

Name:

Date:

Class:

## Pre-Assessment **Answer Key**

1. What medical sensors do you think can be improved using flexible, wireless technology?  
Temperature, pulse rate, blood oxygenation, ANSWERS WILL VARY
2. What does a resistor do in a circuit? A resistor controls the amount of current flowing through a circuit.
3. Does it matter which way you connect a resistor? No. Are the legs different (meaning polarized)? The legs are not polarized so you can connect it facing either direction and it will not matter in the circuit. Current can flow through equally in either direction.
4. When you apply physical pressure to a force-sensitive resistor, do you expect the resistance to increase or decrease? Answers will vary. Some will guess incorrectly but others may know or simply guess the correct answer that the resistance DECREASES as physical pressure increases.
5. What are the two possible values for a digital signal? Answers may vary but should be along the idea of HIGH/LOW, ON/OFF, 5V/0V, 1/0, CLOSED/OPEN
6. What units is resistance measured in? Ohms
7. How does serial communication work? The process of sending data one bit at a time sequentially from one device to another.
8. How many more numbers can you add to a range of values by increasing from an 8-bit byte to a 10-bit byte?  $2^{10} - 2^8 = 1024 - 256 = 768$  or 4 times as many
9. During childbirth, do the caregivers monitor the mother or the fetus? Both but it depends on the monitor. What do they measure/monitor? It depends on the monitor but a high-end monitor can measure maternal and fetal heart rate, uterine contractions, maternal blood oxygenation, and maternal blood pressure.