



Concept:

Astrophysicists study the acoustic (sound) waves of stars as a means of determining that star's internal composition (density) and structure. The field of *helioseismology*, which studies the propagation of pressure waves near the surface of our sun, is focused on the characteristic sound waves in this convection zone. The demonstration shows the analogous behavior of bowls with comparable size but different composition; each bowl rings out at a distinct frequency when set into oscillation.

See <http://en.wikipedia.org/wiki/Helioseismology>.

Procedure:

1. Notice that the bowls are similarly sized and shaped.
2. Hold a bowl from its base and strike its side to set it ringing.
3. Ask the class to predict what, if any, differences they'll notice when you ring the other two bowls.
4. Repeat step 2 for each bowl, noticing that each bowl rings at a different frequency.

Equipment:

1. Steel Bowl (240 Hz)
2. Ceramic Bowl (498 Hz)
3. Pyrex Bowl (532 Hz)
4. Metal Striker