THE ADVENTURE:
How can you create sounds that have different pitches and different strengths? Make your own instrument and use it to create your own orchestra!

PLAN:
• Do you want to do this adventure inside, outside or at camp?
• What do you know about how sound is made?
• Where will you get the containers to make your instruments?
• For some of the activities, you will be in small groups. How will you form your group?

DO:
Activity #1: Dancing water:
• Cover the subwoofer with plastic and pour water into the plastic.
• Turn the subwoofer on and watch the pattern on the water.
• What happens when you change the volume? The frequency?

Activity #2: Different vibrations, different sounds:
• Try to make different sounds with the instruments you have available. What is vibrating to make the sound in this instrument?
• Think about other sounds you hear around you during the day. What is vibrating to create those sounds?

Activity #3: Water Orchestra:
• Use a spoon, pen, marker or other stick-like object to tap the glasses when they are empty. Add some water to the glasses, and tap them again. What do you notice? How is the sound different?
• What happens if you change the amount of water in the glass?
• Explore different amounts of water and different sounds. Can you play a song on your water instrument?

Activity #4: Rubber band guitar:
• Use rubber bands of different sizes to create a guitar out of a box.
• What do you notice about the sound of each rubber band?
• Create a guitar that has five (or more) different pitches.
ONLINE RESOURCES:
• Fun with water and a speaker
• Dancing Oobleck: Cornstarch and Water
• Sound and Vibration
• Glass bottle music
• Rubber band instrument

REVIEW:
• What do you know now that you did not know before?
• How did you change the sounds made by the glasses? How did you change the sounds made by the rubber bands?
• How else do you think you can build new musical instruments?
• What elements of STEM were in this adventure? Science? Technology? Engineering? Mathematics?
• What did you like about this adventure? What did you not like about it? How would you do this adventure differently?

MATERIALS:
• Subwoofer or large speaker
• Plastic wrap
• Water
• Musical instruments (Brass, string, and percussion instruments if possible)
• 5 glass bottles or glasses for every group of 4–5 Beavers
• Rubber bands of different thicknesses
• Plastic containers, shoeboxes or other cardboard boxes; one for each Beaver
• Sticks to play the glasses (spoons, pens, pencils, etc.)

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