

The logo features the title "The Sound of Music" in a large, blue, 3D-style font. The text is centered and surrounded by several sheets of musical notation, including staves with notes and clefs, arranged as if they are floating or flying around the title.

“Aside from silence, all that which expresses the inexpressible is music.” - Aldus Huxley

Now that we have seen the basics of sound, we are ready to experiment with some of its uses. Sound is put to use in a variety of ways for both man and animal. Various mammals use sound to guide themselves in the dark or underwater. Humans use similar devices to track vehicles far out of sight. Perhaps the most enjoyable way we make use of sound is Music. We will continue reviewing the physics behind music over the next couple of weeks. During this time you will be working on creating music of your own by building a musical instrument from scratch. Your instrument must have an 8-note scale (an octave), and should illustrate the principles that we have been learning about. You will need to become skilled at playing it so that you can perform for the class. See below for how this project will be graded, and when things will be due.

Written Plan:

Due: Thursday, March 19
See rubric for a description and grading criteria (7 points)

Final product:

Due: Thursday, April 2
See rubric for a description and grading criteria (28 points)

Presentation:

Due: Thursday, April 2
See rubric for a description and grading criteria (14 points)

Paper:

Due: Thursday, April 2
See rubric for a description and grading criteria (21 points)

Should explain:

- How the instrument makes “music”
- The physics that play a role in this instrument
- How the scale was determined
- History of the instrument, or instrument it is based on

Designing and Making An Instrument : Designing and Making An Instrument

CATEGORY	7 points - Above Standards	5 points- Meets Standards	3 points- Approaches Standard	1 point- Below Standard
Written Plan	Steps and materials were outlined in a fashion that could be followed by anyone without additional explanations and includes a diagram.	Steps and materials were outlined in a fashion that could be followed by anyone without additional explanations.	Steps and materials were outlined in a fashion but had 1-2 gaps that require explanation even after teacher feedback was given.	Plan was incomplete
Appearance	Instrument is decorated creatively and appropriately	Instrument is decorated attractively	Instrument is decorated, but messy looking.	Instrument is not decorated OR is very messy.
Quality of Construction	The instrument shows considerable attention to construction. It is sturdy, neat and will stand up to repeated playing over a period of time.	The instrument shows considerable attention to construction. It is reasonably sturdy and neat and will stand up to being played more than once.	The instrument is neatly constructed but is fragile and will probably not stand up to being played more than once.	Pieces are missing or falling off. Seems "slapped together" in a hurry.
Quality of Sound	Instrument offers a full octave of clearly distinguishable notes	Instrument offers 8 distinctive notes, but one or two pitches are "off"	Instrument offers 8 distinctive notes, but more than two pitches are "off"	Instrument does not offer 8 distinctive notes.
Volume of sound	Is audible over moderate noise from 5m	Is clearly audible at 3m with moderate noise	Is clearly audible at 3m in a quite room	Is not audible within 1m
Presentation (verbal)	Presenter speaks loudly and clearly. Instrument is visible to class and its use demonstrated. The instrument is named and the process for making it is described correctly	Instrument is shown to class and its use demonstrated. The instrument is named and the process for making it is described clearly. It was hard to hear the presenter.	Instrument is shown to class and its use demonstrated. The instrument is named and the presenter describes a few of the steps of making it.	Instrument is shown to class and is named. The student cannot describe the process used to make it OR cannot demonstrate it.
Presentation (Song)	Song is clearly played, obvious to the class, and a "radio" song.	Song is clearly played, obvious to most of the class	Song is played, but class cannot guess.	Song is not attempted
Paper	Paper is over 300words, no grammatical errors, and appropriately formatted. Typed.	Paper is over 200words, few grammatical errors, and appropriately formatted. Typed	Paper is over 100 words, many grammatical errors, or inappropriately formatted. Handwritten or typed	Paper is under 100 words, or has major errors, hand written.
Paper	Clear explanation of HOW the instrument makes music using appropriate physics vocabulary.	Explanation of HOW the instrument makes music using appropriate physics vocabulary.	Explanation of HOW the instrument makes music	No discussion of HOW the instrument makes music.
Mathematical explanation	Calculations for determining lengths are correct, and match up with instrument.	Calculations for determining lengths have minor errors or do not match up with instrument.	Major errors with calculations, with little correspondence to the instrument.	No calculations