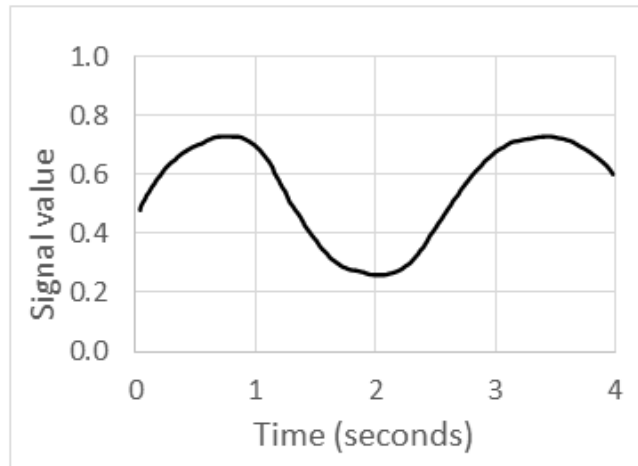


Digital vs. Analog

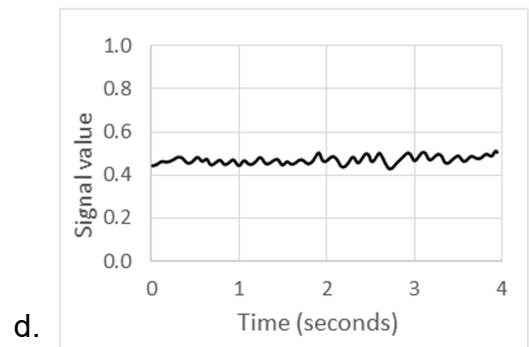
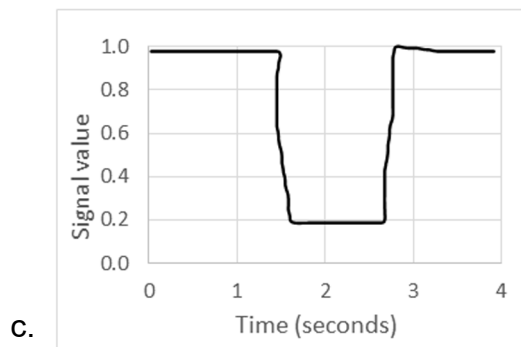
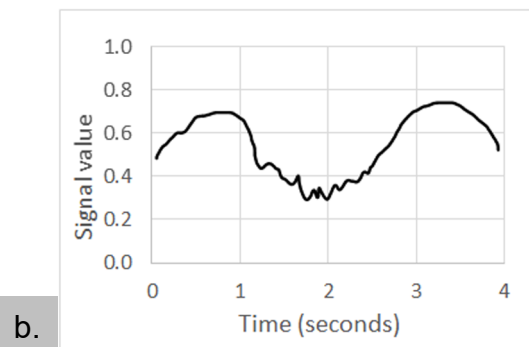
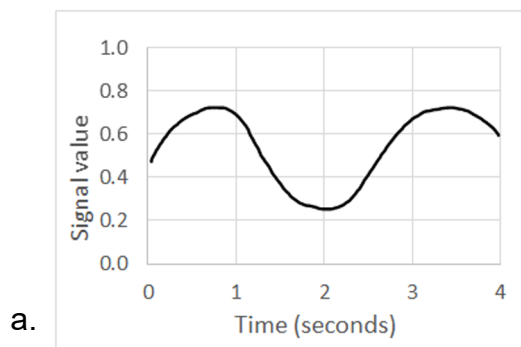
Student quiz—*Answer key*

Directions: Answer the questions below.

1. The graph below shows an analog signal recorded in an environment with zero noise.



Which of the following graphs best represents what the signal would look like if it was recorded in a noisy environment?



Digital vs. Analog—Page 2

Answer Key

Student quiz

Directions: Answer the questions below.

2. In your own words, explain why digital signals are better than analog signals for sending or storing information.

Digital signals are better than analog signals for sending and storing information because they are not distorted by noise. Analog signals can always change by small amounts, but digital signals are either “high” or “low,” and small changes do not affect them.

3. The sensor app on your phone includes a light sensor. Imagine that you are doing this project again, but instead of using sound to send a signal, you use light (by aiming a flashlight at the phone). What are some possible sources of “noise” in your classroom that could affect the signal?

- ceiling lights
- sunlight from the windows
- computer monitors
- other students with flashlights
- people walking around and casting shadows on the phone or blocking the flashlight

Digital vs. Analog—Page 3

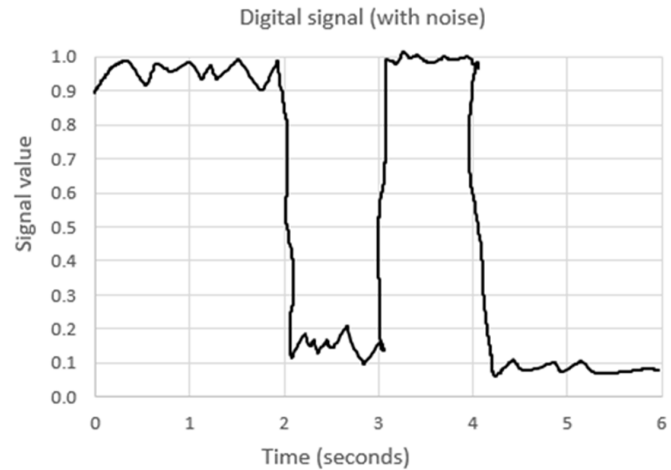
Answer Key

Student quiz

Directions: Answer the questions below.

4. The graph below shows an example digital signal with noise. Which of the following statements is true?

- a. The value at time = 1.5 seconds is low.
- b. The value at time = 1.5 seconds is high.
- c. Because the signal is noisy, you cannot determine whether the signal is high or low at time = 1.5 seconds.
- d. None of the above.



5. The graph below shows an example analog signal with noise. Which of the following statements is true?

- a. Because the signal is noisy, you cannot determine the exact original value of the signal (without noise) at time = 2 seconds.
- b. The original value of the signal (without noise) at time = 2 seconds is exactly 0.4.
- c. The original value of the signal (without noise) at time = 2 seconds is zero.
- d. None of the above.

