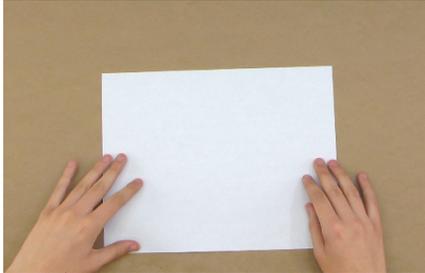


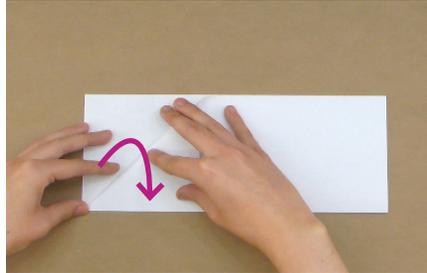


# Paper Airplanes

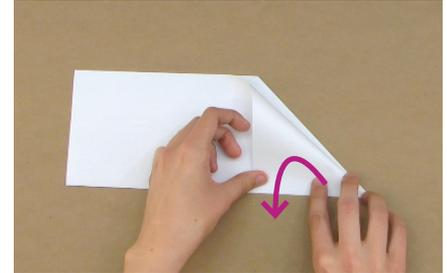
## The Classic Dart



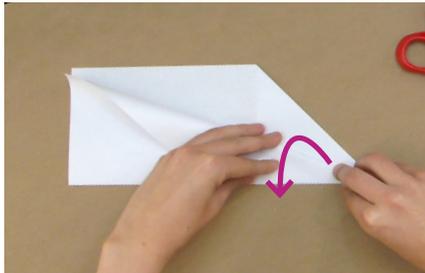
**1.** Start with an 8.5" x 11" paper in landscape orientation. You can use scissors or other hard edges to smooth all folds.



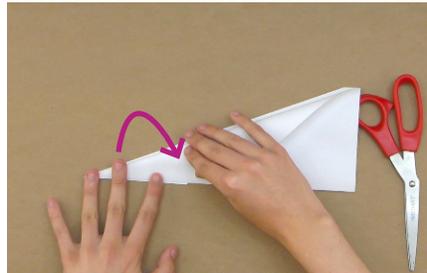
**2.** Fold the upper left corner down so that the left edge lines up with the bottom edge.



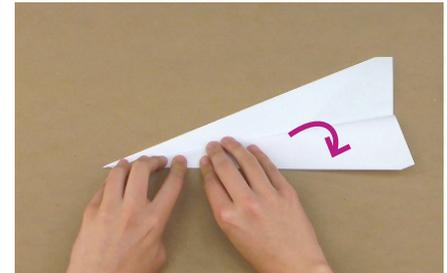
**3.** Flip the paper over and repeat step two with the upper right corner.



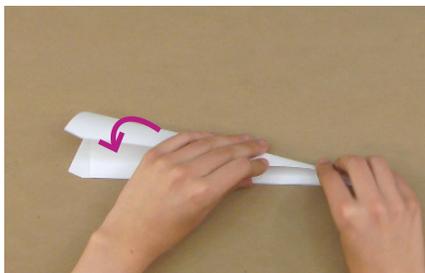
**4.** Now fold the top right diagonal edge down so that it lines up with the bottom edge of the airplane.



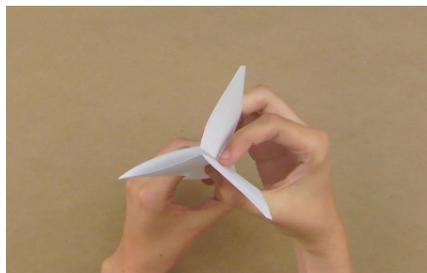
**5.** Flip the paper over and repeat step four with the top left diagonal edge.



**6.** Next, fold the top left diagonal edge down so that it lines up with the bottom edge of the airplane.



**7.** Flip the airplane over and repeat step six with the top right diagonal edge.



**8.** Look at the back of the paper airplane and gently bend the wings up so that they form three equal angles.



**9.** Your Classic Dart airplane is ready to fly!

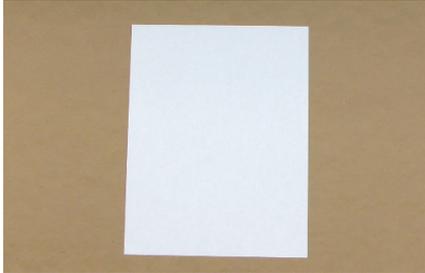
Special thanks to *The Paper Airplane Guy*, John Collins, for inspiring us with his award-winning designs!



