**Curriculum Embedded Performance Assessment (CEPA)**

**Teacher Instructions**

**Did You Hear That?**

At the close of the unit on waves, the teacher will introduce the concept of using waves to transmit information. Although binary code is not listed as a resource here, teachers may choose to use that if their classroom of students is ready. The teacher will ask children to brainstorm a list of ways we communicate now. She will then go back in time and discuss the problems faced by communicating over long distances, or the problems faced when enemies could understand the communication. The teacher will show the videos on Morse Code and the Navajo Code and discuss why these tools were used and what benefits they had.

After learning about these problems, the students willcreate a coded message using waves to send and receive information. Each group will need to create a code to be sent and received. This code will be transmitted using waves. The students will be provided the tools used to create waves during the course of the waves unit, but may choose to use other tools with teacher approval. Students will need to create an alphabet or key so that the other students can crack their coded message. Students will record their code on their choice of format. They may do a poster, Google Slide, or Infographic. Each group will be presenting their code to their classmates as well as doing a demonstration that will send a message that will be received by the class to decode.

**Resources:**  video *Morse Code and the Information Age* [*https://www.youtube.com/watch?v=xcjgm6ctzAw*](https://www.youtube.com/watch?v=xcjgm6ctzAw)

*Navajo Code Talkers, Our Heroes* [*https://www.youtube.com/watch?v=5rSvm3m8ZUA*](https://www.youtube.com/watch?v=5rSvm3m8ZUA)

Navajo Code (graphic) <https://www.archives.gov/files/education/lessons/code-talkers/images/figure-1.jpg>

**CEPA Student Instructions**

Your job will be to create a coded message to be sent and received by waves. You may base your code on the codes you learned about or create a new code. You will need to create a key or alphabet that will show your code. You may use a poster, Google Slide or Infographic to display your code. Your group will be doing a presentation that will explain the code and actually send a message using the code. Your audience will be asked to decode your message.

**Materials:** 3 mason jars (4 oz. 8 oz. 12oz.) water, 3 drums (cylinders covered with clear packing on one end – hollow on the other) \*Try to find 3 empty canisters that differ in only one variable, height or width, smallpiece of wood with 6 nails pounded in. (nails will be hammered in groups of 2: 2 inches apart, 4 inches apart and 8 inches apart) rubber bands \*preferably the same width, ruler, recording sheet, Straw, Scissors, Someone who can blow really hard, 3 empty bottles (same size), water

1. Your first step will be to discuss what type of code you would like to use or create. After your group establishes a type to use, you will need to record it.
2. Your group will then need to discuss how you will be transmitting your code. All of the materials used during the waves unit will be available. If your or your group has something else in mind, you may ask the teacher to use it. Teacher will determine if it can be used.
3. You must practice sending and receiving messages so that you can work out any problems.
4. Create your graphic for your code. You may use poster board or a trifold, Google Slides, or create an Infographic.
5. Plan your presentation. Create cards for your speech and practice speaking.
6. Check the scoring rubric against your work. Make any changes necessary.
7. Present your coding project.

**CEPA Rubric**

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| **Criteria** | **E**  **Exceeds Expectation** | **M**  **Meets Expectation** | **P**  **Progressing Towards Expectation** | **N**  **Not Yet** |
| Sends and Receives Coded Information | More than one messages is sent and receive using code | One messages is sent and receive using code | Message is either correctly sent or received | Message did not correctly get sent or received |
| Code Graphic | Graphic is exceptionally neat, clearly presented and is easy to understand | Graphic is neat, clearly presented and is easy to understand | Graphic is done or nearly done | Graphic needs some more work in order to be complete |
| Oral Presentation | PVLEGS: all was exceptional | PVLEGS: Most was great | PVLEGS: Some work is needed | PVLEGS: oral presentation is not yet up to standard |