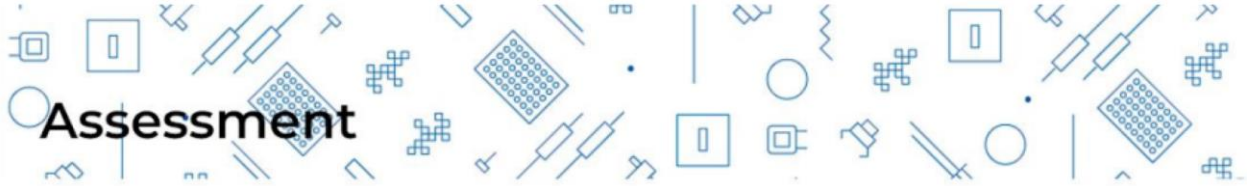

Extend in Storymode - Lesson 4.1 Formative Assessment Questions

Answer Key

1. C
2. A, B, and D
3. B
4. C
5. A
6. D
7. B
8. *Example:* My understanding of circuits and logic has improved a lot through building and playing with the Piper Computer Kit. Before, I didn't know how electrical components worked together to make things happen. Now, I can see how different parts like resistors, LEDs, and switches connect in a circuit to perform specific tasks. I learned that circuits need to be complete for electricity to flow, and I got hands-on experience with how logic works in coding, like using 'if' statements to control what happens in a game. This made me realize how important precise connections and logical thinking are in both electronics and programming.

Assessment

Design a Bot & Make Music - Lesson 4.2 Formative Assessment

Answer Key

1. B
2. D
3. A
4. C
5. A
6. D
7. *Example:* Experimenting with different designs in Bot Builder has really enhanced my understanding of engineering and creativity. I learned that engineering is not just about building things correctly but also about thinking creatively to solve problems. When I tried out different designs, I had to think about how each part of the bot would work together. Sometimes, my first design didn't work as planned, so I had to go back, think creatively, and make changes to improve it. This taught me that engineering involves a lot of trial and error and that creativity is key to coming up with new and better solutions.

Assessment

Redesign a Stoplight - Lesson 4.3 Formative Assessment

Answer Key

1. D
2. C
3. B
4. A
5. C
6. A
7. *Example:* Each color on a stoplight stays on for different amounts of time to manage the flow of traffic safely and efficiently. The green light usually stays on the longest because it allows cars to move through the intersection, which helps prevent traffic jams. The yellow light is on for a shorter time to warn drivers that the light is about to turn red, giving them enough time to slow down and stop. The red light is on to stop traffic completely, letting cars and pedestrians from other directions move safely. The timing of each light is carefully planned based on how busy the intersection is, so that everyone can get where they need to go without too much delay. This system helps keep traffic moving smoothly while also preventing accidents.

Assessment

Engineering Design with Piper - Lesson 4.4 Formative Assessment

Answer Key

1. A
2. C
3. B
4. B
5. D
6. A
7. *Example:* Empathy is an important factor in engineering and game design because it helps creators understand the needs and feelings of those who will use their products. In engineering, considering how someone will interact with a device or system can lead to designs that are safer, easier to use, and more effective. For example, an engineer designing a wheelchair must consider the comfort, mobility, and independence of the person using it. In game design, empathy allows designers to create experiences that are enjoyable and engaging for a wide range of players. By thinking about how different players might feel or react during a game, designers can make games more inclusive, accessible, and fun. Empathy ensures that the final product truly meets the needs of its users, making it both successful and meaningful.