

# Dancing Rice

## Materials you'll need

- Ziploc® brand sandwich bag
- wireless speaker
- bowl or vase, large enough to fit speaker
- plastic wrap
- device (phone or laptop) connected wirelessly to fit the speaker
- Rice (or Candy Sprinkles)



Turn on the speaker and place it in the bowl. (Hint: If there is room, set the speaker on it's box.)

Stretch the plastic wrap across the top of the bowl. Make it as tight as you can, with as few wrinkles in the wrap as possible.



Pour some rice (or sprinkles) into a Ziploc sandwich bag. Then seal the bag, leaving a pocket of air, so the sprinkles have room to dance!



Place the bag on top of the plastic wrap on the bowl.



Using your device, find different songs and turn up the volume to watch the sprinkles dance. For best results, download a tone generator and see what happens when you play.



#### Background Information:

Any vibrating thing (like a speaker) will make a sound. As the speaker vibrates and creates sound, it pushes the air around it, setting up a vibration in the air—that's a sound wave! In this experiment, the vibrations move through the plastic wrap, pushing and shoving the sprinkles around. As the tones change, the vibrations change, and the sprinkles move as if they are dancing. You'll see the sprinkles move away from where the vibrations are the strongest. To observe what happens to the sprinkles when you play a single sustained note, link your device to a tone generator. A pure tone will create a consistent, unchanging vibration in the plastic. Instead of dancing around, the sprinkles should collect in places where the plastic isn't vibrating, making patterns that depend on the frequency of the pure tone.