GENERATIONGENIUS
ALWAYS QUESTION. ALWAYS WONDER.

LESSON PLAN

COMMUNICATION OVER DISTANCES
GRADES K-2

SUMMARY

Students will investigate tools that help people communicate over distances. Duration: 30 minutes.

NEXT GENERATION SCIENCE STANDARDS CORRELATION

1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.

Science & Engineering Practices	Connections to Classroom Activity
Planning and Carrying Out Investigations	• Students will plan out how to communicate math problems using light or sound.
Disciplinary Core Ideas	**Connections to Classroom Activity**
PS4.C: Information Technologies and Instrumentation People also use a variety of devices to communicate (send and receive information) over long distances. (1- PS4-4)	• Students choose from a variety of light and sound options to communicate math problems to a partner.
Crosscutting Concepts	**Connections to Classroom Activity**
Influence of Engineering, Technology, and Science, on Society and the Natural World People depend on various technologies in their lives; human life would be very different without technology. (1-PS4-4)	• Students develop their own ideas of how to communicate with classmates.

ENGAGE

Use a common clapping pattern to get your students' attention. Continue clapping and have students clap the pattern back to you. Next, move farther away from the students and continue to clap. Come back closer to the students and ask what they noticed. Students might mention that they could still hear your clapping when you were farther away, but it wasn't as loud. Segue to the lesson by telling students that today they will use light or sound to communicate with their classmates.

MATERIALS

- Index cards
- Markers
- Large plastic container
- Flashlights
- Triangles (Instruments)
- Kazoos

DIY Activity

- 2 Paper cups
- Piece of string
- 2 Paper clips
- Sharp pencil
- Pair of scissors

EXPLORE

Show students the choices of materials they will have to communicate over a distance with a partner. Ask students to think about how each of the items could be used to communicate numbers. Have students share ideas. Explain that students will choose a specific tool to communicate numbers to a partner who will be on the other side of the classroom. Have students demonstrate their ideas on how to communicate a specific number, such as 3.

Next give students index cards and markers and have them write simple addition problems using numbers 1-10. Remind students not to let their partner see their math problems.

After students choose their tools, separate the pairs of students across the room. Outside might work better due to noise. One student will communicate a math addition problem by pausing for a few seconds between numbers. The other student will try to figure out the answer to the problem and use their tool to communicate the answer. Students will switch partners and take turns doing problems and communicating answers. For more advanced students use a subtraction or a multiplication scenario.

EXPLAIN

Have students share their experiences out loud. Prompt with questions. "How many of you were correct with your math problems?" "What was the most difficult part about this challenge?"

Today you communicated over a distance using light or sound. Now let's watch the video and pay close attention to other ways that people communicate using light or sound.

ELABORATE

WATCH THE GENERATION GENIUS COMMUNICATING OVER DISTANCES VIDEO AS A GROUP

Facilitate a conversation using the Discussion Questions.

EVALUATE

Students can play the online Kahoot! quiz game located below the video which provides downloadable scores at the end of the quiz game. Alternatively, you can use the paper quiz or the exit ticket questions. All these resources are located below the video in the Assessment section.

EXTENSION

Have students use Morse code and a flashlight to spell their names.