

# **Under Water Acoustics Sound Monitoring**

### Middle School Scientists Curriculum

| Vocabulary                    |   |
|-------------------------------|---|
| Acoustics                     | The study of sound.   |
| Ambient Noise                 | In acoustics, ambient noise is any sound in the background other than the sound being monitored.  |
| Anthropogenic                 | Of, relating to, or resulting from the influence of human beings on nature.   |
| Decibel (dB)                  | The unit of measure of sound intensity, abbreviated dB. The faintest sound most people can hear is 0 dB.  |
| Echolocation                  | A sensory system in bats and dolphins in which sounds are emitted and echoes interpreted to determine the direction and distance of objects. See Sonar.   |
| Frequency                     | The number of times an object vibrates per second.  |
| Hydrophone                    | A microphone designed to be used underwater for recording or listening to underwater sound.   |
| Infrasonic Sound              | Having or relating to a frequency below the audibility range of the human ear.  |
| Pitch                         | The highness or lowness of a sound, which is determined by the frequency of the sound waves.  |
| Sonar                         | (Originally an acronym for SOund Navigation And Ranging) is a system that uses transmitted and reflected underwater sound waves to detect and locate submerged objects or measure the distances underwater. |
| Sound                         | The sensation stimulated in the organs of hearing by such vibrations in the air or other medium.  |
| Sound Receiver                | A device that listens to, and may record sounds.  |
| Sound Source                  | An object that causes waves to be transmitted through a medium that leads to the sensation of hearing.  |
| Time of Arrival<br>Difference | The difference in time from when a sound arrives at one sound receiver to when it arrives at another sound receiver.  |

**Triangulation** 

One method for calculating the position of a sound source in the ocean by deter

mining its distance from three or more listening systems.

**Ultrasonic Sound** 

Refers to anything above the frequencies of sound audible to humans.

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# **Video Questions**

| Before watching the video, try to answer these questions. Watch the video and take notes on the answers given by the researchers. Compare answers. |  |
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| 1. What is underwater acoustic monitoring?   |  |
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| 2. \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\  |  |
| 2. What animals can you hear underwater?   |  |
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| 3. What else do you hear underwater?   |  |
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| 4. How can you record underwater sounds?   |  |
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| 5. Why is studying underwater sounds so important?   |  |
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