

Series 2, Episode 1

Lesson Plan and Worksheets

Grade Range: K-8

Topic: Adding Up the Orchestra

Duration: Approx. 50 mins

Objective(s): Using active listening skills, students will identify the 4 different families found in an orchestra, how they make sound, and how their size relates to their pitch.

Outcome(s): Students will use the knowledge gained during the lesson to create, classify, and organize the various instruments and graph where they fall based on how high or low they sound.

Summary of Tasks/ Actions:

Pre-Episode Activity [10']

Ask your students if they have ever played an instrument, seen an orchestra, or heard classical music. Have them write down what they think an orchestra is? Have them describe what they think high sounds might be?

Module 1 - Introduction to the Orchestra:

Students will watch Module 1 which introduces students to the 4 instrument families of the orchestra (woodwind, brass, percussion, string). Students will discover how each instrument makes their sound and that the size of the instrument determines its pitch (smaller instruments make “high” sound and larger instruments make “low” sounds).

Adding Up the Orchestra Episode [20']

Using the “focus piece” as inspiration as well as the post-concert materials provided, students will organize instruments based on their approximate soundwave and create their own orchestra.

I. Ordering Instruments by Frequency

- Students will order instruments in each family based on the frequency of the lowest note that instrument can play.
- Soundwaves are approximations and should not be taken as exact representations.

II. Creating Your Own Orchestra

- Students will cut out the various instruments provided and put them on the outline of the Capitol Theatre stage to create their own orchestra.

- Students may also draw the instruments on the stage if they prefer.
- Students should be encouraged to mimic the orchestra they saw in the focus piece, but this is not required.

Materials/Equipment:

- Computer / access to London Symphonia Education Episode
- Post Concert Activity Worksheet
- Scissors
- Glue
- Pencils / Colored Pencils (if desired)

- INDEX -

WORKSHEET ANSWER KEY



Double Bass
30.87 Hz



Violin
196.00 Hz



Clarinet
146.80 Hz



Trumpet
185.00 Hz



Flute
262.00 Hz



Trumpet



Flute



Clarinet



Violin



Double Bass

INSTRUMENTS FEATURED

Woodwind Family:

Flute
Oboe
Clarinet
Bassoon

Brass:

French Horn
Trumpet
*Trombone and Tuba not featured due to social distancing regulations

Percussion:

Timpani

String Family:

Violin
Viola
Cello
Bass

MUSIC PERFORMED

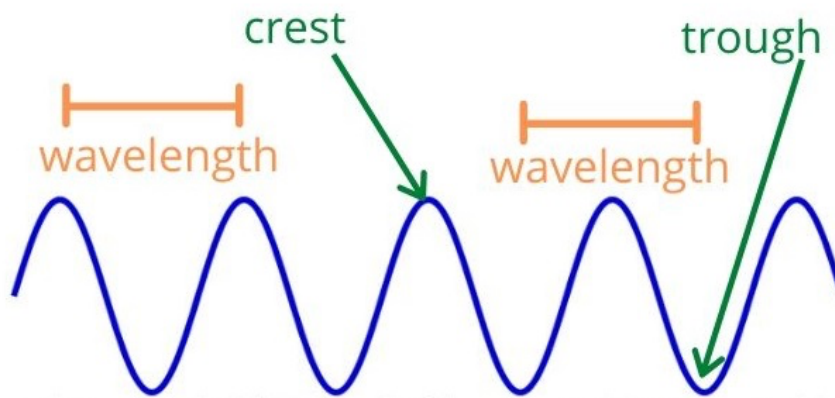
Ludwig van Beethoven – Symphony No. 5 (Mvt. I): Allegro con brio *focus piece*

Introduction to the Orchestra

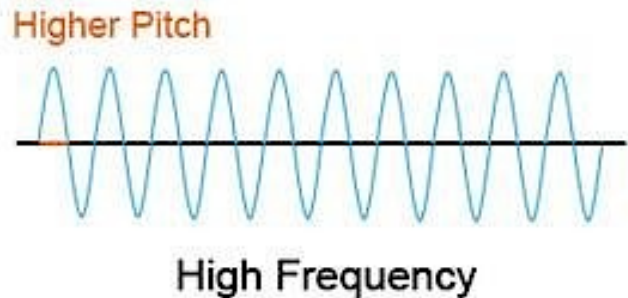
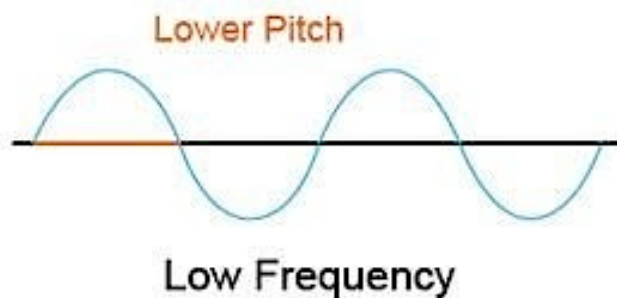
Episode: 1 Adding Up the Musicians - K-8

A. Ordering Instruments by Frequency

All instruments make sound through vibrations which travel through the air. We describe these soundwaves by how fast they repeat themselves. There are three essential parts to a soundwave. The crest, which is the top of the wave, the trough which is the bottom of the wave, and the wavelength, which is how long or short the wave is.



We represent the frequency at which these sound waves travel through Hertz or Hz for short. The number of Hertz describes how many waves there are per second. The higher number of Hertz the faster the sound waves, the lower number of Hertz, the slower the soundwaves.



Below each instrument is listed with the frequency of the lowest note it can play. Using that information, count the number of waves and match each instrument to the soundwave that best represents the frequency shown. Each soundwave is a representation of the sound taken at a 1 second interval. The higher the Hz the more crests there will be.



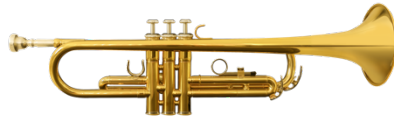
Double Bass
30.87 Hz



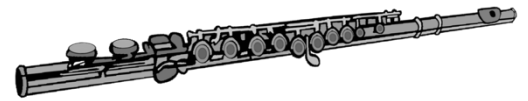
Violin
196.00 Hz



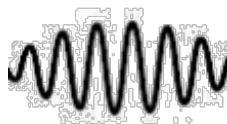
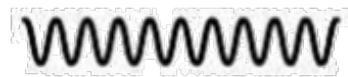
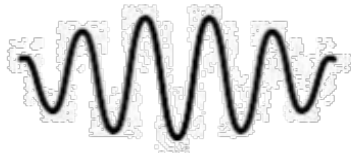
Clarinet
146.80 Hz



Trumpet
185.00 Hz



Flute
262.00 Hz



B. Creating an Orchestra

Using the instruments below, cut out or draw each instrument and arrange them on a blank sheet of paper to create your very own orchestra! Make sure to group the various families together (woodwind, brass, percussion, string). You can use the performance of Beethoven Symphony No. 5 by the London Symphonia for reference.



Violin



Violin



Violin



Violin



Violin



Violin



Viola



Viola



Viola



Cello



Bass



Flute



Oboe



Clarinet



Bassoon



Horn



Conductor



Trumpet



Timpani