byrd@home

Video 4: Retro Phones

To celebrate National Retro Day, we are going back in time to look at the innovation that created the phone. The idea behind phones is sound waves. Waves travel through a medium (i.e. air, string, water) and ultimately reaches our ears so that we can hear.

Basic Materials:

- 2 cups
- String or wire
- Something to poke a hole (i.e. thumb tacks)

Science Experiment

1. Have students choose (or you choose) a variable, something they can change or control, and ask a question about what will happen when you change this variable. For this experiment, they can choose the kind of cup, material of the string, or string length.
2. Have students make a hypothesis, or educated guess, on the results of changing the variable.
3. Design and complete an experiment to test the hypothesis.
4. Have students communicate (in writing or speaking) the results of their experiment.
5. This doesn't have to be the end! If the experiment leads to more questions, design another experiment. Remember the scientific method is iterative, or circular!

Engineering Project

1. The engineering problem is to create a speaking and listening device with objects around the house.
2. The criteria for this project is that you must be able to speak into one object and hear it from the other object (without being able to hear across the room).
3. You can define constraints including what materials students can use and the time they have to design and build.
4. Students should brainstorm solutions.
5. After brainstorming, students should pick the most promising solution and design.
6. After designing, students will build their designs.
7. They should test that their phone works, and if it does not, work to find a solution. Remember engineering is iterative, so encourage students to keep engineering!

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