Physics 100 (Stapleton) Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

String Instrument Project

**Project Grading**

Projects will be graded according to the rubric below. The requirements for each cutoff (70%, 85%, and 95%) represent grades for projects which do a *good* job of meeting all of those stated requirements. A project which meets the 70% requirements with absolute perfection may receive a grade higher than 70%, while a project meeting those same requirements, but with many mistakes, may receive a grade lower than 70%.

**How to Submit Projects**

Work on your projects in Audacity. As you complete each portion of a project to your satisfaction, save that track as a .wmv or a .mp3 audio file. Save the audio file on your drive. If you are working with a partner, it would be a good idea to put all of these files in a Google folder and to share that folder with your partner. Once you have completed all of your recordings, import all of your recordings into audacity and create one master recording. Add narration to this recording. Announce/describing each of the clips.

**Possible Ways to Earn Extra points:**

* + Add a harmony track to one of your songs
    - Tight harmony – record two identical tracks separated by a major 3rd (4 half-steps)
    - Other – you figure out what sounds good, look for some sheet music, or figure it out by listening to songs played with harmony. You can also get help from a musician.
  + Find out what an arpeggio is and record one. Describe the arpeggio that you will play.
  + Play a song whose notes have not been provided in this class. This must be something more complex than *Hot Cross Buns.* Identify the song and the key in which you play it.
  + Compose and record your own song. It may be simple, and it may be played in either a minor or major key.
    - It must actually sound pleasing to the ear
    - Identify the name of the song (you make it up)
    - Identify the key in which the song is played

**For 70%, create a recording featuring all of the following…**

1. Project title (with group member names)
2. Any major scale (one octave)
   1. Name the tonic (starting note).
   2. Tell the frequency of the tonic, in Hz
3. An interval representing a Doppler shift for an object traveling directly at the observer and having a speed between 100 and 300mph.
   1. Identify the interval in half steps.
   2. Identify the starting and ending frequency.
   3. Tell the speed of the object.
4. The largest interval that you can play on *your* instrument.
   1. Identify the interval in half steps.
   2. Identify the starting and ending frequency.
   3. Tell how fast an object would be moving if it its Doppler shift had that interval.
5. Major Key song (most of the song)
   1. Name the song
   2. Name the key (usually the last note of the song – the tonic of a scale played in this key)
   3. Give the frequency of the final note.

**For 85%, create a recording featuring all of the following…**

1. Project title (with group member names)
2. Any major scale (one octave)
   1. Name the tonic (starting note).
   2. Tell the frequency of the tonic, in Hz
3. Any minor scale (one octave)
   1. Name the tonic (starting note).
   2. Tell the frequency of the tonic, in Hz
4. An interval representing a Doppler shift for an object traveling directly at the observer and having a speed between 100 and 300mph.
   1. Identify the interval in half steps.
   2. Identify the starting and ending frequency.
   3. Tell the speed of the object.
5. The largest interval that you can play on *your* instrument.
   1. Identify the interval in half steps.
   2. Identify the starting and ending frequency.
   3. Tell how fast an object would be moving if it its Doppler shift had that interval.
6. Major Key song (most of the song)
   1. Name the song
   2. Name the key (usually the last note of the song – the tonic of a scale played in this key)
   3. Give the frequency of the final note.
7. Minor Key song (most of the song)
   1. Name the song
   2. Name the key (usually the last note of the song – the tonic of a scale played in this key)
   3. Give the frequency of the final note.

**For 95%, create a recording featuring all of the following…**

1. Project title (with group member names)
2. An A major scale (one octave)
   1. Name the *tonic* (this will be A).
   2. Tell the frequency of the tonic, in Hz
3. An A minor scale (one octave)
   1. Name the *tonic* (this will be A).
   2. Tell the frequency of the tonic, in Hz
4. Major scale other than an A scale (one octave)
   1. Name the *tonic* (starting note).
   2. Tell the frequency of the tonic, in Hz
5. Major scale other than an A scale (one octave)
   1. Name the *tonic* (starting note).
   2. Tell the frequency of the tonic, in Hz
6. Any chromatic scale
   1. Name the tonic (starting note).
   2. Tell the frequency of the tonic, in Hz
7. An interval representing a Doppler shift for an object traveling directly at the observer and having a speed between 100 and 300mph.
   1. Identify the interval in half steps.
   2. Identify the starting and ending frequency.
   3. Tell the speed of the object.
8. The largest interval that you can play on *your* instrument.
   1. Identify the interval in half steps.
   2. Identify the starting and ending frequency.
   3. Tell how fast an object would be moving if it its Doppler shift had that interval.
9. Major Key song (most of the song)
   1. Name the song
   2. Name the key (usually the last note of the song – the tonic of a scale played in this key)
   3. Give the frequency of the final note.
10. Minor Key song (most of the song)
    1. Name the song
    2. Name the key (usually the last note of the song – the tonic of a scale played in this key)
    3. Give the frequency of the final note.