

SYMPHONY HACK LAB



String-o-lin

Time: 15 Minutes
Difficulty: Advance

Make a string instrument out of cardboard! The NAC Orchestra's includes 39 string instruments, each one adding a new sound to the symphony.

What You Need:

- Thick pieces of cardboard, paper letter size
- 3 elastics
- 12 fasteners
- Utility blade
- Glue gun
- Pencil
- Poking instrument, such as a screwdriver or a pen



Safety first! Ask an adult to help you use these tools.

Make It:

1. Print the template below.
2. Trace the template on 3 pieces of cardboard.
3. Cut the centre circle out carefully using the utility blade
4. Glue the 3 templates on top of each other with the glue gun. Be careful to align them well. This will become your frame.
5. Take your 3 rectangles and glue them on top of each other
6. Glue your rectangle on the frame
7. Poke 6 holes at the top of your instrument frame, following the template.
8. Poke the remaining 6 holes that follow the slanted side of the frame
9. Place a fastener in each hole, secure them at the back of the frame
10. Take an elastic and roll it around 2 top and 2 corresponding lower fasteners at the same time.

Test it:

That is it, your string instrument is ready to be played! Make sure the elastic is tight by wrapping it around the fastener's head a few times if required.

Explain It:

The tighter and shorter the elastic, the higher the sound it will make. This is because it vibrates at a higher frequency, sending higher-pitched notes out in the form of sound waves.

See It In Use:

All stringed instruments like the violin, guitar and cello use the exact same concept to make sound – take a look at the differences in string length and tightness! Which length create the higher pitch note?

Hack this template:

Modify the instructions and add personal touches to your instrument. Add strings, change the frame shape and size, and embellish your instrument. Can you think of other materials that you could use instead of those suggested? Don't be discouraged if your creation doesn't come up as you imagined on your first try. With each construction, you will discover different ways to make music.



In partnership with
En partenariat avec le



NATIONAL
ARTS CENTRE
CENTRE NATIONAL
DES ARTS

Canada is our stage.
Le Canada en scène.

