

Engineering is Out of This World!

Acoustical Engineering



NASA is developing a new rocket called the Space Launch System, or SLS. The SLS will be able to carry astronauts and materials, known as payloads. **Acoustical engineers** are helping to build the SLS.

Sound is a vibration. A vibration is a rapid motion of an object back and forth.

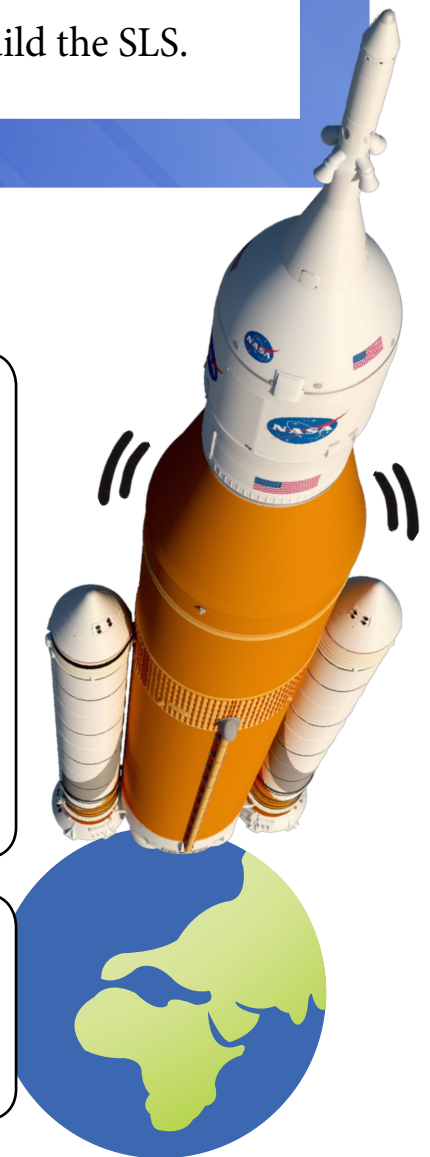
Hold a piece of paper up right in front of your lips. Talk or sing into the paper.

What do you feel? _____

What do you think is causing the vibration?



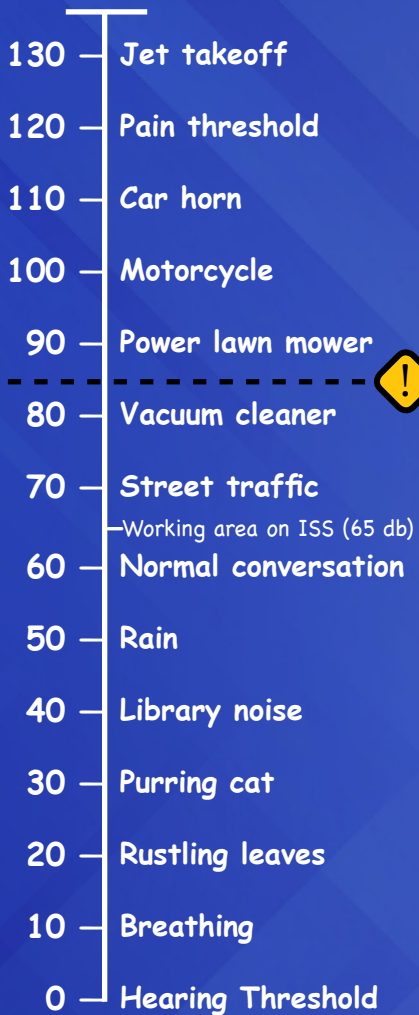
If too much noise, or **acoustical loading**, is caused by air passing over the SLS rocket, the vehicle could be damaged by the vibration!



NAME: _____

(Continued from front)

Typical Sound Levels in Decibels (dB)



Hearing protection
is recommended at
85 decibels.

Experiment with the paper.

Does talking louder or softer change the vibration?

Is the vibration affected by the pitch of your voice? (Hint: Pitch is how deep or high the sound is.)

Change the angle of the paper. What happens?

Why do you think NASA hires acoustical engineers? (Hint: Think about how loud rockets are!)

How do you think the noise on an airplane compares to the noise on a rocket?

NASA is currently researching ways to reduce the noise made by airplanes.

In what ways does an airplane make noise? (If you haven't flown, think of riding in your family car or standing on a busy street corner.)
