

Phase 4: Sensor Explorer Lessons: Answer Key

Color Sensor Lesson 1 Summative Assessment Answer Key

1. C
2. D
3. B: False
4. A: True
5. B: False
6. A: True
7. B: False
8. A. Red (5), B. Green (3), C. Blue (2), D. Orange (4), E. Violet (1)
9. A: Gamma rays are high-frequency waves.
10. D. All of the above

Color Sensor Lesson 2 Summative Assessment Answer Key

1. B: Cones
2. A: It has more red and equal parts green and blue.
3. B: It is a mixture of all the colors.
4. B: The amount of Red, Green or Blue the cones detected
5. A: It was showing the optic nerve sending color to the brain
6. C: 3
7. D: (0, 100, 0)
8. A: (0, 0, 0)
9. D: Magenta
10. C: Orange

Color Sensor Lesson 3 Summative Assessment Answer Key

1. B: The cloth is reflecting blue wavelengths.
2. C: Black objects absorb all the wavelengths.
3. B: The object reflects only red waves.
4. A: The object absorbs more green and blue than red waves.
5. B: The object reflects equal parts red and blue.

6. D: The sensor shines a white light and once reflected, the sensor measures how much red, green and blue frequencies return to the sensor.
7. R = 255, G = 255, B = 0
8. R = 255, G = 200, B = 220
9. R = 150, G = 200, B = 255
10. R = 190, G = 80, B = 0

Color Sensor Lesson 4 Summative Assessment Answer Key

1. B: It tells the computer to return a value when a condition is met.
2. A: It tells the computer to execute a statement repeatedly forever.
3. C: The sensor is constantly sensing, so the loop allows the code to do the same. AND
- D. The computer needs to be told to repeat an action over and over forever.
4. A: "Start" block and C. "= logic" block
5. A: The sensor shines white light and it measures the frequency of the reflected waves. AND D. The sensor sends information to the computer-based on the wavelengths it detects.
6. B: It tells the computer to display information visually on screen.
7. B: No, each letter must have a specific color.
8. A: Yes, the order of colors scanned depended on the order of the letters.
9. D: The human eye receives certain waves of light reflected by objects.
10. C: The black object absorbs all wavelengths, while the white object reflects all wavelengths.

Range Finder Lesson 1 Formative Assessment Answer Key

1. A: The ball sped up.
2. C: The ball slowed down.
3. C: I had to move my hand closer to the sensor.
4. D: I had to move my hand further away from the sensor.
5. B: Creating a smaller space allowed it to move faster.
6. B: The speed of the bouncing ball and the flashing gate.
7. No incorrect response
8. No incorrect response

9. No incorrect response
10. No incorrect response

Range Finder Lesson 2 Summative Assessment Answer Key

1. D: The speed of a sound wave.
2. A: Distance
3. D: All of the above
4. D: Sound waves
5. C: Cm is a smaller unit than in
6. A: The frequency is high.
7. B: The ball's speed.
8. B: Sound wave
9. A: The distance it travels

Range Finder Lesson 3 Summative Assessment Answer Key

1. B: 5 inches
2. C: .5 cm
3. D: The speed doesn't affect the size of the zone.
4. A: Multiply by 2.54
5. B: Divide by 2.54
6. D: The sensor detects an object at a certain distance and sets off an alarm.
7. A: If, do, else
8. D: All of the above.
9. D: The pins control the sensor's ability to talk to the computer.
10. A: The data tells us the measured distance an object is located from the sensor.

Range Finder Lesson 4 Summative Assessment Answer Key

1. C, A, D, B, E
2. E
3. D

4. Graph
5. 150 m
6. 15 seconds
7. Stopped
8. 10 m/s
9. Answers will vary
10. Graph A
11. Graph B
12. Graph C