



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 8.5x11" piece of paper)
- Scissors
- Tape

STEPS

1. Gather all of your supplies as shown in Figure 1 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.

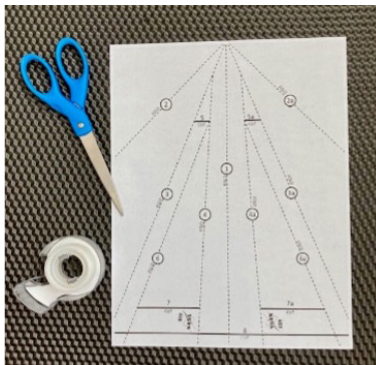


Figure 1—Gather your supplies.

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.

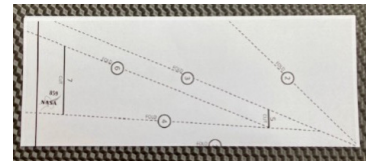


Figure 2—Fold the paper in half lengthwise.

4. Unfold the paper.
5. Fold the two corners into the middle along lines 2 and 2a (see Figure 3).

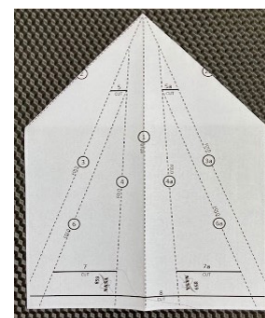


Figure 3—Fold the corners in along lines 2 and 2a.

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MKYOX59**

6. Fold the two edges into the center along lines 3 and 3a as shown in Figure 4.

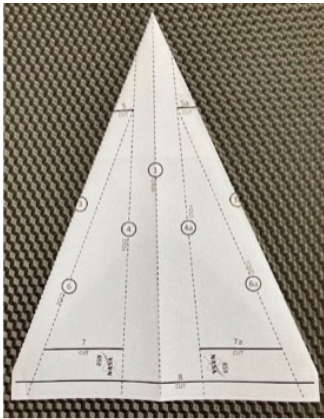


Figure 4- Fold the edges in along lines 3 and 3a.

7. Fold the paper in half lengthwise along line 1. Your plane should look like Figure 5 after this fold.

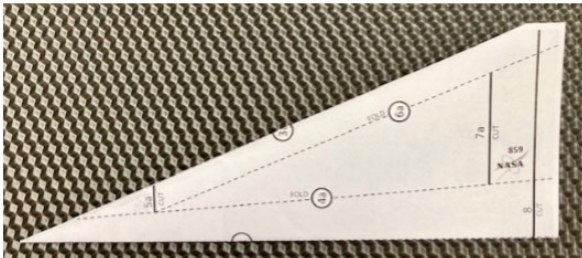


Figure 5- Fold the paper in half lengthwise.

8. Fold the wings down along lines 4 and 4a as shown in Figure 6.



Figure 6- Fold down the wings (along lines 4 and 4a).

9. Use your scissors to cut along lines 5 and 5a (see Figure 7).

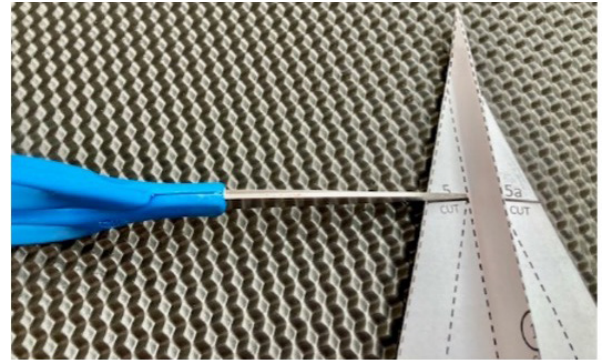


Figure 7- Cut along lines 5 and 5a.

10. Unfold the plane along line 1.
11. Fold in the edges of each wing, folding along lines 6 and 6a. Once you have fold both wings, your plane should look like Figure 8.

