Musical Instruments: Part 1

Name _______________________________

Learning Goals:

- Students will be able to describe how sounds are produced with vibrations.
- Students will be able to describe how tones can be varied by changing the length of the resonant cavity.
- Students will know some of the instruments found in the woodwind, brass and string families.

Predictions – graded for completeness not correctness

1. What instruments, if any, have you ever played?

2. Please describe with as much detail as you can, how an instrument makes sound. Pick at least two examples to describe.

3. Please describe with as much detail as you can, how different tones are made with these instruments.
Straw Instrument: Trombone

4. How do you make the lowest possible pitch with your straw trombone?

5. How do you make the highest possible pitch with your straw trombone?

Straw Instrument: modification

6. Test how your straw instrument sounds after you cut about 1 inch off the end.

7. Keep cutting 1-inch sections off and compare how the sound changes.

8. Think about resonance – the natural frequency of something, or the frequency it likes to vibrate at. Where do you think the resonance is happening in your straw instruments? Hint: what determines its pitch?

Water Bottles

9. Now use the water bottle. Blow over the top of the water bottle until you have a tone. Would you describe it as a low pitch or a high pitch?

10. What kind of instrument does the bottle remind you of?
11. Figure out how to make a new town with the same water bottle. Describe what you did to change the tone.

12. Where is the resonance happening with the water bottle instrument?