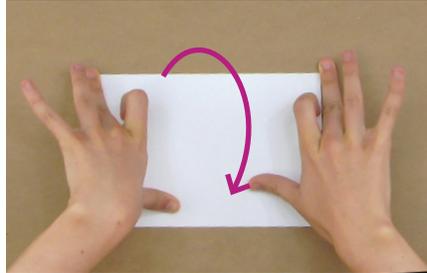


# Paper Airplanes

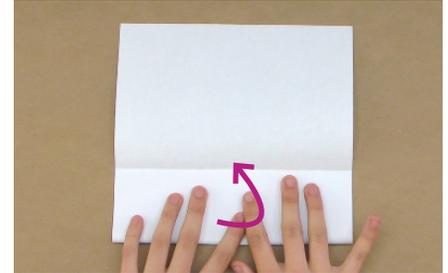
## The Front Four



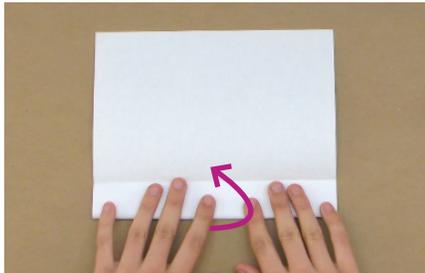
**1.** Start with an 8.5" x 11" paper in portrait orientation. You can use scissors or other hard edges to smooth all folds.



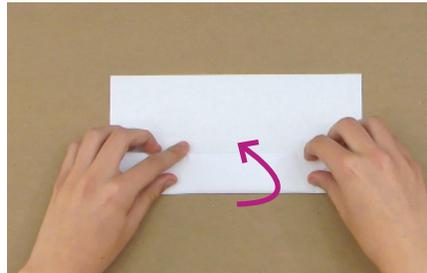
**2.** Fold the paper in half hamburger style, then open it again.



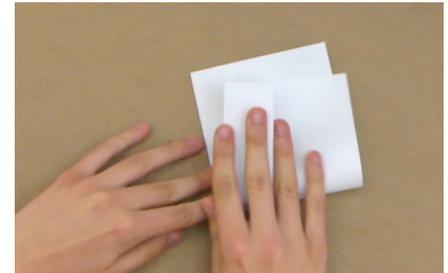
**3.** Fold the bottom edge up to meet the crease that you made across the middle.



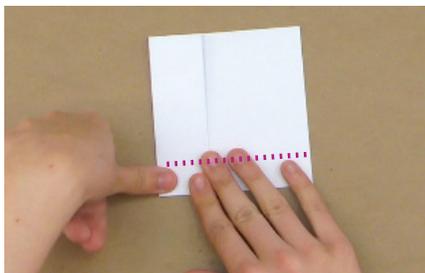
**4.** Fold the bottom edge of the paper up to the crease in the middle once more. The folded section should now be 1/8th of the original paper's size.



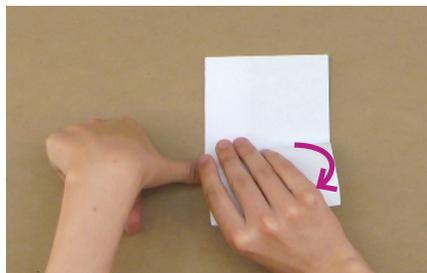
**5.** Now grab the folded section and flip it up over the original crease in the middle.



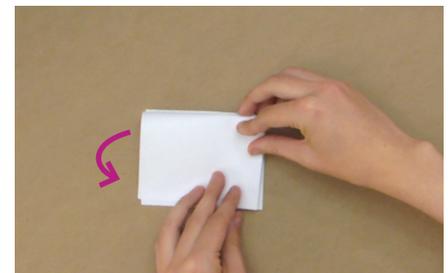
**6.** Turn the paper over and rotate it to portrait orientation. Now bend it in half hamburger style. You may have to crease the center a few times to align this fold.



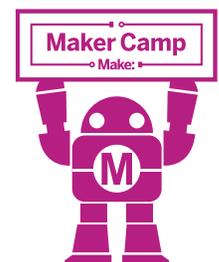
**7.** Place your thumb on top of the folded section parallel and adjacent to the bottom edge of the paper. You will be using your thumb's width as a measurement.



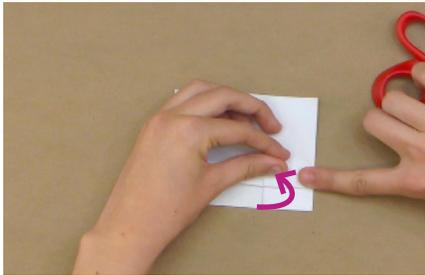
**8.** Fold the first wing down along the line that you measured with the top of your thumb in step seven.



