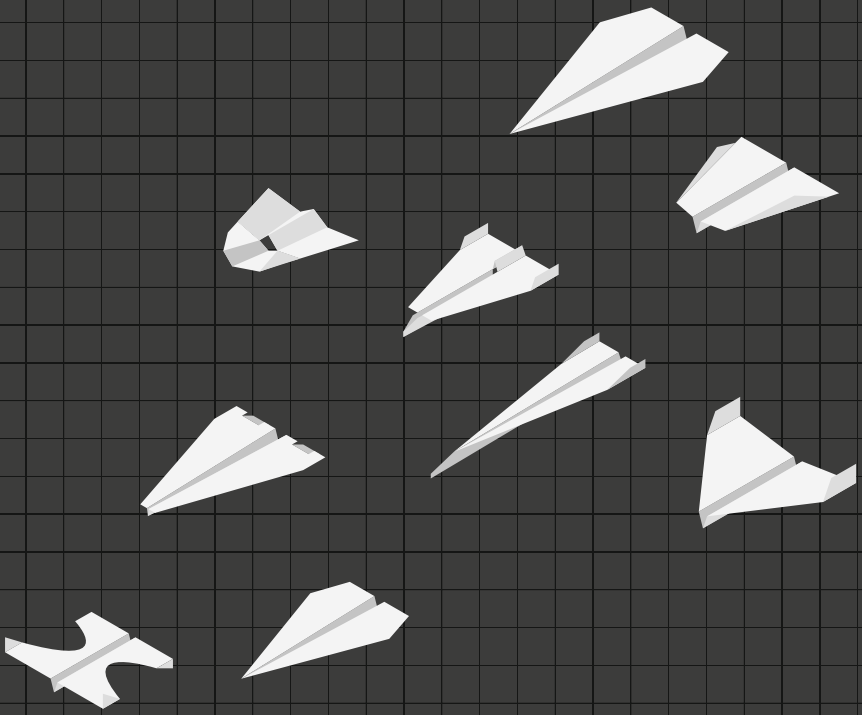
SOCIAL ACTION HACKATHON

PAPER PLANES GUIDE



Raspberry Pi

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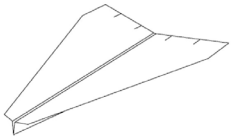
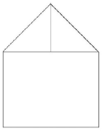
Beginner - Arrow

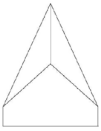


This plane is easy to fold and flies straight and smooth.

Make sure your page is in portrait, so that the 'UP' arrow would be at the top of your page.



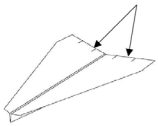
Fold both corners down to the middle and make sure they line up!



Fold the two top edges down and together again, so they line up and meet in the middle.

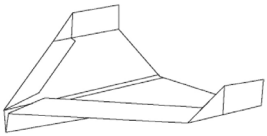
Fold the tip of the plane down so it lines up with where the edges first meet.

Fold the plane in half down the middle, then fold the wings down.

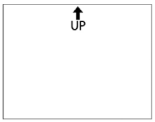


You can also rip small flaps in the back of the wings as elevators and adjust how your plane flies!

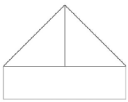
Beginner - Condor



This plane produces tremendous lift at low speed, giving it a very low glide slope. It is an excellent indoor flier and will coast across the room on slow, smooth glides.

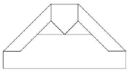


Orient the paper into landscape, so that the "UP" arrow would be at the top of the page.



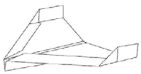
Fold the top left corner down toward you from the centre of the top side. Do the same with the top right corner. Make sure they line up!

Fold the nose down until the tip is level with the bottom of your corner folds.



Fold the outside wing edges in towards the middle and crease them.

Fold the right half of the plane over the left side along the centre, then make sure the wings line up before making a crease.

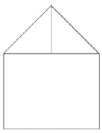


Fold the wings down and the wingtips up. Add wing dihedral by tilting the wings up slightly. (The wings will have a slight "V" shape when viewed from the front. Add elevator slits along the back edge of the wings to adjust the flight if necessary.

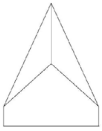
Beginner - Dart

This plane is the classic, simple paper dart that you've probably made while you were bored in class one day.

Make sure your page is in portrait, so that the 'UP' arrow would be at the top of your page.



Fold both corners down to the middle and make sure they line up!



