Design Information Transfer

Grade 4 Science Worksheet - Challenge Me

Name _____ Date _____

Circle the answer.

1. Two codes both work in tests. Code X takes 5 seconds per message; Code Y takes 15. Errors are the same. Which is better for an emergency?
   neither, because they both work
   Code X, because it is faster with no more errors
   Code Y, because it has more errors
   Code Y, because longer messages are safer

2. A class makes a sound code for a noisy gym. Which change would help most?
   use quiet taps but make them faster
   send the code from another room
   use a loud whistle instead of quiet taps
   use more patterns that sound alike

3. Code: 2 short = yes, 3 short = no. The receiver often confuses them. Which new code is clearer?
   short = yes, long = no
   2 short = yes, 2 short = no
   4 short = yes, 5 short = no
   3 short = yes, 3 short = no

4. Two scouts use mirrors to flash sunlight as signals. When will this design not work?
   on a sunny day
   in the morning sun
   on a cloudy day
   when they are far apart in the open

5. A team's light code works in the classroom but fails outside at noon. What is the most likely reason?
   the code key changed outside
   the flashlight is hard to see in bright sunlight
   the receiver is closer outside
   light cannot travel outside

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Answer Key - Grade 4 Science Worksheet - Challenge Me

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