Design Information Transfer

Grade 4 Science Worksheet

Name _____ Date _____

Circle the answer.

1. A sender flashes so fast that the receiver sees one long glow instead of separate flashes. What should the team change?

   use a dimmer light so it does not glow

   remove the code key

   slow the flashes and add gaps between them

   flash even faster so messages are shorter

2. A hiker uses 3 whistle blasts to call for help. Why use 3 instead of 1?

   1 blast is too loud for people nearby

   3 blasts use less breath than 1 long blast

   3 blasts is a pattern that is unlikely to happen by accident

   1 blast cannot travel very far through air

3. Why do sender and receiver need the same code?

   so the sender can keep it secret from the receiver

   so the receiver gets the message the sender meant

   so the signal travels faster through the air

   so the signal sounds louder to everyone

4. Design A: a whistle code heard 200 m away. Design B: a flag code seen 500 m away but not at night. Campers need signals day and night up to 150 m. Which fits?

   Design B neither design Design A only both used together

5. Two teams compare codes for five messages. Team 1's patterns are all 2 flashes long. Team 2's are 1 to 5 flashes. Team 1's partners make fewer mistakes. Why?

   every message takes the same short time, so counting errors are rare

   Team 1 sent fewer messages during the test

   longer codes are always easier for partners to read

   Team 2 used a brighter flashlight than Team 1

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Answer Key - Grade 4 Science Worksheet

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