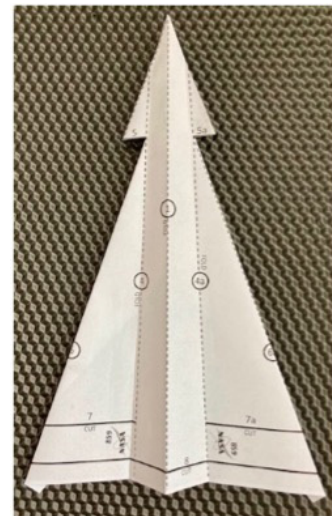


Figure 8- Fold in the edges of each wing, along lines 6 and 6a.

12. Fold the plane in half again along line 1. Then, fold down the wings as shown in Figure 9.



Figure 9- Fold the plane in half and then fold down the wings.

13. Turn the plane over and cut along lines 7 and 7a (see Figure 10).

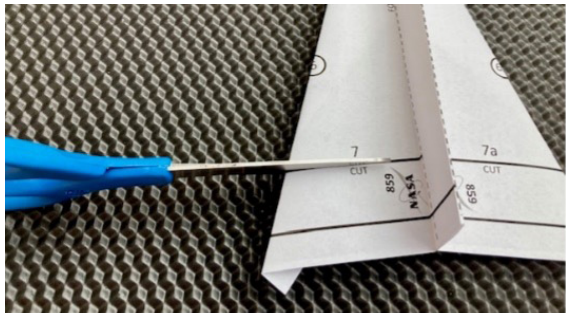


Figure 10-Cut along lines 7 and 7a.

14. 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 as shown in Figure 11.

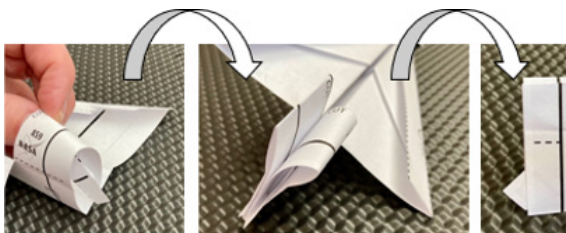


Figure 11- Fold down each side of the tail section.

15. Cut off the back 1/4" - 1/2" of the tail section by cutting along line 8 as shown in Figure 12.

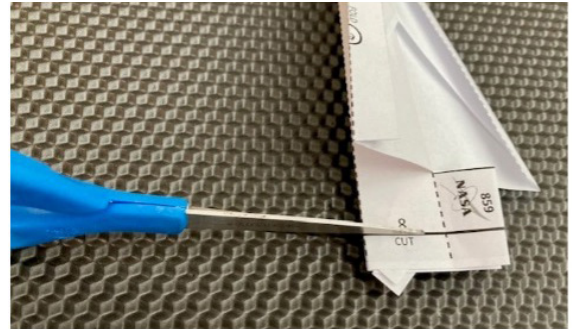


Figure 12- Cut off the back portion of the tail section.

16. As shown in Figure 13, 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, as shown in Figure 13.

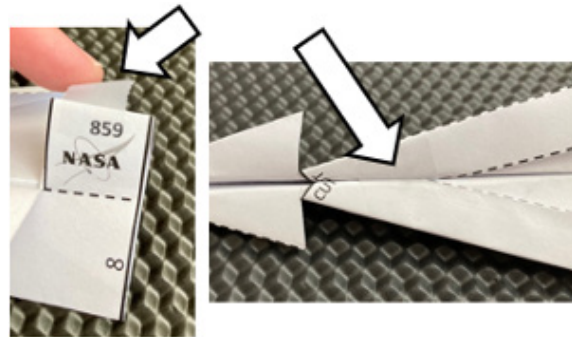


Figure 13- Place one piece of tape over the top of the tail section and one piece on the top of the plane.

17. Your completed plane should look like the one shown in Figure 14. Have fun flying it!!



Figure 14- Place one piece of tape over the top of the tail section and one piece on the top of the plane.

