Lesson Plan

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| **Lesson Title/Focus** | Day 4 | **Date** | January, 12th |
| **Subject/Grade Level** | Grade 3 Science | **Time Duration** | 40mins (2:00- 2:40) |
| **Unit** | Hearing and Sounds | **Teacher** | Miss. H |

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| **OUTCOMES FROM ALBERTA PROGRAM OF STUDIES** | |
| **General Learning Outcomes:** | **3–9 Describe the nature of sound, and demonstrate methods for producing and controlling sound.** |
| **Specific Learning Outcomes:** | 1. Recognize that pitch is the result of differences in the rate of vibration, and predict how a change in the rate of vibration will affect a sound. |

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| **LEARNING OBJECTIVES** | |
| **Students will:** | * Discuss the term pitch (4) * Explore low and high pitches (4) |

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| **ASSESSMENTS** | |
| **Observations:** | * Are students understanding that there are differences in the sounds? * Are students grasping the idea of what determines pitch? |
| **Key Questions**: | * How is pitch determined? * How is high pitch produced? * How is low pitch produced? |
| **Products/Performances:** | * Knowing the difference between high and low pitch * Knowing the difference between loudness and pitch * Knowing that frequencies (speed of vibration) is what causes pitch |

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| **LEARNING RESOURCES CONSULTED** | **MATERIALS AND EQUIPMENT** |
| * Edmonton Public Schools Hearing and Sounds Unit D | * Guitar |

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| **PROCEDURE** | | | |
| ***Prior to lesson*** | Have guitar ready  Have worksheets printed | | |
| **Introduction** | | | **Time** |
| ***Attention Grabber*** | Bring out the guitar to show the students!  -Let the students know if they stay on task today during the science lesson that I will leave sometime that we can pluck some strings on the guitar to see them vibrate.  -If my expectations are not meet than I will not bring the guitar out today and we will try again another day | | 2:00-2:05 |
| ***Assessment of Prior Knowledge*** | Telephone:  What is pitch?  **The highness and lowest of the sound is called pitch.** | |
| ***Expectations for Learning and Behaviour*** | -Being gentle with my guitar | |
| ***Advance Organizer/Agenda*** | Introduction  Lesson on Pitch  -Debriefing questions  Guitar Fun  Closure | |
| ***Transition to Body*** | Okay lets talk sound. | |
| **Body** | | | **Time** |
| ***Learning Activity #1*** | Debriefing Notes:  *What happens when you change the length of the ruler?*  -When you made a low sound the ruler was moving up and down (vibrating) more slowly. When we heard a high sound the ruler was moving faster.  **The highness and lowest of the sound is called pitch.**  -The number of times the ruler vibrates in one second is called the **frequency.**  -High pitch sounds have a higher frequency than low sounds  **A longer ruler makes a lower sound and a shorter ruler makes a higher sound**  Little lesson on properties of sound:   1. Sound has 3 properties that are used to describe it 2. **Pitch**   -How high or low a sound is is called pitch. Pitch is determined by the speed or frequency of vibration.  -Frequency is defined as the number of vibrations per second. A high sound has more frequency (meaning faster speed) per second than a low sound.  -Pitch is changed by manipulating variables such as tightness, length, and thickness of the string.  -The tighter a string is the faster it vibrates creating a higher pitch  -The shorter the object the faster the vibration in turn the higher the pitch 🡪 demonstrated in the ruler activity coming up next where the students make the ruler vibrate at varying lengths, there is a change in the pitch of the sound.  -the thinner the string the higher the pitch of the sound  -PITCH IS NOT LOUDNESS OF SOFTNESS OF SOUND   1. **Loudness**   -Loudness or softness of a sound is determined by the energy applied to an object to make it vibrate.  -Loudness of a sound is determined by two factors:  1. Distance from the sound making object and the ear  2.Force used in making the sound  -When a string is struck softly it moves up an down very little. When it is struck forcefully it will vibrate the same amount of times per second but will have a greater amplitude (volume) being the vertical distance in a sound wave.   1. **Quality**   -Pleasant and unpleasant sounds  -what is music to our ears and what is noise?  -Unpleasant sound will often contain irregular or uneven frequencies  Knowledge Check  -Have the students explain it to a partner using their own words to describe what pitch is and how it is determined  - have the students draw on a piece of paper high pitch waves and low pitch waves  **Guitar Fun**   * Have all the students come up to the front of the class and sit down, one by one each of them can come up and strike the strings on the guitar we will watch the strings and talk about the vibrations and sounds we hear | | 2:05-2:15/20  2:15/20- 2:30 |
| *Assessments/ Differentiation* | Formative assessment:  -Observations of students’ understandings of pitch  -Class discussion  -Exit Slips | |
| **Closure** | | | **Time** |
| ***Assessment of Learning:*** | | One by the one to line up you must answer a question.  What causes high pitch?  What causes low pitch?  Fast frequencies cause what sort of pitch?  Slow frequencies cause what sort of pitch?  What is pitch?  Is pitch different from loud and soft sounds?  Why? | 2:30-2:35 |
| ***Feedback From Students:*** | | What is your favorite type of learning? |
| ***Feedback To Students*** | | Let them know how they meet your expectations today |
| ***Transition To Next Lesson*** | | Next day we will do an activity on pitch and talk about loud and quiet sounds, and then hopefully get into how sound can damage the ear. |

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| **Sponge Activity/Activities** | **Be the Teacher**   * In this sponge activity, I will either ask for a volunteer or call on someone at random to re-teach what they learned that day.  When I call on them, I address them as "Mr." or Ms." and ask them questions as they demonstrate their lesson re-cap.  I expect their lesson to last at least two minutes or so and sometimes use questions to help them reach that time requirement.  Also, I encourage the other students to ask questions so that the "teacher" can field them.  This is a great review activity that all students can benefit from. |

**Reflections from the lesson:**