

# Orchestral Explorations with Max and Zara

*Learning objective: To identify and categorize musical instruments into the four main families: strings, woodwind, brass, and percussion.*

Use these flashcards to test your knowledge of musical instrument families. Max the monkey has provided the technical facts, while Zara the zebra has described the unique patterns and shapes of each instrument.

**Which instrument family includes instruments that are played by plucking or bowing strings to create vibrations?**

Strings

**What is the defining characteristic of a brass instrument?**

Sound is produced by buzzing lips into a metal mouthpiece, typically made of brass.

**Max asks: If you hit, shake, or scrape an instrument to make a sound, which family does it belong to?**

Percussion

**Zara notes: Woodwind instruments were traditionally made of wood. How do modern woodwinds produce sound?**

By blowing air across an edge or through a reed, which causes the air inside the tube to vibrate.

**Is a flute a woodwind or a brass instrument?**

Woodwind (it is often made of metal, but is classified as woodwind due to the method of sound production).

**Compare and contrast the cello and the violin.**

Both are string instruments played with a bow, but they differ in size, pitch range, and how they are held.

**Explain why a drum is classified as percussion.**

Because it requires a physical strike (impact) to cause the drumhead to vibrate and produce sound.

**Justify your answer: Why is the piano considered a percussion instrument by some and a string instrument by others?**

It is technically a percussion instrument because hammers strike strings, but it is also a string instrument because the sound is created by vibrating strings.

**What might happen to the pitch of a string instrument if the string is made thicker or longer?**

The pitch would become lower because the string vibrates at a slower frequency.

**Zara asks: If you were designing a new instrument, which family would you choose to combine, and why?**

Open-ended creative response focusing on understanding instrument mechanics.

**Classify the following: Trumpet, Clarinet, Violin, Snare Drum.**

Trumpet: Brass, Clarinet: Woodwind, Violin: Strings, Snare Drum: Percussion.

**Define 'resonance' in the context of musical instruments.**

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