

Games, Nature, & Experiments

Homemade Instruments

Estimated Time: 10 – 30 minutes (per instrument)

Age range: All grades (with adult supervision/assistance)

What you need: scratch paper, writing utensil, access to this document (or a printed copy)

- **Ukulele:** tissue or cereal box, scissors, rubber bands, tape or glue, toilet paper roll, construction paper, materials for decorating
- **Rain Stick:** 4 - 8 toilet paper rolls, tape, construction paper, small objects for filling (dried beans, popcorn kernels, rice, etc.), materials for decorating
- **Drums:** tin can (rinsed out & dried), rubber bands, plastic bag or balloon, scissors, drumsticks or chopsticks (or anything else you'd like to use to hit your drum), materials for decorating
- **Shaker:** toilet paper roll, tape, small objects for filling (dried beans, popcorn kernels, rice, etc.), materials for decorating
- **Castanets:** small piece of cardboard, bottle caps (plastic or metal), tape or glue, materials for decorating

New Words or Adult Tips

Feel free to make as many instruments as you'd like!

Before you start, be sure to check the materials required to make the instrument(s) you have chosen.

Frets are parts of string instruments. They are used for finger positioning, which produces different sounds.

To **modify** something means to make small or partial changes to that object.

The **neck** of a string instrument is used to support and hold the strings.

Quantity is a measurement of the amount of an object.

The hole found in the body of a string instrument is called a **sound hole**.

Background Information:

Are there any instruments that you think are pretty cool, but have never been able to try out? With these homemade instruments, you'll get the chance to build them from scratch and decorate each one to make it your own! Although there's no easy way to make them sound exactly the same as traditional instruments, you can still experiment with unique sounds by making small changes.

Try to picture a drum set. Consider the following:

List all the ways you can think of to make different noises on a drum.



Name: _____ #: _____

Use the space below to draw pictures showing each method you would use to make these sounds!

A large, empty rounded rectangular box with a thin black border, intended for drawing pictures showing methods to make sounds.

You might have thought about hitting different locations on the drum, or hitting the harder or softer to produce different sounds. Maybe you even changed your drumstick to one that is made of a different material!

Drums are just one example of a homemade instrument you can **modify** to fit the sounds you are looking for.

Follow the steps for each of the instruments below, and soon you'll have a full band to work with!

Homemade Instruments

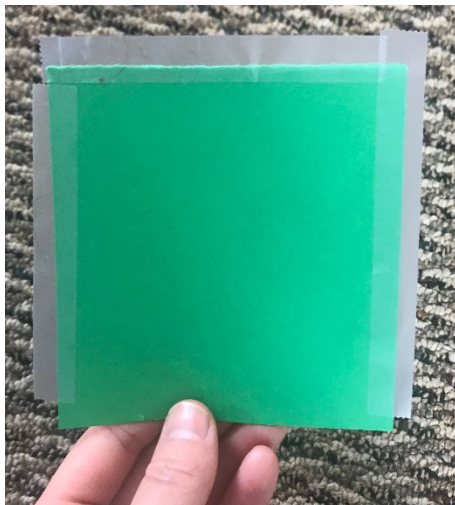
Ukulele Instructions:

1. Remove the plastic film from the tissue box by making a hole near the edge with scissors, then gently pulling the plastic apart from cardboard.



*If you'd like your tissue box to have a **sound hole** that is smaller (like the ones found on ukuleles), complete step 2. Otherwise, skip to step 3.*

2. (Optional) Cut a small square of paper that is about half the length of the long side of the tissue box. It should be slightly thinner than the short side of the tissue box. Place tape or glue on three sides of the paper, and carefully insert the paper inside the box, pressing up from the inside to seal the paper to the cardboard.





- Decorate the body of your ukulele! If you are using paint, you may need multiple coats in order to fully cover the tissue box design. Leave one of the small sides blank. This side will be used to attach the toilet paper roll (as shown below).



- Glue or tape on the toilet paper roll to the side of the box, as shown above, to create the **neck** of the ukulele. Decorate the neck if you'd like!

5. Stretch two of your rubber bands over the body of the ukulele (tissue box) until they touch each side of the neck (toilet paper roll) of the ukulele. Stretch a third rubber band over the top of the neck. You can wrap a few rubber bands around the neck to secure the strings down and form **frets** for the instrument. If you decide to add frets, be sure to wrap these additional rubber bands so that they are below each of the “strings”! They should not be placed over any of the other rubber bands.



6. You have your homemade ukulele! Test out the different strings and try moving them around to create different sounds.



Rain Stick Instructions:

1. Start by sticking three pieces of tape (evenly spaced) to the inside edge of one toilet paper roll, with about half of each piece sticking out from the edge. The sticky side should be facing out.



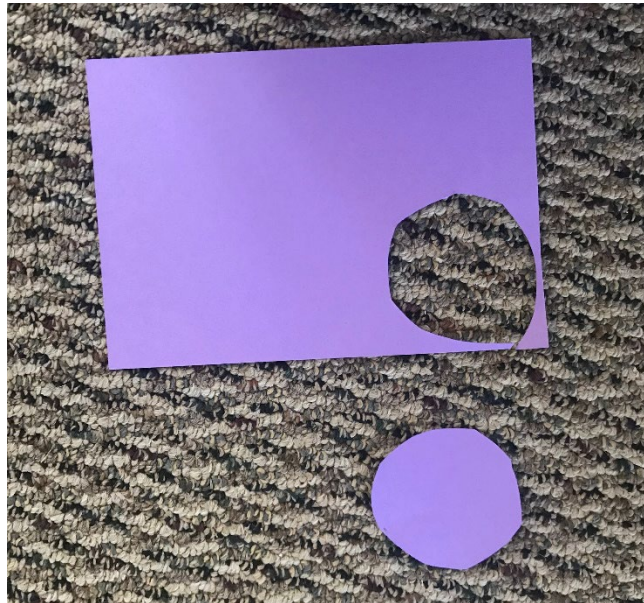
2. Bend the tape inward, and carefully connect another toilet paper roll. The tape should be on the inside of the ends of each roll to hold them together. If the tape isn't sticking, you can use a paintbrush, pencil, or similar object to reach down the tube, pressing to seal the tape onto the cardboard.



