



Make Your Own X-59

Suggested Grades: 3-8



Activity Overview

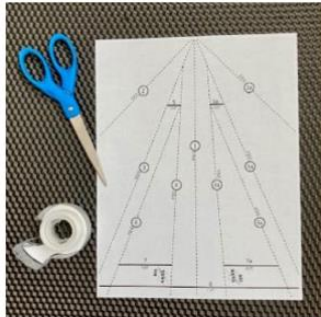
In this activity, you will make a paper airplane version of the X-59.

Time: 20 minutes

Materials

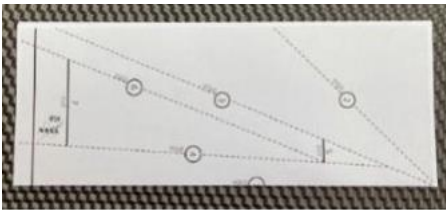
- Airplane Template (or 8½"x11" piece of paper)
- Scissors
- Tape

Steps

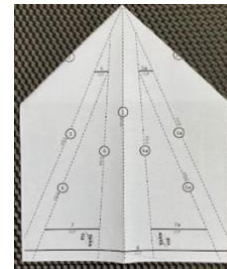


1. Gather all of your supplies as shown and listed above. When you print the template, which is the last page of this document, make sure that you select "Fit to Paper" in the print dialog box.

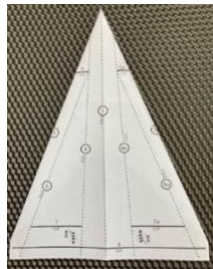
2. When you are using the template, you will be **folding along the dashed lines** and **cutting along the solid lines**. Each fold line will be on the outside of the fold. In other words, after folding, you should still be able to see the line. After making a fold, run your fingernail along the fold to make it a firm fold.



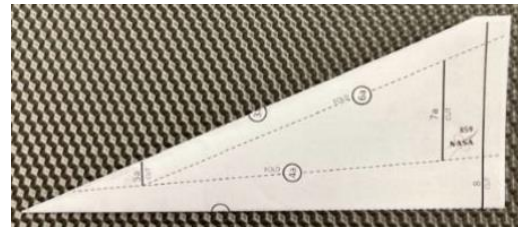
3. Fold the paper in half lengthwise as shown in Figure 2. This is done by folding along line 1. Unfold the paper.



4. Fold the two corners into the middle along lines 2 and 2a.



5. Fold the two edges into the center along lines 3 and 3a.



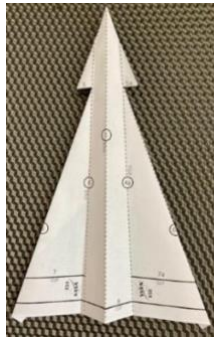
6. Fold the paper in half lengthwise along line 1. Your plane should look like this figure after this fold.



7. Fold the wings down along lines 4 and 4a.



8. Use your scissors to cut along lines 5 and 5a. Unfold the plane along line 1.



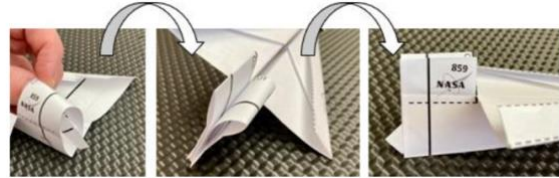
9. Fold in the edges of each wing, folding along lines 6 and 6a. Once you have fold both wings, your plane should look like this figure.



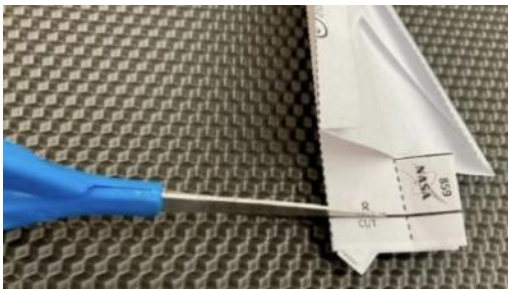
10. Fold the plane in half again along line 1. Then, fold down the wings.



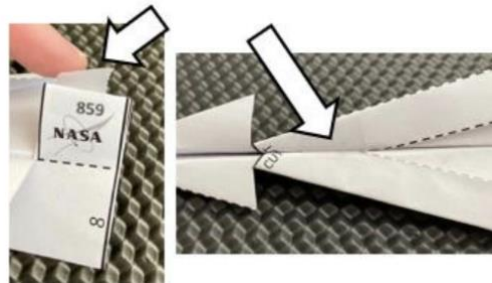
11. Turn the plane over and cut along lines 7 and 7a.



12. After cutting along lines 7 and 7a, turn the airplane so it is facing up once more. you have two pieces of the tail section. Fold the top of each section down into the bottom, center of the plane.



13. Cut off the back $\frac{1}{4}$ "- $\frac{1}{2}$ " of the tail section by cutting along line 8.



14. Place one piece of tape over the top of the tail section and one piece on the top of the plane. Put one small piece of tape over the top of the tail section to hold the two pieces together. Put another small piece of tape on the top of the plane.

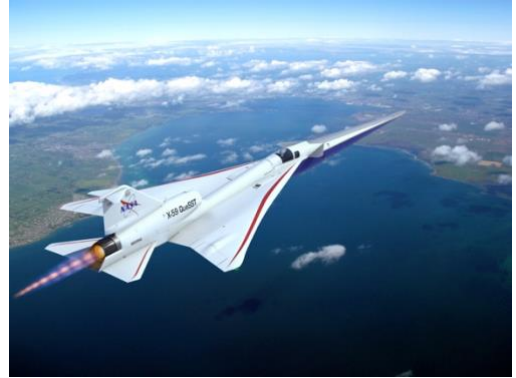


15. Place one piece of tape over the top of the tail section and one piece on the top of the plane. Your completed plane should look like the one shown.



Background Information

X-59 (QueSST) One of NASA's newest experimental aircraft, the X-59 (QueSST) is designed to lower the noise created by planes flying faster than the speed of sound. When planes fly supersonic (faster than the speed of sound), the pressure waves they create combine together and produce a very loud noise called a sonic boom. This noise is so loud that it can damage property and disturb animals.



A unique feature of the X-59 is the placement of two canards in front of the wings. These look like small wings, but they aren't designed to create lift for the plane. Instead, they help change the movement of the pressure waves so they don't combine and form the loud sonic boom. Instead, the plane creates a series of sonic "thumps" which are much quieter than booms. The effects of these thumps will be tested in locations around the United States to see if this lower noise level is more acceptable.

