

Category	Excellent – 11 10	Good – 9 8	Could do better - 7 6 5 ...
Instrument	<p>Meets all “good” requirements plus 2 or more of the following:</p> <ul style="list-style-type: none"> • Amazing tuning (within .5%) • Super unique design (to be negotiated with students) • Stellar craftsmanship (to be negotiated with students) 	<ul style="list-style-type: none"> • 8 labeled notes - C major scale recommended, minor or chromatic (12 note) OK • name on instrument • can be moved and played without affecting playability • craftsmanship (to be negotiated with students) • Accurate absolute pitch (within 5%) • Accurate relative pitch (scale by ear, or within 1% note to note) • Decent note clarity (to be defined) • Clearly audible by class (to be defined) 	<p>Missing 3 or more “Good” requirements Examples: (class discussion)</p> <p>Guitar:</p> <ul style="list-style-type: none"> • Fret placement incorrect/ miscalculated • action too high (tuning) • Neck not securely attached (breaks or bends) <p>Flute/pan pipe:</p> <ul style="list-style-type: none"> • End effect calcs missing or wrong • hole placement not accurate/ precise • Doesn’t make sound!
Presentation	<p>Meets all “good” requirements plus 2 or more of the following:</p> <ul style="list-style-type: none"> • Awesome musicality of performance (to be negotiated with students – possibly counterpoint, harmony, or adding vocals) • Clever choice of song (2 b negotiated) • Non-trivial song choice (i.e., not “hot cross buns”) 	<p>For each instrument Correct explanation of: source/medium of vibration</p> <ul style="list-style-type: none"> • how vibration produces sound waves • location of nodes and antinodes • how instrument is manipulated to produce different notes (e.g. how do you change frequency, relate it to 	<p>Missing 3 or more “good” requirements Examples:</p>

Report

or “mary had a little lamb”) (2 b negotiated)

Meets all “good” requirements, plus two or more of the following:

- Song annotation?
- Detailed construction sketches referenced in document?
- Further detail on reflection?

changing the wavelength – probably related to changing location of nodes/antinodes!)

During performance

- each instrument plays at least five different notes (song choice is important!)
- all musicians play as a group (to be negotiated – such as timing, etc indicating group practice)

For each instrument:

Correct explanation of

- source/medium of vibration
- how vibration produces sound waves
- location of nodes and antinodes
- how instrument is manipulated to produce different notes

Brief description of:

- Construction materials and process
- Issues encountered and how they were addressed

Reflection includes:

- Two specific ideas for each instrument on how to improve it if you did this project again

- Two specific ideas you learned during the course of the project that were most helpful/ important to the success of your group's project

For each instrument, include:

- One photo of instrument before or during construction
- one photo of finished product

Calculations!

- Calculations are clearly shown in table form
- Calculations are clearly explained (which equation was used)
- Sketch correctly shows what the calculations are actually calculating! (length of tube, position of fret, etc)

Class time use/
participation

Other considerations/comments:

Student definitions of certain rubric aspects: each class makes suggestions, combine all classes that night and submit to class for approval.

Fold up rubric to help students focus on one aspect at a time...

Lesson study: interaction with rubric to get students more engaged with requirements etc.