Name: _____

Paper Airplanes
SPH4C

Instructions taken from http://www.paperairplanes.co.uk.

After you construct each of the planes and *before you fly it*, please write your name across the wings so that it won't be confused with anyone else's. When you have verified that it flies, bring it to your teacher and have your teacher initial the designated space below.

Classic Dart _____

Glider _____

Floater _____

Rapier _____

Dragon _____

PLEASE NOTE THAT THESE PLANES SHOULD NEVER BE THROWN AT SOMEONE.

Questions:

Which design worked best for you? _____

Identify 3 features of the plane that you think had the most significant effect on its performance.

- _____
- _____
- _____

Which design did not work well for you? _____

Identify 3 features of the plane that you think had the most significant effect on its performance.

- _____
- _____
- _____

Classic Dart

You throw this plane overarm and on the level. It will fly quite far and very straight if you have made it correctly. It flies very well indoors and out.

DIG. 1

1. Take an A4 sheet and fold it in half DIG. 1

DIG. 2

2. Fold the short edge of one side down to the first fold (ie produces a 45Degree angle). Do This for the other side too. DIG. 2

DIG. 3

3. Fold down the new fold you have created to the original fold you did in (1). Repeat for the other side. DIG. 3

DIG. 4

4. Do step 3 again for both sides DIG. 4

DIG. 5

5. Hold Centre and open wings out. Now Throw!!! DIG. 5

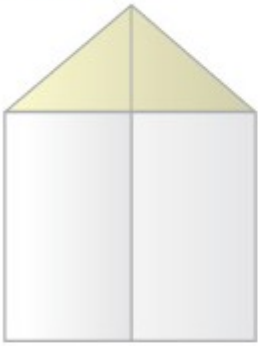
Glider

This paper airplane is easy to throw. You should throw it overarm with the nose pointing slightly up while holding the plane about 1/4 of it's length from the front.

DIG. 1

1. Firstly fold the sheet in half along the line shown in DIG. 1 and then open it out again.

DIG. 2

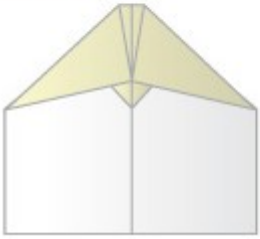


2. Fold the two top corners in to the center line to give the form in DIG. 2

DIG. 3

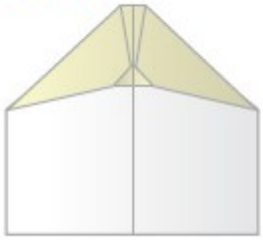
3. Then fold the top large triangle over so that the two flaps formed in step 2 are underneath the large triangle. Your paper should now look like DIG. 3

DIG. 4



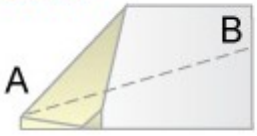
4. From the form in DIG. 3 fold the two top corners into the center line again in such a way that you get the form in DIG. 4

DIG. 5



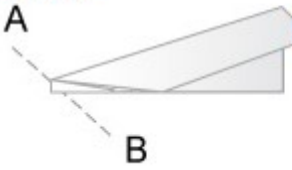
5. Now fold the small triangle up over the two flaps to give DIG. 5

DIG. 6



6. Fold along the center line so that the small triangle is on the underside of the plane on the outside along with the two flaps as shown in DIG. 6

DIG. 7



7. Fold along the line AB on DIG. 6 then turn the plane over and do the same to the other side producing DIG. 7.

DIG. 8

8 Fold along the line labelled AB on the diagram first one way and then the other creasing really well. Tuck the triangular shaped depression inbetween the two wings to produce DIG. 8. This stabilises the plane if you do not make it perfectly since to make it absolutely symmetrically is beyond my abilities.

Floater

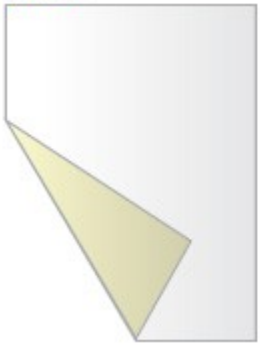
This paper airplane is best indoors. It is quite stable but any major wind outdoors causes it to crash very quickly. Try throwing this plane very gently overarm with the nose pointed slightly upwards holding it about a quarter of its length from the nose. In still conditions outdoors or indoors this will let it glide gently for quite a long time and distance.

If you make a flap at the back of one of the wings by snipping the paper twice for about 1cm into the wing and making the two snips 2 cm apart and then folding the paper inbetween the snips up, the paper airplane should gently glide in a circle back to you. Whether the circle is clockwise or anti-clockwise depends on which wing you place the flap (or aerlon).

