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| **Subject:** | Science |
| **Title:** | Arena Noise |
| **Grade Level:** | 3 |
| **Purpose:** | Students explore varying levels of sound in a hockey arena and their affects on the human ear. |
| **Curricular**  **Connections:** | * Describe the nature of sound, and demonstrate methods for producing and controlling sound. * Recognize that there are ways of measuring the loudness of sounds and that loud sounds pose a danger to the ear. |
| **Materials:** | * **Arena Noise Worksheet** * List of sounds and their decibels. |
| **Activity:** | 1. Explain that we measure the strength of a sound in decibels (dB). We can look at the decibel level to determine if those sounds are safe for our ears, and for how long. 2. The lower the decibel the safer it is for our ears. Loud noises at high decibels can cause damage to our hearing over time. 3. Have students brainstorm different types of sounds they may hear at a hockey arena during a game. 4. Complete **Arena Noise Worksheet**. Use the list of common sounds and their decibels to help students estimate the decibel level. |
| **Assessment:** | Is the student able to:   * Understand how sound is measured. * Accurately estimate where types of sound should go on the decibel meter. * Describe ways to protect their hearing. |

**Arena Noise**

Sound is measure in: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

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| **Sounds found in a hockey arena during a game:** | |
| **Noise** | **Estimate dB** |
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Label the decibel meter with the noises listed above. Colour: Safe sounds GREEN

Safe in small amounts YELLOW

Unsafe sounds RED

|  |
| --- |
| 0 |

|  |
| --- |
| 70 |

|  |
| --- |
| 140 |

How can you keep your hearing safe during a game? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Noise Type** | **Decibel Level** |
| Weakest Sound heard | 0dB |
| Empty Theatre | 20dB |
| Whisper | 30dB |
| To Awaken a Sleeping Person | 45dB |
| Normal Conversation | 60dB |
| Average Radio | 70dB |
| Noisy office | 80dB |
| City Traffic (inside car) | 85dB |
| Pre-game Crowd Noise | 90dB |
| Subway Train | 95dB |
| Motorcycle | 100dB |
| Hockey Game | 105dB |
| Loud Rock Concert | 115dB |
| Peak Game Noise | 130dB |
| Jet Engine | 140dB |