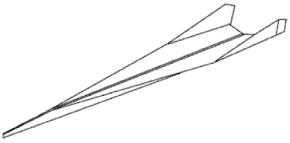
Fold the two top edges down and together again, so they line up and meet in the middle.

Fold the right half of the plane over the left side along the centre, then make sure the wings line up before making a crease.

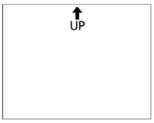
Fold the wings down so that the outer edge is level with the bottom of the fuselage, then crease.

Make sure the wings are straight and level, and you are ready to fly!

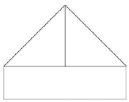
Intermediate - Bullet



This plane flies as fast and as far as you can throw it, although it is not very stable during flight. It is a true 'dart' and very streamlined. Accurate, firm creases are critical.



Orient the paper into landscape, so that the "UP" arrow would be at the top of the page.



Fold the top left corner down toward you from the centre of the top side. Do the same with the top right corner. Make sure they line up!

Fold both sides into the middle again, and crease along the folds.

Fold both sides over once again and crease along fold lines. Make sure that you are making firm, crisp creases along each fold line.

Fold the very tip of the nose down toward you along the fold line.

Fold the right half of the plane over the left side along the centre, then make sure the wings line up before making a crease.

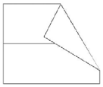
Fold the wings down so that they are even and fold winglets up at the ends. Add wing dihedral by tilting the wings up slightly. (The wings will have a slight "V" shape when viewed from the front.)

Intermediate - Canard

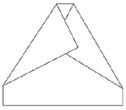
This unique plane has small wings at the front called ‘canards’. This design is surprisingly stable and will fly long and straight if folded carefully.

Make sure your page is in portrait, so that the ‘UP’ arrow would be at the top of your page.

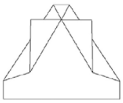
Fold one third of the page down, so that the top of the page is halfway between the bottom and the fold.



Fold the top right corner down and towards you, from slightly to the right of the middle



Fold the top left corner down toward you and across the centre line, to make a symmetrical edge, like this.

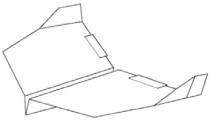


Fold the corners up on both flaps you’ve made, making sure that the corners touch in the centre, like this.

Fold the right half of the plane over the left side along the centre, then make sure the wings line up before making a crease.

Fold the wings and winglets down so that they are even. Add wing dihedral by tilting the wings up slightly. (The wings will have a slight “V” shape when viewed from the front.

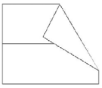
Intermediate - Raptor



This unique plane has small wings at the front called ‘canards’. This design is surprisingly stable and will fly long and straight if folded carefully.

Make sure your page is in portrait, so that the ‘UP’ arrow would be at the top of your page.

Fold one third of the page down, so that the top of the page is halfway between the bottom and the fold.



Fold the top right corner down and towards you, from slightly to the right of the middle

Fold the top left corner down toward you and across the centre line, to make a symmetrical edge, like this.

Fold the nose down, about an inch from the point and make a crease.

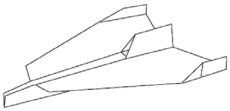
Fold the nose down again, another inch from the top. Make another crease.

Fold the nose down again one final time, another inch from the top. Make a final crease.

Flip the plane over, and fold the right half over the left half. Make a crease down the centre.

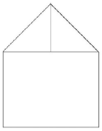
Fold the wings down and winglets up so that they are even. Add wing dihedral by tilting the wings up slightly. (The wings will have a slight “V” shape when viewed from the front.) Cut elevator slits in the wings.

Advanced - Interceptor

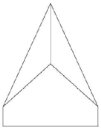


This plane has a central vertical stabilizer on the fuselage that helps produce excellent straight flights. Make sure to complete the final step of the instructions for good performance.

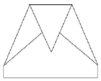
Make sure your page is in portrait, so that the 'UP' arrow would be at the top of your page.



Fold both corners down to the middle and make sure they line up!

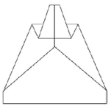


Fold the two top edges down and together again, so they line up and meet in the middle.



About halfway between the tip and the 'Y', fold the nose down towards you and crease neatly.

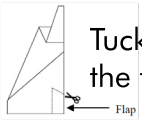
About halfway between the crease and the 'Y', fold the nose up away from you and crease neatly.



Fold the tip of the nose away from you and crease neatly.

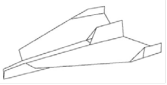
Flip the plane over. Fold the right half of the plane over onto the left half along the centre. Cut as shown for the vertical stabiliser.

