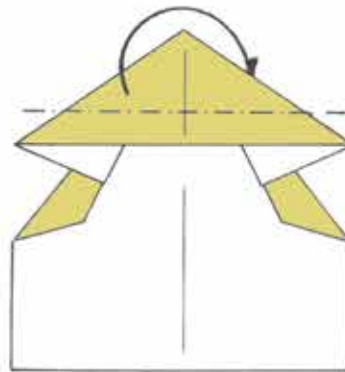
- 1** Create pinch fold as shown above



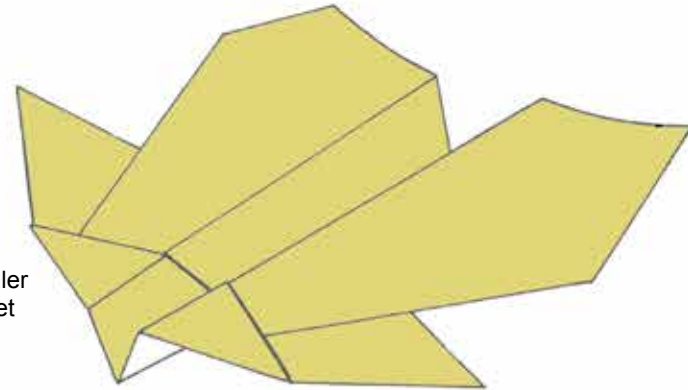
- 2** Bring in sides by folding into center



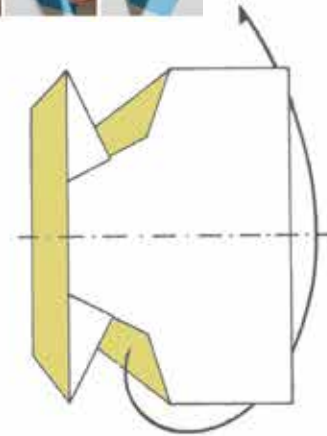
- 3** Fold over top point to the back of paper



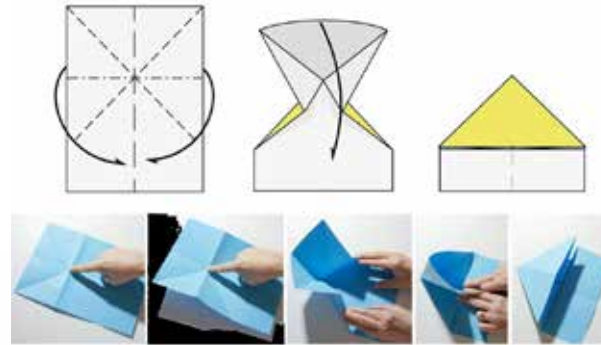
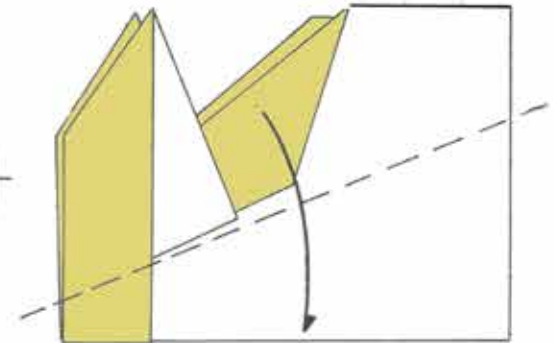
- 6** Tweak main wings and smaller side wings to get different stunts and improve performance



- 4** Fold in half

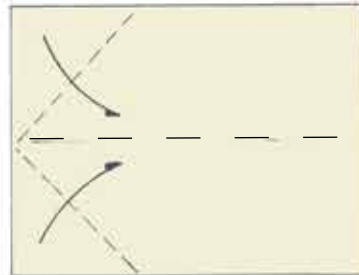


- 5** Fold along dash line to create wings

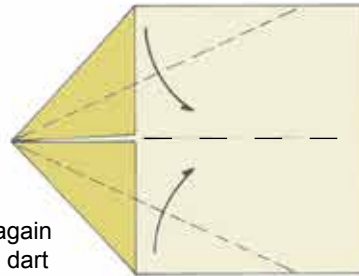


PLANE DESIGN 3

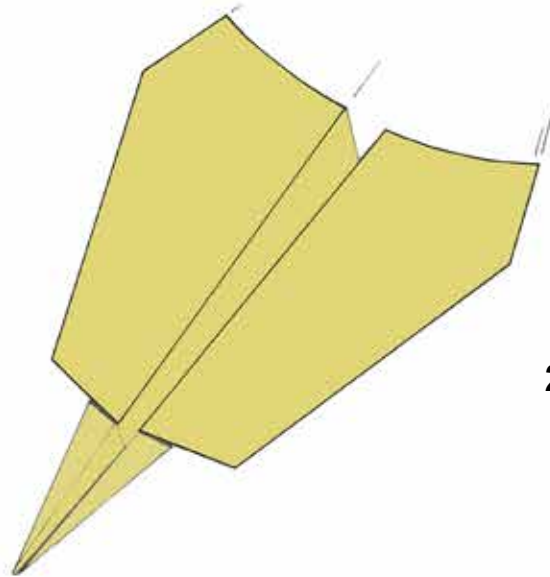
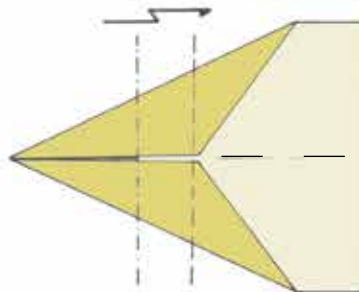
- 1 Lay paper flat and fold in half then open again and fold top corners into center fold line



