

Generalizing how musical instruments work

Name: _____

1. What were the three characteristics that the straw instrument needed to make sound, produce a variety of notes and be loud?
2. What were the three characteristics that the cup instrument needed to make sound, produce a variety of notes and be loud?
3. Can the important features be generalized for your instruments and other musical instruments like the guitar for example?

Stop – class discussion

4. Describe how you view resonance. What is special about how waves interfere when they resonate?

5. How is it possible for one pasta to wiggle a lot while the other two that were being held don't wiggle much?

6. Show when the "push" has to happen for a pasta stick to resonate.

☆ **Stop – class discussion**

7. Where is resonance happening with each of the instruments we worked with this week?
 - a. Straw instrument

 - b. Tuning fork

 - c. cup instrument

 - d. your voice

 - e. acoustic guitar

 - f. electric guitar

8. Two students are discussing the body of an acoustic guitar. Which, if either, student do you agree with and why?

Kaiya: I think the body of an acoustic guitar is a resonance chamber and is what makes the guitar loud.

Jasmine: I don't think it is a resonance chamber because a resonance chamber only supports a certain tone like a flute or the water bottles. When you change its length it likes a new tone. Acoustic guitars can play a really large range of notes so I don't think the body can be a resonance chamber.

☆ **Stop – class discussion**

9. What makes each of these instruments loud? Resonance or Sympathetic Vibration?

Where and why do you think this?

a. Straw instrument

b. Tuning fork

c. cup instrument

d. your voice

e. acoustic guitar

f. electric guitar

10. Based on what you've seen today and this week, how do you think a pipe organ in a church works? Why does it have all the different pipes?