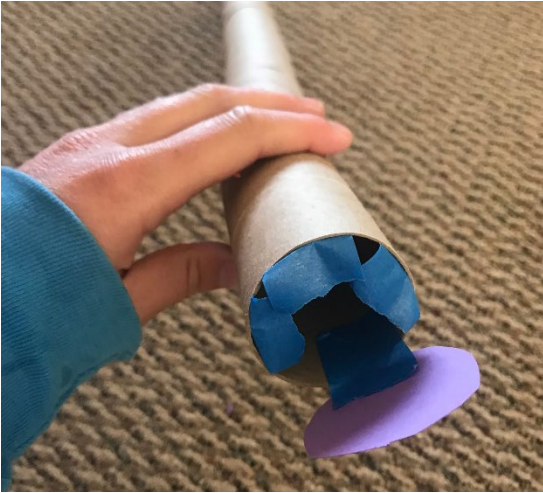
- Repeat step 2 for each of your toilet paper rolls until they are all connected. If there are any loose connections, you can use tape on the outside of your rolls to secure them. You should now have one long tube of toilet paper rolls.



- Using scratch paper, cut two circles that are just slightly larger than the openings at the ends of the tube.



5. Use the same taping method that you used in step 1, placing tape on the inside of one opening with half of each piece sticking out of the ends. Carefully attach the paper circle to the tape, pressing down firmly until the paper is securely fixed to the end of the tube. Once secure, cut the excess paper off the edges.



6. Add in your dry ingredients to the open end of your rain stick. You can experiment with different sounds by adding more or less to the inside, then tilting the rain stick back and forth to hear how the **quantity** affects the sound. Hold your palm over the open end to prevent spills. Once you determine the amount that you want, secure the seal on the open end using the method described in step 5.



7. Now that your rain stick is filled and sealed, it's time to decorate! You can glue on construction paper, color with markers or paint, and/or add flair with stickers and beads.



Drum Instructions:

1. Cover the opening of your can with the plastic bag, balloon, or other plastic material you are using. Make sure that the plastic is pulled tightly, with no wrinkles. Be careful, as the edges of the can may be sharp!



2. Wrap the rubber band just below the top of the can, around the plastic, to keep it in place.



3. Cut off the excess plastic below the rubber band so that more of the can is visible.



4. Remove the label from around the can. If this is difficult, you can also choose to decorate over the label!



5. Decorate your drum using paints, or anything else that you want to use to make it your own!



Shaker Instructions:

1. Take one toilet paper roll and measure the width of its opening on the tape roll (scotch tape/blue tape/etc.). You will make a circle of tape that is slightly larger than the toilet paper roll opening. Make sure to tape the sticky sides together so the tape circle is smooth on both sides.



2. Cut smaller strips of tape out, and use them to attach the tape disc to one end of the toilet paper roll.



3. Fill your toilet paper roll with dried goods or similarly small objects! Leave some space for them to move. Cover the top with another tape disc using the method in step 2, so that both ends of the shaker are sealed.



4. Decorate your new shaker!

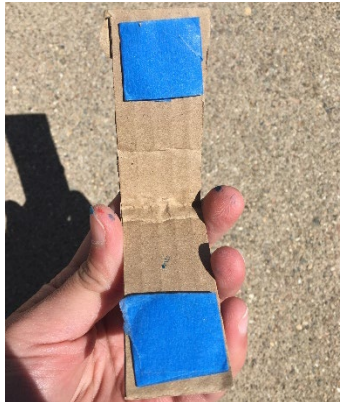


Castanet Instructions:

1. Begin with cutting the cardboard into a slim strip. Fold the strip in half.



2. Add tape or glue on the inside of both ends of the piece of cardboard.



3. Decorate the outside of the cardboard with whatever you would like!



4. Add the bottle caps to the tape/glue, with the top of the cap facing out.



5. Open and close the cardboard to make noise!



Now it's time to reflect on our experiences!



Name: _____ #: _____

Homemade Instruments Reflection

Now that you have each of your homemade instruments, try to think of at least one way to change each of them so that they make a different sound. If you need help, see the hints section at the end of this activity!

Once you have found at least one way to change each instrument, consider the following questions:

List each change you've made to your instruments. Explain how their sounds changed.

Which of the instruments you made is your favorite? Why?

How many different ways can you think of changing this particular instrument? Try them out and explain your results!

Which instrument did you find the easiest to modify? Why?

Which instrument was the hardest to modify? Why?

Can you think of any other instruments you could make from materials around the house? List them!

Hints for Instrument Changes:

Ukulele: Think about the location of each piece of the instrument

Rain Stick: Consider the quantity and/or size of the filling

Drums: Do things change if you move the plastic on the drum around a bit?

Shaker: How full is the shaker?

Castanets: What material are the bottle caps made of? Could you use something else in place of the bottle caps?