



$$SPL = 20 \log_{10} \left(\frac{P}{P_{Pref}} \right) \text{ dB}$$



noise

sonic
boom

sound

STEM LEARNING:
The X-59 Digital Experience
Comprehension Questions

THE X-59 DIGITAL EXPERIENCE

COMPREHENSION QUESTIONS

WHAT IS THE X-59 QUESST?

1. What is the X-59 QueSST?

WHY BUILD A QUIET SUPERSONIC AIRCRAFT?

2. What does “QueSST” stand for?
3. How fast (in Mach) will the X-59 Fly? How fast is that in miles per hour? (Hint: Mach 1 = 767 miles per hour).

WHAT'S THE SCIENCE OF SOUND?

4. What type of wave is a sound wave?
5. Draw an example of a sound wave and label a compression and a rarefaction.

6. How fast is a plane traveling when it's "supersonic?"

7. What is a sonic boom?

WHAT TOOLS DID WE NEED TO DESIGN THE X-59?

8. Pick a tool that was used to design the X-59 QueSST and describe what it is.

9. Why do you think that public perception is an important part of the Low Boom Flight Demonstrator Mission?

HOW IS THE X-59 DESIGNED TO QUIET THE BOOM?

10. Pick one of these features: shape, engine, wings, and describe how it makes the X-59 QueSST quieter.

11. Describe how the pilot will see when flying the aircraft.

WHO ARE THE PEOPLE BEHIND THE X-59?

12. Choose 1 person who is working on the Low Boom Flight Demonstrator Mission and describe why they are excited to be working on the mission.

13. Which job sounds the most interesting to you? What type of education does that person have?

WHAT'S NEXT FOR X-59?

14. When will the X-59 QueSST begin its community flights?

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