

#4 Learning Centers – What changes the sound

Names _____

Date _____

Directions: For each Learning Center answer the questions after completing each test and recording your group’s observations.

Learning Center #1 SIZE

1. Directions: Using strings as a carrier of the sound waves, wrap the strings around both of your pointer fingers so that the string is hanging down. Place the fingers in your ears, not the strings. Have a group member tap the spoons one at a time with a pencil. Listen to the different pitches that each spoon creates.

Record what you believe to be the correct statement as to the difference size makes in pitch.

Questions: A) Which spoon had the highest pitch?

B) Write a true statement based on your results of testing.

C) Give an example in the world of instruments to prove your statement about the size and sound.

D) What is vibrating to create the sound?

Worksheet

Sound

Learning Center #2 LENGTH

A) By plucking the rubber bands on the board, what statement can you make about the length of the bands and the pitch of the sound?

B) Give an example from the world of instruments and explain how the length plays a part in the sound.

C) What is vibrating to create the sound?

Learning Center #3 VOLUME

Directions: Tap below the water line with a pencil.

A) Listen to the different pitches and write a statement about the amount of water and pitch.

B) What is vibrating?

Learning Center #4 TIGHTNESS

Directions: Pluck each string one at a time.

A) What do you notice?

Worksheet

Sound

- B) What do you think changes the pitch of each string?
- C) What statement can you make about tightness and vibration?
- D) How can you relate this experiment to the world of instruments?

Learning Center #5

Directions: This make take some practice so use the empty bottles to blow into until you get a good tone. Sticking you bottom lip out and blowing lightly over the top of the opening may help. You will be testing the pitch result on different sizes of *column of air*. The water will help take up some of the space that air could fill.

- A) What do you think about the pitch of the longest column of air and the one with the shortness air column?
- B) Is there a similarity to the results to Learning Center #2 and this experiment?
- C) Explain:

Worksheet

Sound

D) What is doing the vibrating to create the sound?

E) What is frequency?

F) What is pitch?

