



# **Science of Sound**

**Aaron Fowler**

**Arts Partners-Teaching Artist**

# Examples



## *Oh Great Spirit...*

What instrument was used, which instrument family, how is the sound made?

## *Hardwood...*

What instrument was used, which instrument family, how is the sound made?

## *Song of the Wind...*

What instrument was used, which instrument family, how is the sound made?

## *Ode to Joy...*

What instrument was used, which instrument family, how is the sound made?

# Making the Connections....



## **Acoustics**

*The study of how well sound can be heard in a particular room or hall.*

## **Frequency**

*The number of complete waves that pass a given point in a certain amount of time.*

*Measured in **HERTZ** (Htz) – show/listen to example*

*Term used to calculate frequency*

## **Pitch**

*Perception of the frequency of a sound High or Low*

# Making the Connections....



## Decibels

*A unit of measurement of loudness...abbreviation is db*

## Loudness

*Perception of the intensity of a sound*

## Volume

*Intensity of sound...loud and quiet*

# Making the Connections....



## Dynamics

*Volume of a sound or note.*

## Timbre

*The overall quality of a note, distinguishes one sound from another. Why you can tell the difference between a violin and a trumpet or your sister from your mother.*

## Vibration

*A repeated back and forth or up and down motion.*

# Making the Connections....

## Music

A set of tones and overtones combined in a way that are “pleasing” to the ear.

## Noise

A mixture of sound waves with no pleasing timbre and no identifiable pitch.



# Assignment...

## MAKING YOUR OWN INSTRUMENT

1. Percussion, string or wind instrument
2. Must make 3 DIFFERENT sound
3. Must be able to describe and distinguish the 3 sounds.



# **GOOD LUCK!**

**Instrument sharing day will be  
next week.**





# Show and tell!

- 1. What instrument family, wind, string, percussion?**
- 2. How does your instrument make sounds?**
- 3. Describe how you made your instrument.**
- 4. Demonstrate three different sounds?**

Decibels equals loudness. (Loud or quiet)

Frequency (hertz) equals pitch. (High or low)

Timbre is the unique sound your instrument makes.