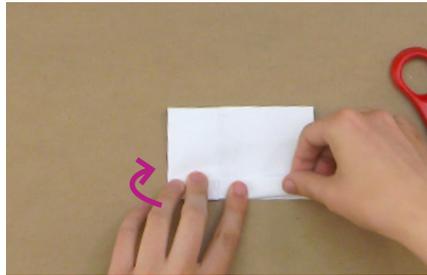
**9.** Flip your paper over and repeat step eight on the other side, making the wings evenly aligned.



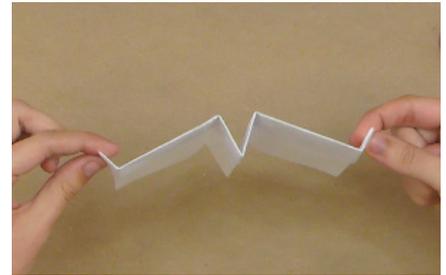
# The Front Four, continued



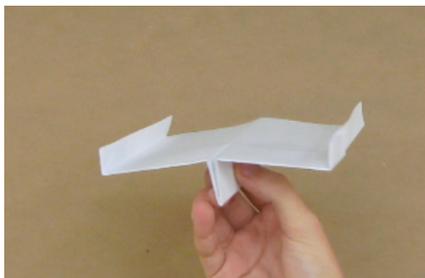
**10.** Now, using your pointer finger as a width measurement this time, fold the bottom edge of the wing up



**11.** Flip your paper over and repeat step ten with the other wing, making them evenly aligned.

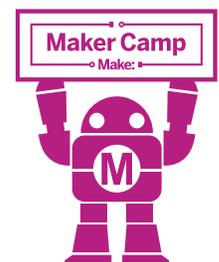


**12.** If you made all of the folds correctly, your finished paper airplane should look like this!



**13.** Your Front Four is ready to fly! Enjoy its fun and erratic flight patterns.

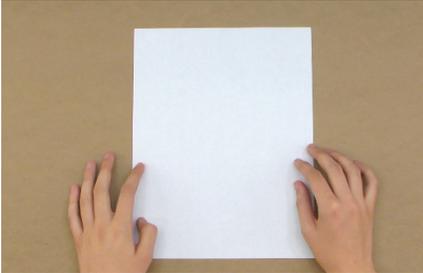
Special thanks to *The Paper Airplane Guy*, John Collins, for inspiring us with his award-winning designs!



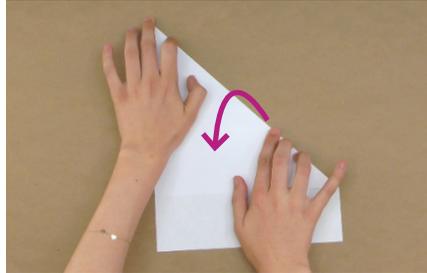


# Paper Airplanes

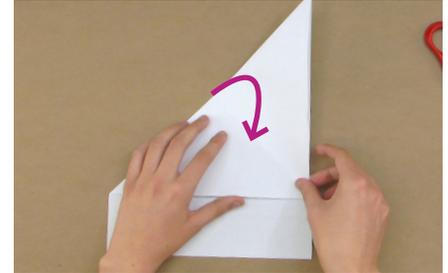
## Suzanne



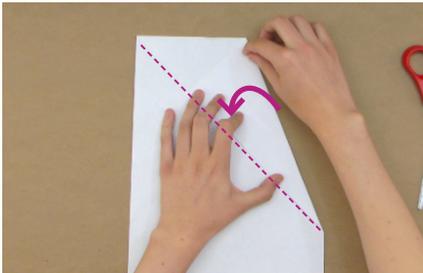
**1.** Start with an 8.5" x 11" paper in landscape orientation. If you want the precise dimensions of the *Suzanne*, then trim 19mm from the width of your paper.



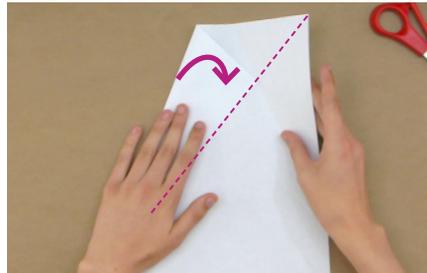
**2.** Fold the top right corner down so that the top edge of the sheet lines up with the left edge of the paper.



