

iSTEMi Honors 2B Independent Project:

# Violin

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# Hornbostel-Sachs Classification

1. Idiophones: Produce sound by vibrating themselves



2. Membranophones: Produce sound by vibrating a membrane

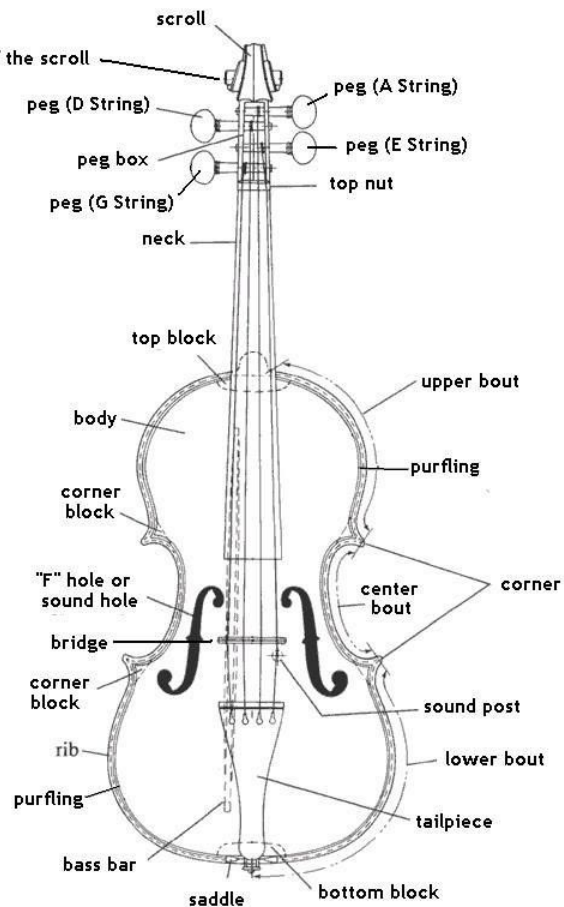
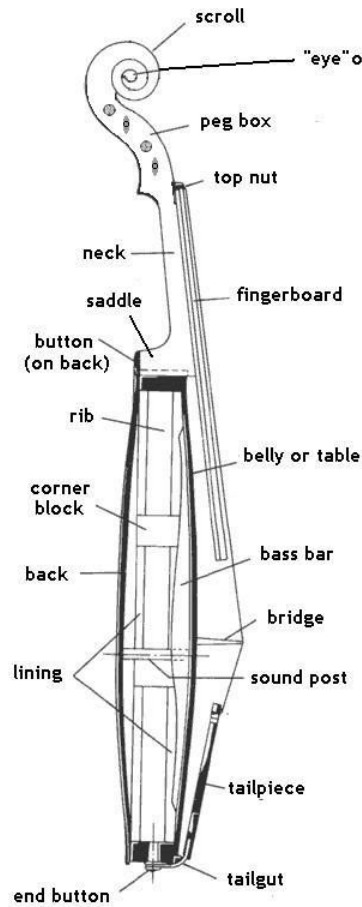


3. Chordophones: Produce sound by vibrating strings



4. Aerophones: Produce sound by vibrating columns of air





Tip

Stick

Hair

Frog

Tension  
screw





# Producing Sound

res•o•nance

/'rezənəns/

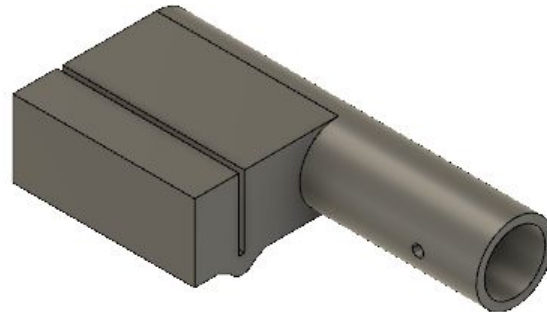
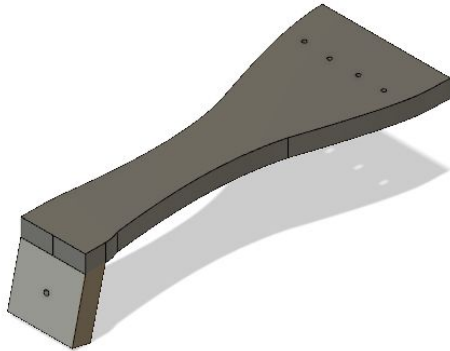
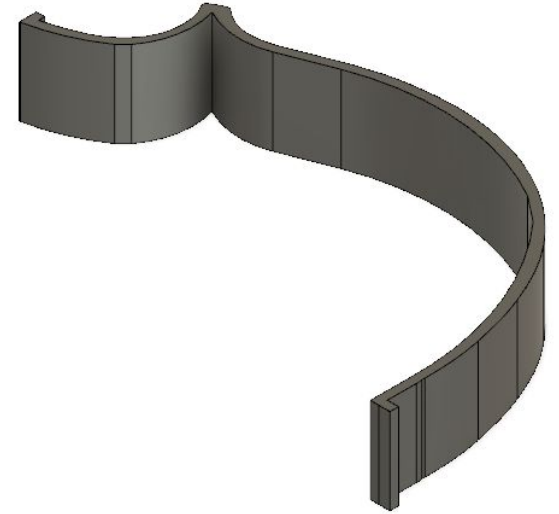
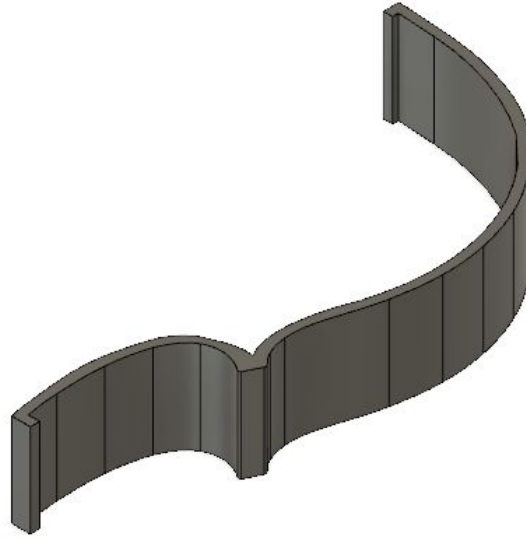
*noun*

the reinforcement or prolongation of sound by reflection from a surface or by the synchronous vibration of a neighboring object.



# Construction

- 3D Printer
- Resin Printer
- Laser Cutter
- CNC



# Differences

- Materials
- Curvature (Body, Bridge, Fingerboard)
- Extra wires to counteract string tension
- Tightening bow hair





# Improvements for Future Iterations

- Higher-quality materials
- Curvature (Body, Bridge, Fingerboard)
- Fastening the Pegs/Tuning
- Thicker Ribs
- Better Glue (Epoxy?)
- Screws (Stop breaking the resin!)
- Comfort and Aesthetics