

NH PACE GR 4 SCIENCE Code Creators Inquiry Packet for Students

Essential Question: How is information best transferred between people in different places?

Scenario: I am challenging you to transfer information using Morse Code to a classmate across the classroom. You cannot go over to them or speak to them directly. Your job is to transfer secret information you want to share with your classmate without talking with them directly.

Procedure:

1. Write questions you have about Morse Code and how it can be used to transfer information between people in different places.

Source used: _____

Source used: _____

3. With your partner/group, decide on a way you could use Morse Code to transfer information across the room and write the plan below (include what materials you need). Remember to use the information from your research!

Plan:

4. Scientists record testable questions before, during, and after conducting investigations. **Independently** record your questions before you start.

5. See your teacher before starting this step. Conduct the first trial. You and your partner/group will stand on opposite sides of the room directly across from each other. Check off your role (sending or receiving the message) using the boxes below. **Remember that your partner should NOT see this message before you transfer it.**

Trial 1 I am sending the message I am receiving the message

Message: (Record the message you did send or what you thought was sent)
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6. After both partners have recorded the messages independently. Look at the messages you both recorded to analyze the accuracy of your communication method. Was your message accurate? What would you change? Record your thoughts.

After the trial: My Observations

What went well using this method of communication?
What did not go well using this method of communication?

7. Now, pick **one** thing to change from your original plan. You will test this out in Trial 2. Remember to use information from your research and include all materials

8. On your own, write a prediction about how the changes you made for this trial will impact how accurately the message will be received. Remember to support your thinking with **evidence!** This **must** be completed before transferring your messages!

9. See your teacher before starting this step. Conduct Trial 2 for your use of Morse Code. You and your partner will stand on opposite sides of the room directly across from each other. Check off your role (are you sending or receiving the message?).

Remember that your partner should NOT see this message before you transfer it.

Trial 2 I am sending the message I am receiving the message

Message:

10. After both partners have record the messages independently. Look at the messages you both recorded to compare the accuracy of your communication method. Was your message accurate? What would you change? Record your thoughts..

After the trial: My Observations

What went well with using this pattern of communication?
What did not go well with using this pattern of communication?

11. Independently, record your testable questions.

12. Reflect independently on this experience. Write in complete sentences and paragraphs on the reflection page. Use specific evidence from your observations and precise words to support your thinking.

Code Creators Reflection Page

1. Imagine you're in a completely dark room and need to transfer a secret message to your friend across from you. Choosing from among your trials or your classmates' trials, select what you think would be the best method to use for this situation. Be sure to explain why that method is the best one to use.

2. Which of your trials worked best for you and your group? Use evidence from your trials to support your answer.

3. Identify and compare **two** patterns of communication. Use a way you know to show your information in an organized way (chart, venn diagram, etc...).

4. Matt and Jen decided they would use a flashlight as their way to send a Morse code message from one to the other during a snowstorm. Matt's window is 8 meters away from Jen's window. According to the weatherman, there are white-out conditions with a visibility of only 2 meters.

Will Matt and Jen be able to successfully transfer a secret message? _____

Why or why not? Remember to use evidence to support your thinking.

