

Project FOCUS  
Best Lessons  
FIRST GRADE

**Title of Lesson: Sound Vibrations: Eardrum Model**

**Theme: Physical Science**

**Unit Number: 5      Unit Title: Sound**

**Performance Standard(s) Covered (enter code):**

**S1P1a**

**S1P1c**

**S1P1d**

**Enduring Standards (objectives of activity):**

**Habits of Mind**

- Asks questions**
- Uses numbers to quantify**
- Works in a group**
- Uses tools to measure and view**
- Looks at how parts of things are needed**
- Describes and compares using physical attributes**
- Observes using senses**
- Draws and describes observations**

**Content (key terms and topics covered):**

Sound, Vibration, Pitch, Eardrum, Model

**Learning Activity (description in steps)**

**Abstract (limit 100 characters):** Students will explore how sound travels through the air and how sound interacts with the eardrum.

**Details:** After introducing the concepts of sound and vibration extensively, separate the class into three groups, and distribute one glass bowl to each group. Instruct the students to stretch the SaranWrap over the bowls as tightly as possible without tearing it. Once the SaranWrap is tested for tightness, distribute approximately 15 grains of rice to each group. The rice should be dispersed evenly over the SaranWrap. At this point, explain to the students how this model will represent the eardrum. The movement of the SaranWrap mimics the movement of the eardrum when sound is heard, and can be visualized by the movement of the rice. Distribute the pan (or other drum) and wooden spoon (or other drumstick). Allow the students to bang their drums close to the bowls and observe the movement of the rice. Have them note how much the rice moves when the drum is hit with different intensities. Once each student has had a turn, have the groups move to the next glass bowl setup. Repeat the process until all students have had a turn to observe each model. During the conclusion of the lesson, ask students to describe how sound caused the rice to move, how different intensities of drumming influence rice movement, and how the size of the glass bowl related to rice movement.

**Materials Needed (type and quantity):**

**3 - Glass bowls**

**1 - Large**

**1 - Medium**

**1 - Small**

**1 - Box of SaranWrap**

**45 - Pieces of Rice**

**1 - Large Wooden Spoon (or any type of wooden drumstick)**

**1 - Pan (or any type of drum)**

**Notes and Tips (general changes, alternative methods, cautions): Any reasonable items can be used as a drum set. The best results are obtained when the drumming is very loud, and very close to the glass bowls. As a warning, keep the leftover rice in a child-proof container; otherwise, students will play in it. Beforehand, alert the teachers on either side of the classroom to the anticipated loud noises.**

**Sources/References:**

**1) [http://kidshealth.org/kid/closet/experiments/experiment\\_eardrum.html](http://kidshealth.org/kid/closet/experiments/experiment_eardrum.html)**

**2)**

**3)**