



# X-59 Crossword Puzzle



Figure 1. The X-59 in flight

## Background Information

NASA's aeronautical innovators are leading a government-industry team to collect data that could make supersonic flight over land possible, dramatically reducing travel time in the United States or anywhere in the world.

The Low-boom Flight Demonstration mission has two goals:

1. Design and build a piloted, large-scale supersonic X-plane with technology that reduces the loudness of a sonic boom to that of a gentle thump.
2. Fly the X-plane over select U.S. communities to gather data on human responses to the low-boom flights and deliver that data set to U.S. and international regulators.

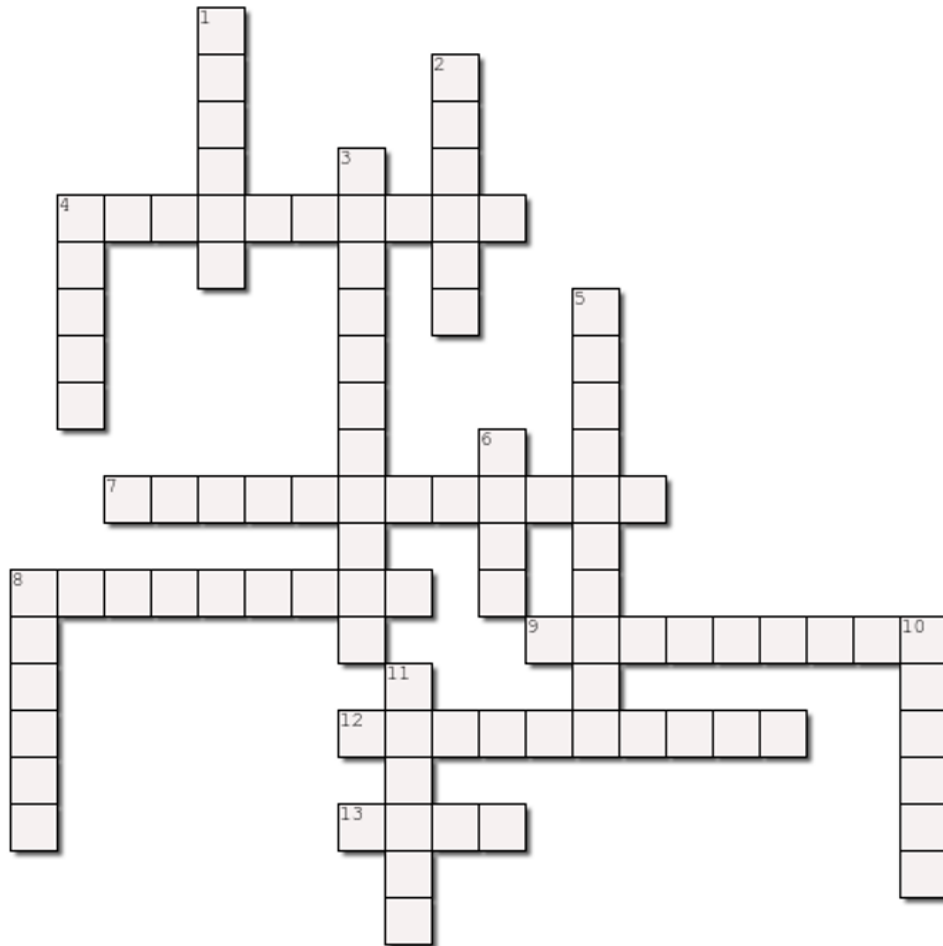


Figure 2. The X-59's unique design reduces the sonic boom to a quieter sonic thump.

In 2023, the X-59 Quiet Supersonic Technology (QueSST) will begin community flight tests that will demonstrate that annoying sonic booms can be transformed into quieter “sonic thumps.” These flights and the data they generate will pave the way for a next generation of commercial supersonic flight.

The data will enable new sound-based rules regarding supersonic flight over land to be written and adopted, which would open the doors to new commercial cargo and passenger markets to provide faster-than-sound air travel. NASA's X-59 QueSST experimental aircraft is the culmination of decades of research on supersonic flight, sonic booms and noise reduction.

Learn about the X-59 by visiting <https://www.nasa.gov/specials/X59/>, read the background information, and then complete the puzzle.



**Across**

4. Type of wave where the disturbance moves perpendicular to the direction of the wave
7. Type of wave where the disturbance moves in the same direction as the wave
8. The number of waves that pass a point in a certain amount of time
9. Very loud sound created when aircraft besides the X-59 fly faster than the speed of sound
12. Faster than the speed of sound
13. Data collected about the X-59 will allow supersonic flight over \_\_\_\_.

**Down**

1. An experimental airplane made by NASA
2. The full name of the X-59
3. The first "A" in NASA
4. The X-59 is designed to lower the noise associated with supersonic flight to a quieter "sonic \_\_\_\_."
5. Every sound is produced by \_\_\_\_.
6. Scientists use \_\_\_\_ tunnels to test how models of aircraft will perform in flight.
8. The X-59 will test the technology to fly \_\_\_\_, quieter and more efficiently.
10. The material through which a sound wave moves
11. The X-59 will fly over several U.S. cities to help NASA collect data on sound levels and the reaction of \_\_\_\_.

**Crossword Puzzle Word List**

- |               |                |              |
|---------------|----------------|--------------|
| • Aeronautics | • Longitudinal | • Thump      |
| • Faster      | • Medium       | • Transverse |
| • Frequency   | • QueSST       | • Vibrations |
| • Humans      | • Sonic boom   | • Wind       |
| • Land        | • Supersonic   | • X plane    |