

## Mermaid Music

Mermaids are famous for singing, but do their songs sound different underwater than on land? Do this experiment to discovery for yourself!

### Supplies:

- 2 Chopsticks
- 2 Metal forks
- 2 Rocks (large enough to clink together)
- Large bowl
- Water
- Tray or similar solid board (we use plastic trays!)
- Plastic water bottle cut in half (this acts as a hydrophone)

### Instructions:

1. Start by observing what objects sound like in our human environment, surrounded by air. Clink each pair of objects together in the air and listen to the sound they make.
2. You made a hydrophone out of a recycled plastic water bottle. This tool will allow you to hear what's happening underwater! Place the narrowest part of the water bottle up to your ear and hold the cut end of the water bottle right over the surface of the water.
3. Have a partner, it could be a sibling or parent, clink the objects together under the water. What do you hear?
4. Why do you think things sound different underwater? It all has to do with sound waves! Sound is what we hear when sound waves bounce off objects. Molecules are closer together in liquid than in a gas (like our air!), so there is greater opportunity for waves to bounce off molecules underwater. What do you think will happen when sound waves travel through a solid?
5. Place a tray (face down) up to your ear. Have a partner very lightly tap each one of the objects against the tray. How does this differ from what you heard in the water? What about in the air? Hypothesize why you think that is.

