Robot Soccer Challenge Post-Quiz Answer Key

1. **Explain how we used messages sent over a Bluetooth connection to enable one NXT to be used to remotely control another.**

   Let's call one NXT the "controller" and the other NXT the "receiver."

   When each button (orange, left, right) is pressed on the controller, it sends a distinct message ("1," "2," "3") via Bluetooth to the receiver. When no button is pressed on the controller, it sends another distinct message ("0") to the receiver.

   We programmed the receiver so that…
   - when it receives "1" it moves forward
   - when it receives "2" it moves left
   - when it receives "3" it moves right
   - when it receives "0" it does nothing

2. **What ideas do you have for how you might change the programming to accomplish different tasks using two NXT bricks?**

   Answers will vary.

3. **In your own words, what are the steps of the engineering design process? And which is your favorite step?**

   Answers will vary, but generally, look for the following <u>main steps</u>: 1) understand the problem or challenge, 2) brainstorm and research to generate solution ideas and preliminary designs, 3) choose the best solution to pursue as the definitive design, 4) create a prototype, 5) test it and make improvements, 6) present the results and final solution.