DIG. 1

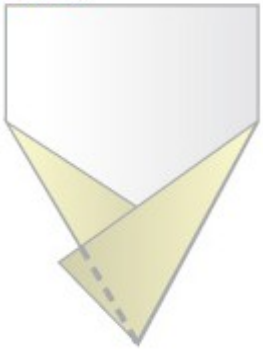
1 Start with a plain piece of A4 paper and fold it in half as in DIG. 1

DIG. 2

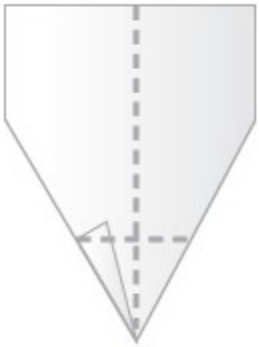


2 Then fold down a flap as shown in DIG. 2 and repeat the process with a flap on the other side to give you DIG. 3

DIG. 3



DIG. 4

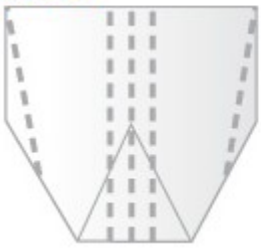


3 Now fold over the overhanging flap along the line in DIG. 3 to give you DIG. 4

DIG. 5

4 Then turn the plane over and fold the nose of the plane up to give you DIG. 5

DIG. 6



5 Crease again along the middle line and then fold along the dotted lines in DIG. 6. It is important that the folds at the ends of the wing are folded downwards so you get a plane as at the top of the page otherwise the plane flies upside down.

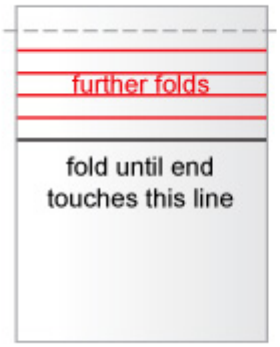
Rapier

Just hold it about 1/4 of its length from the nose tip and throw it overarm quite gently. If you want the plane to circle make one wing higher at the back than the other (but only slightly). This will make the plane circle with the lower wing towards the centre of the circle.

DIG. 1

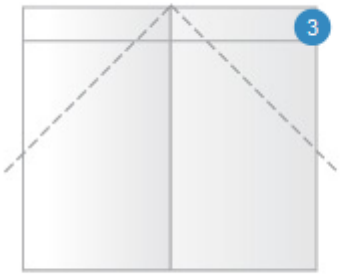
1 First take a rectangular A4 (8 1/2" by 11") sheet of paper and fold down the center dotted line on DIG. 1 opening it out again afterwards.

DIG. 2



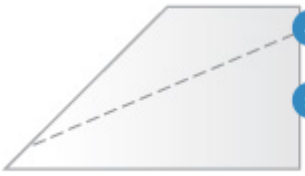
2 Take the first 1cm (1/2") of the rectangular sheet and fold it up along the dotted line in DIG. 2

DIG. 3



3 Fold the flap over and over until about 3/8 of the length of the sheet is folded in this concertina fashion as in DIG. 3 this should give a heavy and thick front lip.

DIG. 4



4 Now fold along the two dotted lines in DIG. 3 bringing the top edges into the center line and fold along the center line to give DIG. 4 as a side view

5 Fold the wings down along the dotted line in DIG. 4one either side of the center. Now the plane should look like the diagram at the top of the page.

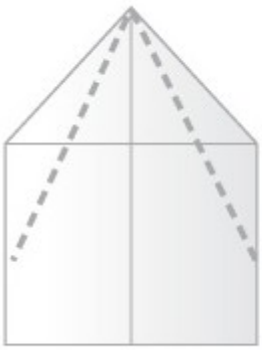
Dragon

This plane flies well indoors but is useless outdoors as the slightest breeze will make it crash. Hold it very near its shorter edge (the front) underneath the plane. Throw with a pushing motion or overarm so that when you let go it will be level or very slightly tilted downwards. You should find that this plane will glide very slowly for quite a long distance indoors.

DIG. 1

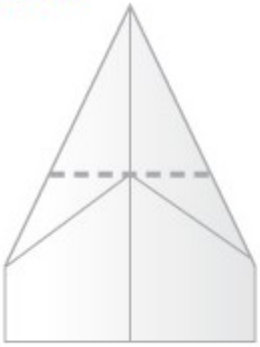
1 Fold along the dotted line down the center of DIG. 1 then open the paper out and fold along the diagonal lines at the top to give DIG. 2.

DIG. 2



2. Fold along the diagonal lines in DIG. 2 bringing the top left and top right edges in to meet along the center line as shown in DIG. 3.

DIG. 3



3. Fold along the horizontal dotted line in DIG. 3 bringing the tip of the paper airplane down to the center of the base of the paper as shown in DIG. 4

DIG. 4

4. Now fold along the diagonal dotted lines in DIG. 4 to bring the left top edge and right top edge in to meet at the center line as shown in DIG. 5

DIG. 5

5. Now fold the flap that points downwards up so that its tip touches the tip of the paper airplane at the front. Fold along the dotted line shown in DIG. 5 to do this. If the tips do not meet go back and alter the folding so that they do. This is very important. You should get the form (approximately) in DIG. 6

DIG. 6

6. Now finally fold along the center line and dotted lines in DIG. 6to give you the paper airplane as shown at the top of the page. Throw it hard overarm and it should fly very level and very straight for a long distance.

Have fun flying!