



Tuning Fork Activity

<https://www.noisyplanet.nidcd.nih.gov>



Every day, we experience sound in our environment, such as the sounds from television and radio, household appliances, and traffic. Normally, these sounds are at safe levels that do not damage our hearing. However, sounds can be harmful when they are too loud, even for a brief time, or when they are both loud and long lasting. These sounds can damage sensitive structures in the inner ear and cause noise-induced hearing loss (NIHL). Approximately 26 million adults in the United States—and millions of teens—have hearing loss likely caused by noise.

The good news is that NIHL is preventable. Developing healthy hearing habits while young is a key step to preventing hearing loss. To increase awareness among parents and youth about NIHL and how to prevent it, the National Institute on Deafness and Other Communication Disorders (NIDCD), part of the National Institutes of Health, developed the health education campaign *It's a Noisy Planet. Protect Their Hearing.*[®]

The Noisy Planet campaign offers a wide range of print and online materials to help spread the word and educate youth and adults about the importance of hearing preservation. One component of the campaign is an interactive 45-minute classroom presentation. There are several activities that presenters can choose to reinforce educational messages. One activity to demonstrate sound vibrations is the tuning fork activity. The tuning fork activity teaches the science of sound and demonstrates how sound travels in vibrating waves through the ear. Vibrations can be powerful. The stronger the vibrations, the louder the sound.

Steps:

1. Explain to the audience that sound travels in waves.
2. Select a volunteer from the audience to come up and assist.
3. Have the volunteer hold the top of the string attached to the ping pong ball, so the ping pong ball is hanging below without obstruction.
4. Hit the vibrating end of the tuning fork on a hard surface (e.g., table, desk, bottom of shoe).



Materials:

- String (approximately 15 inches)
- Ping pong ball
- Tape
- Tuning fork
- Hard surface such as a table or desk
- Take about 2 inches of the string and tape one end to the ping pong ball. It should be taped just enough so that the ball can be held up using the string and will not fall off.

5. Hold the vibrating tuning fork up to the ping pong ball so that the tuning fork prongs are lightly touching the hanging ping pong ball.
6. The ping pong ball should bounce away from the tuning fork as the vibrations from the tuning fork pass to the ball and make it move. Explain that the stronger the vibrations, the louder the sound.



For free materials or to learn more about how to prevent NIHL, visit the Noisy Planet website at <https://www.noisyplanet.nidcd.nih.gov>.

The National Institute on Deafness and Other Communication Disorders (NIDCD), part of the National Institutes of Health (NIH), conducts and supports research in the normal and disordered processes of hearing, balance, taste, smell, voice, speech, and language.

For more information about hearing and hearing loss, contact:

NIDCD Information Clearinghouse
1 Communication Avenue, Bethesda, MD 20892-3456
Voice: (800) 241-1044
TTY: (800) 241-1055
Email: NPInfo@nidcd.nih.gov



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