

Objective: Your task is to design and create your very own musical instrument. The instrument can be from one of the three categories of instruments; percussion, wind, or string. It must be created from scratch, ie, no purchased instruments or kits. Referencing or modeling based on a known instrument is acceptable.

Task:

1. choose your instrument type (percussion, wind, string)
2. create a preliminary design on paper (this will be handed in with your instrument)
3. build and test your instrument at home
4. your instrument must be able to create **THREE** clearly distinct sounds (or more if you wish)
5. present your instrument to the class:
 - a. explain how your instrument works, frequency of each note (use a guitar tuner, ipad app, ear comparison), why the sound changes for each different note – *using proper physics language (refer to lengths of string, air columns, harmonics, wave speed, etc.)*
 - b. what is your instrument made of and how it contributes to the creation of the sound,
 - c. demonstrate your **THREE** different sounds and possible jingle (Mary had a little lamb, Smoke on the Water, etc.)
 - d. approximate presentation time – 1.5 minutes – you may do this **live** and in person, or you may create a **video** that covers the same material (only two minutes at most)

Rubric / Assessment Guide

Criteria	Level 1	Level 2	Level 3	Level 4
Design plans	Plans are incomplete or unclear	Plans are somewhat detailed and neat	Plans are detailed and neat	Plans are detailed, neat, have all measurements, “production ready”
Instrument Construction and Function	Instrument is complete but does not function	Instrument is somewhat complete and functional	Instrument is complete and functional	Instrument is robust, aesthetically pleasing, well thought out and very functional
Instrument Complexity	Little to no complexity (i.e. a turned over bucket)	Somewhat complex (i.e. a bucket with a drum head attached)	Complex (i.e. a bucket with an adjustable drum head for different sounds)	Very complex (i.e. multiple buckets, all with adjustable heads, controlled with a foot pedal)
Instrument playing ability	Two sound were created	Three different sounds were created	All three sounds were created clearly with known frequency values	More than three sounds were created – a recognizable “jingle” was demonstrated
Presentation Two Options: 1. Live and in person 2. Video (avi, quicktime format)	Explanations of how the instrument works and how it was created was unclear and lacked detail - presentation was +-1 min from 1.5 min. target	Explanations of how the instrument works and how it was created was somewhat detailed and concise - presentation was +- 30 sec from 1.5 min. target	Explanations of how the instrument works and how it was created was detailed and concise - presentation was +-15 seconds close to 1.5 min. target	Explanations of how the instrument works and how it was created was very detailed and concise, included multimedia support - presentation was +-5 seconds of 1.5min. target