- 2 Fold in corners again to create dart shape

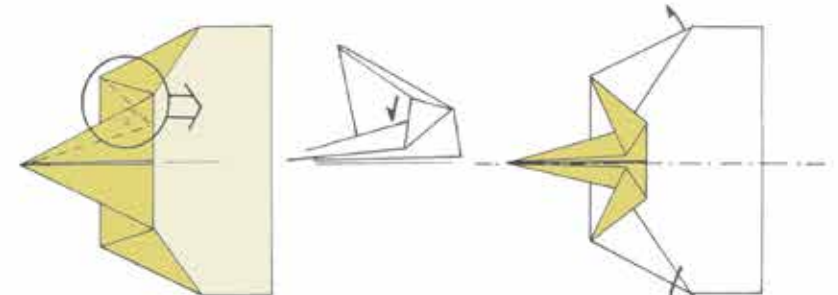


- 3 Create a zig zag fold bringing the front back wards and then forward again so as to shorten the dart length



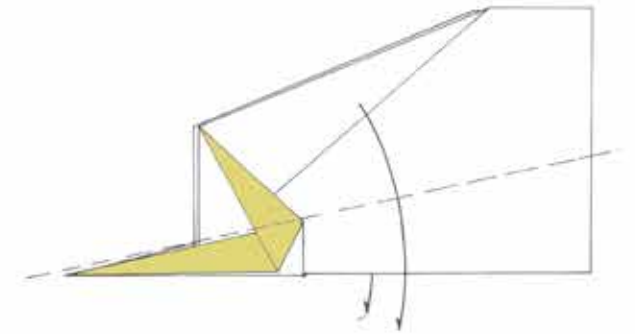
- 7 Throw this dart with a quick forceful throw to achieve long distances

LONG DISTANCE DART



- 4 Fold in corners again to refine the dart tip

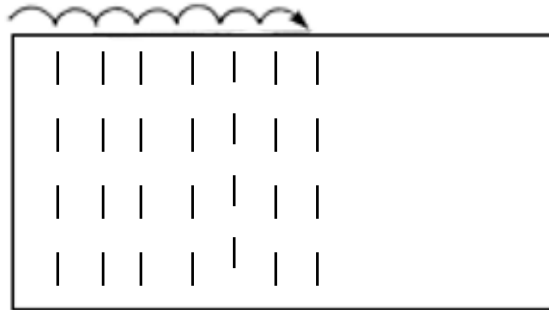
- 5 Fold sides backwards



- 6 Fold paper to create wings. Keep a fold line from the tip of the dart to the back as shown by dashed line

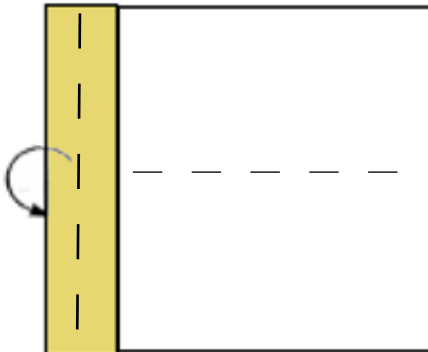
PLANE DESIGN 4

STUNT FLYER

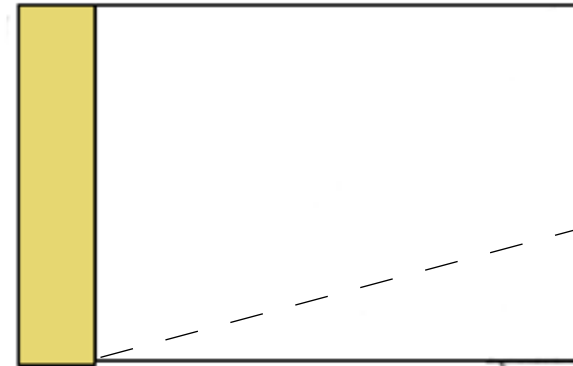
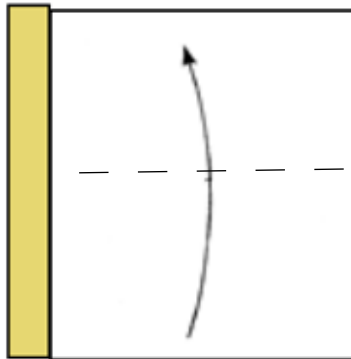


1 Create a series of folds one on top of the other.

2 Fold the last fold backwards to create a folded 'bullnose' edge

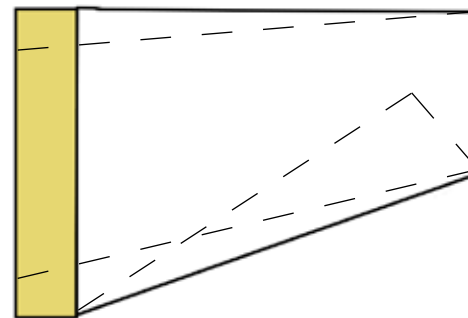


3 Fold in half



4 On the bottom edge fold the corner inwards

Push inside fold



5 Fold the tips along dashed line on each side and then open up fold to reveal your stunt flyer