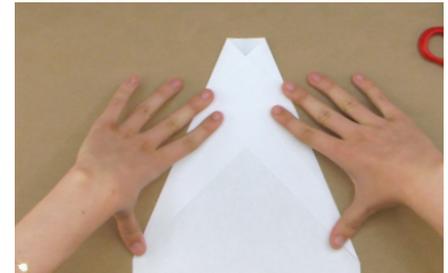
**3.** Unfold your paper and repeat step two with the top left corner. Unfold it again. You should now have an X-shaped crease in your paper.



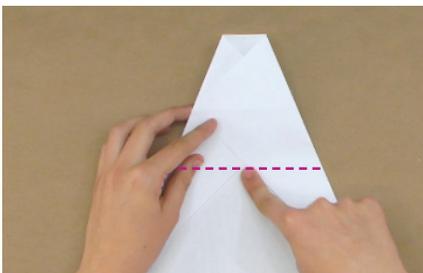
**4.** Now fold the right edge of the paper down so that it is aligned with the crease that you made in step two.



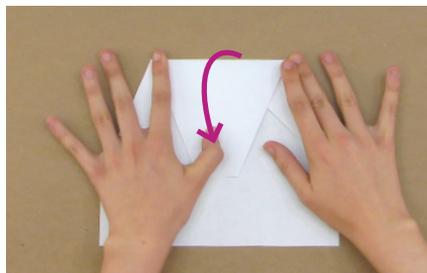
**5.** Unfold everything and repeat step four with the top left corner of your paper.



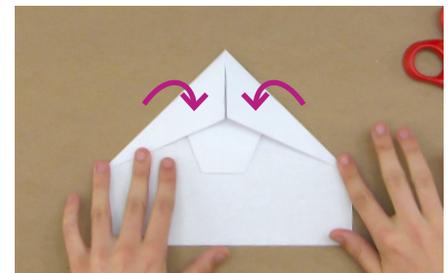
**6.** With the left flap still folded down, fold the right flap down on top of it.



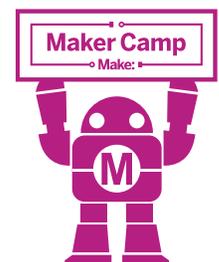
**7.** Make note of where the two edges intersect. You will be folding the top of your paper down at this point.



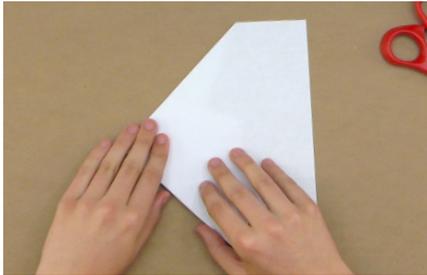
**8.** Fold the top of your paper down at the point that you marked in step seven. The top edge of your paper should be parallel with the bottom edge.



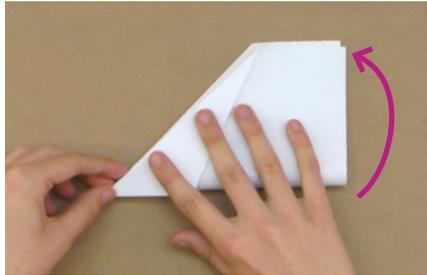
**9.** Fold the top left and right corners down so that they meet in the middle.



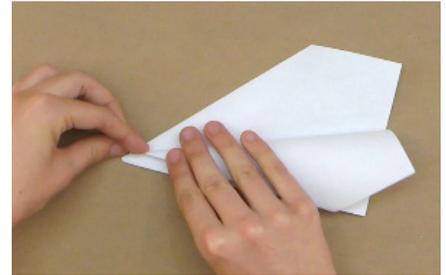
# Suzanne, continued



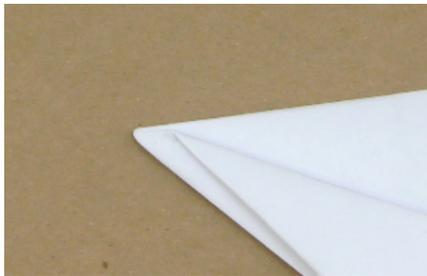
**10.** Flip your paper over and rotate it so that the nose of the plane is pointing to the side.



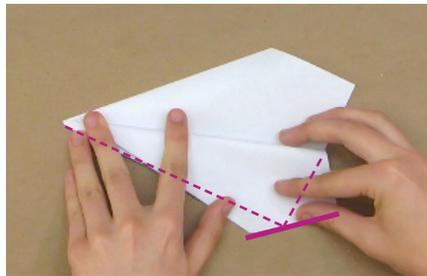
**11.** Fold the bottom edge up to align with the top edge.



