NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What’s that Sound?**

**Sound is especially important for marine mammals**. In today’s activity, you’ll learn about bioacoustics, properties of sound waves, and the characteristics of marine mammal sound. You’ll learn enough to identify the species of your own marine mammal mystery sound!

1. Acoustics is the study of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Bioacoustics combines \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_.
3. Provide three reasons why marine mammals use sound underwater.
4. Sound is a \_\_\_\_\_\_\_\_ that travels 5 times\_\_\_\_\_\_\_\_\_\_ in water than air.
5. Label and define the following:



1. Frequency is the number of \_\_\_\_\_\_\_\_\_\_\_\_\_ per \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Which wavelength has the highest frequency? Lowest? The most energy? The last amount of energy?

 Long wavelength = **high / low** frequency = **high / low** energy



Short wavelength = **high / low** frequency = **high / low** energy



1. Low frequency sounds travel \_\_\_\_\_\_\_\_\_\_\_than high frequency sounds underwater.
2. A waveform (example below) shows \_\_\_\_\_\_\_\_\_\_ fluctuations over \_\_\_\_\_\_\_\_, with amplitude indicating \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



Pressure

Time (seconds)

1. A spectrogram (example below) shows \_\_\_\_\_\_\_\_\_\_\_\_\_\_ over\_\_\_\_\_\_\_\_\_, with color indicating \_\_\_\_\_\_\_\_\_\_\_\_\_\_, or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 

Time (seconds)

Frequency (Hz)

1. Peak Frequency: the frequency with the most \_\_\_\_\_\_\_\_\_\_\_\_.
2. Marine Mammal Bioacoustics Review Table

|  |  |  |  |
| --- | --- | --- | --- |
| **Marine Mammal Group** | **Example** | **Common Frequencies** | **Use** |
| Mysticetes(baleen whales) | blue whale |  |  |
| Odontocetes(toothed whales) | Bottlenose dolphin |  |  |
| Pinnipeds(seals & sea lions) | CA sea lion |  |  |