Advanced - Interceptor cont.



Tuck the flap that was formed by your cut between the two halves of the plane and crease it.

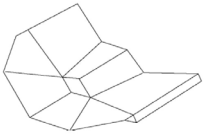
When you have completed the step above, your plane will look like this.



Fold the wings down evenly and the winglets up. Add wing dihedral by tilting the wings up slightly away from the fuselage. The wings will have a slight “V” shape when viewed from the front.

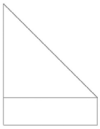
VERY IMPORTANT: Pull the back tip of the vertical stabilizer up and toward the front of the plane to put a slight upward curve to the trailing edge of the wings. This is to prevent the back edge of the wings from sagging downward. If you do not do this, your plane will nose-dive straight to the ground.

Advanced - Stealth Wing



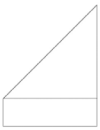
This plane is an advanced design. With careful folding, it will reward you with long smooth glides. Launch gently from high above your head or an elevated area.

Make sure your page is in portrait, so that the 'UP' arrow would be at the top of your page.

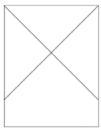


Fold the top right corner down and to the left and crease sharply along the fold line.

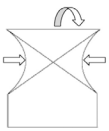
Unfold the fold you just created.



Repeat the procedure above by folding the top left corner down and to the right. Make a sharp crease along this fold line.



Unfold the fold you just created.

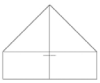


This step is a bit tricky. Lift the left and right edges of the paper and push them toward each other while folding the top triangle onto the bottom one. This will make a crease along your fold lines so that you end up with the shape below.

Advanced - Stealth Wing cont.

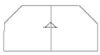
This is the shape you should have after completing the step above.

Fold the right side over onto the left side along the centre. Cut where shown to make a small slit.

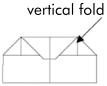


Unfold to produce this shape.

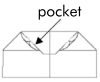
Fold the top point over and crease. Tuck the nose into the slit you cut.



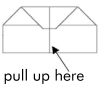
Flip the paper over and fold the nose up toward the top. Make a crease.



Flip the paper back over again. Fold the top layer of the triangle shaped flaps in along a vertical fold line.



Tuck the flaps into the pockets near the nose of the plane. Push the flaps completely into the pockets.

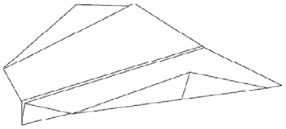


You should now see this shape. Locate the crease below the cut slit. Pull this crease up & toward you while also folding the plane in half toward you.

Partially unfold the fold you just created. You should see this shape.

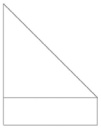
Fold down the winglets along the edge of the wing. Now you are ready to fly! Hold the plane with your thumb against the nose and your index and middle finger behind the cut slit. Launch very gently from above your head.

Advanced - Trap Glider

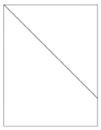


This plane has a trapezoid shape when viewed from the top. Its weight forward design and large tapered winglets make it a stable flier.

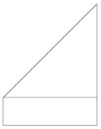
Make sure your page is in portrait, so that the 'UP' arrow would be at the top of your page.



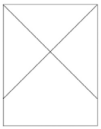
Fold the top right corner down and to the left and crease sharply along the fold line.



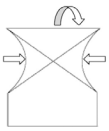
Unfold the fold you just created.



Repeat the procedure above by folding the top left corner down and to the right. Make a sharp crease along this fold line.



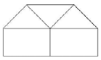
Unfold the fold you just created.



This step is a bit tricky. Lift the left and right edges of the paper and push them toward each other while folding the top triangle onto the bottom one. This will make a crease along your fold lines so that you end up with the shape below.

Advanced - Trap Glider cont.

This is the shape you should have after completing the step above.



Fold the nose down until the tip is level with the base of the triangle and make a crease.

Fold the left and right flaps in and crease along vertical fold lines. You should have made two small triangles.

Tuck the two small triangles you just formed into the pocket in the nose.

When you have completed the step above, your paper should look like this.

Flip the paper over onto its backside. Fold the right half of the plane over onto the left half and crease along centre line so that the outside edges of the wings line up.

Fold the wings down evenly and the winglets up along the wing edge. Add wing dihedral by tilting the wings up slightly away from the fuselage. The wings will have a slight “V” shape when viewed from the front.

Raspberry Pi