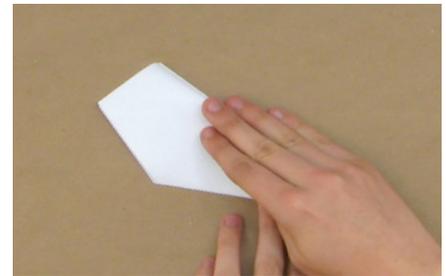
**12.** Now fold one wing down so that it starts about 1/4 of an inch away from the nose and so that the diagonal edge lines up with the point of the bottom corner.



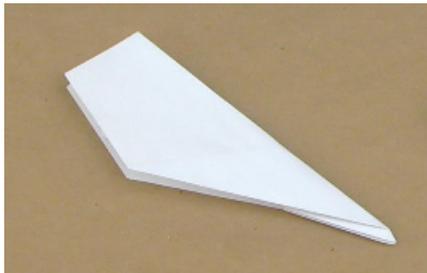
**13.** This is what the nose should look like.



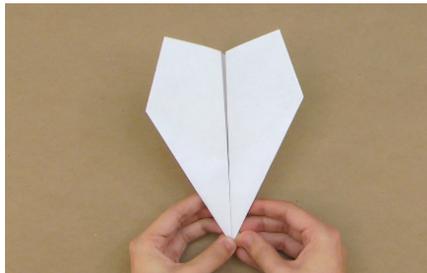
**14.** This is how the edge of the wing should line up with the corner (the dotted lines are the rest of the paper beneath the wing).



**15.** Flip your paper over and repeat step twelve on the other side to create the other wing. Make sure that the two wings are evenly aligned.

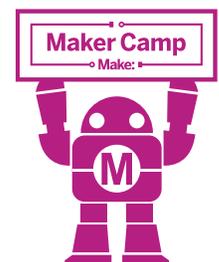


**16.** This is how your paper airplane should look if you did all of the folds correctly. Spread the wings so you can test it out!



**17.** Your *Suzanne* is now ready to fly! This paper airplane design holds the world record for the farthest distance flown by a paper airplane. How far will yours go?

Special thanks to *The Paper Airplane Guy*, John Collins, for inspiring us with his award-winning designs!



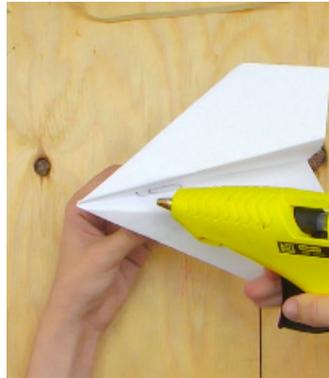
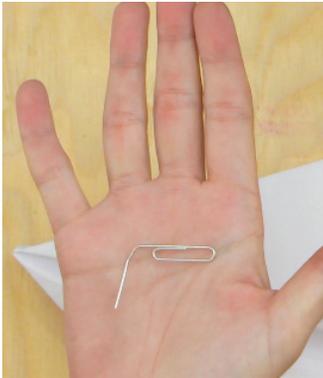


# Paper Airplane Launcher



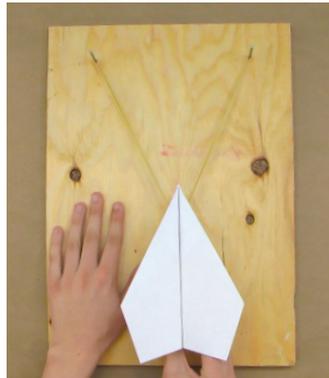
## 1. Set up the launcher.

Hammer the two nails into the board roughly one inch from the edge. Do not hammer them all the way into the board. They should stick out by at least 2 inches.  
» Space the nails far enough apart so that the paper airplane will have enough room to fly between them. » Stretch the rubber band around the nails.



## 2. Set up the airplane.

Bend the outer arm of the paper clip so that it forms a right angle with the body of the paper clip (see picture). » Poke the bent arm of the paper clip through the center of the paper airplane about one inch from the nose of the plane. » Hot glue the body of the paper clip along the inner walls of the airplane.



## 3. Test your launcher!

After the hot glue has dried, slightly bend back the arm of the paper clip that is sticking out underneath the plane so that it forms a hook. » Pinch the end of the plane beneath the wings with your fingers and hook it onto the rubber band. » Pull it towards you and then release the plane to watch it fly away! » Try adding books or more pieces of wood underneath the front end of your launcher to increase the angle at which it will fly off!

## Supplies

Paper airplane

Flat piece of wood that is wider than the paper airplane

1 large rubber band

2 nails

Hammer

Paperclip

Hot glue gun