Background Information

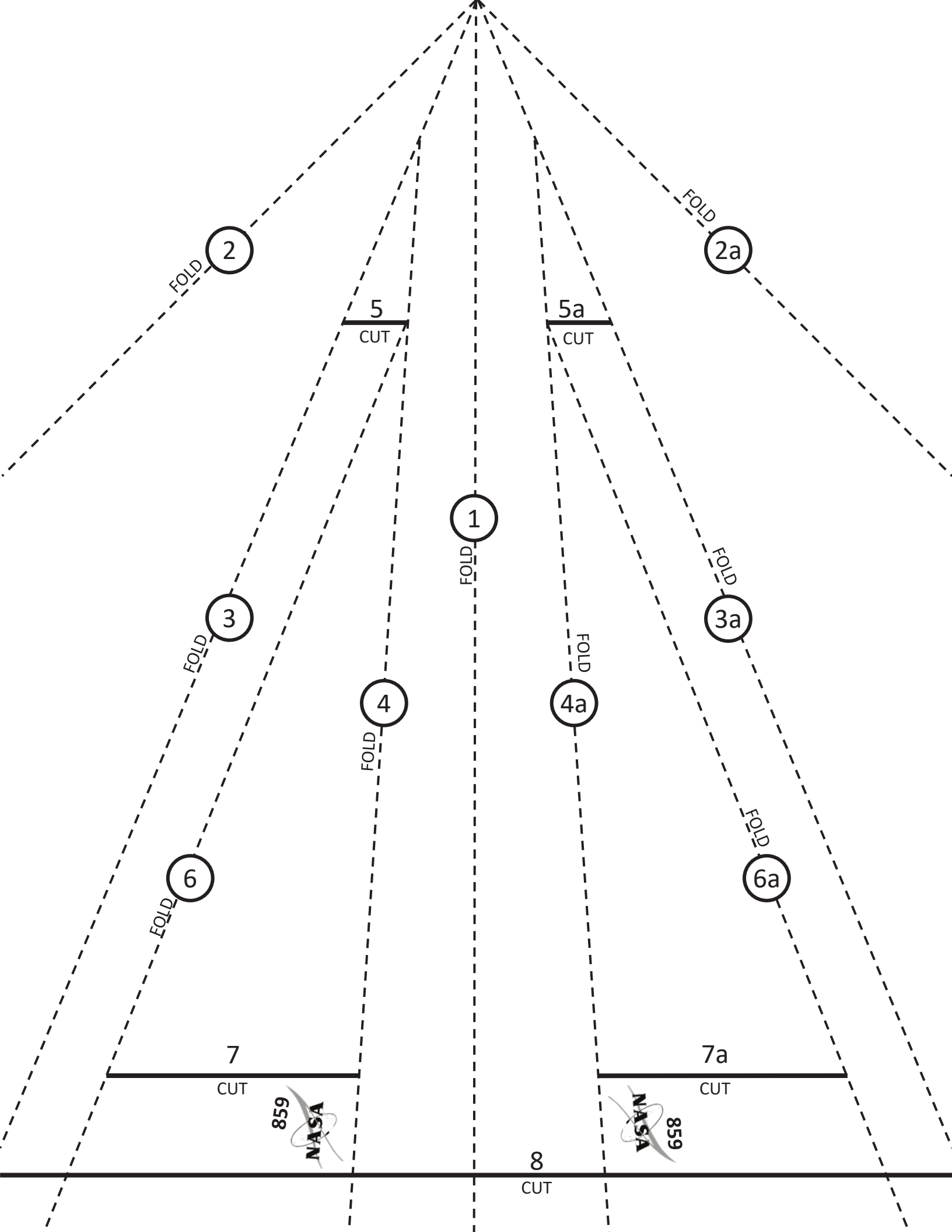


Figure 15–The X-59 Que斯特 is designed to fly supersonic without creating a sonic boom.

Que斯特

One of NASA's newest experimental aircraft, the X-59, 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.



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