**Name: _____ Date: _____ Block: _____**

# Create Your Own Musical Instrument Project

Humans have been making and playing musical instruments for thousands of years. New instruments are invented, and existing instruments are modified to produce different sounds. Probably many cultures have used a hollow log as a simple drum. Many instruments are based on vibrating strings. One category of instrument, horns, depends on the vibrating lips of the player to create sound. Other instruments use vibrating reeds. The many flutelike instruments create a sound by causing a column of air to vibrate. In this project, you will design, build, and test your own musical instrument. At the end of the project, you will demonstrate your project in a class demonstration.

## Project Rules

- You must be able to demonstrate how to change the loudness and pitch of the sound of your instrument
- Your instrument must be made of safe materials. Cover any sharp edges with tape.
- Loud sounds can damage hearing. Do not play your instrument too near students' ears.
- You may not use electricity in your instrument in any way.
- You must demonstrate and play a simple tune (or rhythm) on your instrument in a class presentation.

## Suggested Materials

You may use almost anything to build your musical instrument, such as different sizes of rubber bands, cardboard boxes, different lengths of cardboard tubes or plastic pipes, string, wooden craft stick or tongue depressors, drinking straws, and bottles. Practically anything can be incorporated into a musical instrument.

## Project Hints

- Think about whether you will want to play your instrument by blowing into it, strumming it, striking it, or by some other method.
- Be creative!
- Don't limit yourself to the materials suggested by your teacher. Don't just copy an existing instrument. Part of your teacher's assessment of your project will be based on originality.
- As you decide on your design of your instrument, remember that you will need to play something on it. Your instrument must not only make sounds, but it must make different sounds.

## Planning Your Musical Instrument

Having trouble getting started? The following tasks will HELP you start the design phase of this project. Use another sheet of paper if you need more room.

1. Brainstorm all the ways you can think of that musical instruments make and modify sound. You might want to begin with instruments that are familiar to you, either because you or someone you know plays them, or because music you like is played on them. Then think of instruments you may not know as much about. As you brainstorm, you may find it helpful to classify instruments into categories, such as instruments with a mouthpiece and instruments in which strings make the sound. Finally, try to think of ways to make and modify sound that may not be used in a conventional instrument.

2. Draw a diagram of your proposed instrument. Be sure to label its parts, and the materials you will use.

3. How will you play your instrument? Exactly how will your instrument make sounds? What will vibrate to create sound waves? How will your instrument make sounds of different pitch and volume?

4. Make detailed notes on the construction of your instrument. Will you need to use other materials for certain parts of your instrument? How will the parts fit together? Will you need glue or special tools to make your instrument?

## Musical Instrument Project Essay

Students will write a one-page essay (handwritten or typed, double-space, 12-font) detailing their musical instrument. The essay should answer the following questions and incorporate the following vocabulary terms: *sound, wave, energy, vibration, amplitude, volume, frequency, pitch,* and *medium*.

- **Paragraph 1 – Introduction**
  - What instrument did you make? Is it an original design or similar to instruments that already exist? To what group of instruments does your instrument belong (wind, string, or percussion)?
  - What materials did you use to create your project?
  - Why did you choose these materials? What makes them good materials to transfer sound waves?

- **Paragraph 2 – Sound**
  - How does your instrument create sound waves?
  - How can you increase the amplitude of the sound wave produced from your instrument?
  - How can you change the pitch of the sound wave from your instrument?
  - What medium are the sound waves traveling through?

- **Paragraph 3 – Conclusion**
  - How is understanding sound waves beneficial to your education?
  - Why is learning about how the ear works important?
  - How can/will you apply your knowledge of sound in your daily life?

## Scoring Rubric

| Points | Description |
|---|---|
| 5 pts | Name is on the project (either written or tied on with a tag). |
| 10 pts | The instrument is neatly done. Work, effort, and creativity are apparent. |
| 35 pts | Student created an original, musical instrument with no electricity involved. |
| 10 pts | Student played a tune or rhythm on the instrument. |
| 10 pts | Student is able to play the instrument at different pitches and volumes. |
| 30 pts | One page essay is complete and correctly formatted. |