

Grade 11 PHYSICS Make your own!
M.U.S.I.C. Project.
Musically Unique Student Instrument Challenge.



Purpose: To create a musical instrument by yourselves that is able to produce a 1 octave range, and play a tune of your choosing.

Criteria: It needs to be made with common materials, such as those that could be found in a hardware store. Specialty music materials are not allowed. The instrument needs to be homemade. Some exceptions may apply if you can gain clearance from the teacher.

I would encourage the production of wind or string instruments, over drums, & rattles, as they do not easily produce a wide range of frequencies. I would also discourage the production of electrical instruments unless you are very electronically able.

You will demonstrate how in-tune your instrument is, by comparing it to the sound produced by 4 different tuning forks.

Group: There should be 2 maybe three people in a group. If there are 3 then the device(s) produced need to require the involvement of all three people.

Sources: Your creations may originate from your imagination, web pages, or any other source available to you. On the web you could search for 'home made musical instruments' and end up at sites like <http://mudcat.org/kids/>

- Required Tasks:** On presentation day you will have 4 required tasks to do in 10 min:
- 1- show your instrument to the class and explain its construction.
 - highlighting how you came up with that idea
 - why certain materials were used
 - why certain materials have certain dimensionsyour explanations MUST have direct specific (detailed) references to the theory taught in class.
This will be the 'Critical Thinking' and 'Connections' aspect.
 - 2- Show how in tune your instrument is by comparing it to tuning forks or to a 'tuning device'.
 - 3- play a familiar tune on your instrument. The tune has to be at LEAST 20.0 seconds long. (you choose the tune)
 - 4- answer any questions from the class.

Evaluation: The evaluation will be a 60/40 teacher self evaluation.
Both the teacher and the student will use the rubric attached.
The student will also hand in a one page Thinking Journal of what their mind was doing through out the project. What worked well? What would you do (think) differently?

Contest: **Peoples Choice Award**
Each student will vote for their top 3 instruments. The instrument with the greatest number of votes wins, and gets +5% on their project to a max of 100%. The runner up will get +2%.

Date: June 15, 16,

Strategy Outline: research instrument options
select option that has the best balance between
interest & your abilities,
complexity & time constraints,
materials required & your resources
gather supplies
set construction times. Note things take longer than they first appear.
once constructed, perfect it/ tune it
learn to play a familiar tune.
map out presentation.

M.U.S.I.C. Project

11 Physics

Marking Rubric

NAME: _____'S

STUDENT PERCEPTION

Content 15 marks

made a musical instrument?[5]

played 8 notes?[8]

played a song 20s+ ?[2]

precision of construction

10, 9, 8 - very well made

lots & varied detail

7, 6, 5, - looks good

satisfactory detail

4 or less - little detail,

accuracy of tone and tune

10, 9, 8 - sounds melodious

totally in tune

7, 6, 5 - some notes not in tune

4 or less – out of tune, sounds unpleasant.

Critical Thinking of presentation

10, 9, 8 - very insightful

logical

7, 6, 5 - coherent

4 or less – some incoherence

Connections made with audience

10, 9, 8 - class into it

7, 6, 5 - some involved

4 or less - class disinterested

Clarity of each individual's presentation

5, 4 - well presented

memorable

3, 2 - mostly clear

1 or less - lacked clarity

Commitment of the entire presentation

5, 4 - Lots of work evident

3, 2 - did an average amount

1 - little effort

Coolness of the entire project

5, 4 - COOL

3, 2 - its alright

1 - lacking

TEACHER PERCEPTION

Content 15 marks

made a musical instrument?[5]

played 8 notes?[8]

played a song 20s+?[2]

precision of construction

10, 9, 8 - very well made

lots & varied detail

7, 6, 5, - looks good

satisfactory detail

4 or less - little detail,

accuracy of tone and tune

10, 9, 8 - sounds melodious

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5, 4 - COOL

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Thinking Journal

Habits of Mind

Thinking about the displayed while I ...
prepared for, participated in, & presented
in my M.U.S.I.C. PROJECT.

NAME: _____

Date: _____

While Preparing:
(researching)

What Worked Well?

Would Do Differently?

While Participating: What Worked Well?
(creating/constructing)

Would Do Differently?

SEE OTHER SIDE.

While Presenting:
(in front of everyone)

What Worked Well?

Would Do Differently?