



THE BUS PROJECT

TODAY'S EXPLORATION: Identifying Materials to Make Noise

Grade Level : 1

Overview: Students will investigate which materials vibrate when struck and which make noise when they vibrate.

NGSS: 1-PS4-1. Plan and conduct investigations to prove that vibrating materials can make sound and make materials vibrate.

NGSS: K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

Practices

- Planning and Carrying Out Investigations
- Analyzing and Interpreting Data

Crosscutting Concepts

- Cause and Effect

Materials:

- Variety of materials - rocks, spoons, sticks, toys, etc. (anything that could vibrate when struck, and/or make noise when struck).
- [Knocker Data Collector](#)
- [Knocker Discussion Questions](#)

Investigation:

1. Collect items that students can use to strike or knock on surfaces (toys, sticks, spoons, metal, etc.).
2. Have students start by trying various items knocking on the tables, desks, walls, etc. Reminder, don't knock so hard that it hurts any surface.
3. Group students into partners or groups of 3-4, if possible.
4. Have students choose three items to test on the other side of a door or wall. They can use the [Knocker Data Collector](#) to record what they find.
5. Have one student stand on one side of the wall and knock one item on the wall. Record how well the partner or other group members can hear the knock on the other side of the wall. Record the findings on the [Knocker Data Collector](#).
6. After the experiment, have students talk about the [Knocker Discussion Questions](#).

7. Have a class discussion about which items made the best noise and why they made the best sound.

Product or Artifact Possibilities:

- Completed [Knocker Data Collector](#)
- Discussion based on [Knocker Discussion Questions](#)

Guiding Questions:

1. Which materials make more noise than others when struck?
2. Do the materials that make more noise vibrate?
3. Are there any similarities in the objects that made more noise?
4. Are there any similarities in the objects that make little noise?

What Are We Discovering?

Some materials vibrate more and therefore make more noise when struck against a surface.

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