**Deconstructing the Piper Computer - Lesson 5.1 Formative Assessment**
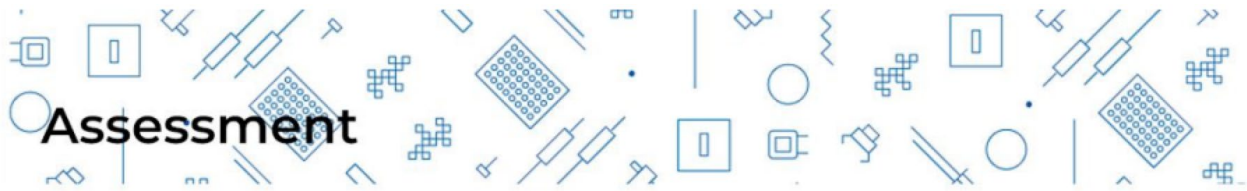
Answer Key

1. D

2. B, C

3. A

4. C

5. B, D

6. A, D

7. *Example:* You might need or want to take apart a computer for several reasons. One common reason is to repair or replace a faulty component, such as a damaged hard drive, a malfunctioning power supply, or faulty RAM. Taking the computer apart allows you to identify the problem and fix it. Another reason could be to upgrade the computer's hardware, like adding more memory, installing a faster processor, or upgrading the graphics card to improve performance. Additionally, taking apart a computer can be a learning experience, helping you understand how the different parts work together and how computers function overall. This hands-on experience can be valuable if you're interested in building or customizing computers in the future. Overall, taking apart a computer can help with troubleshooting, upgrading, or gaining a deeper understanding of its inner workings.
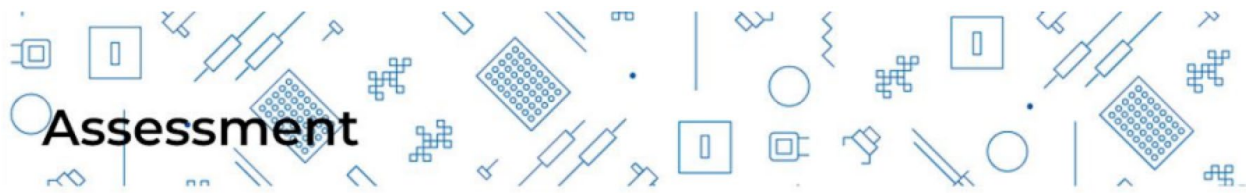
Computers in Everyday Life - Lesson 5.2 Formative Assessment
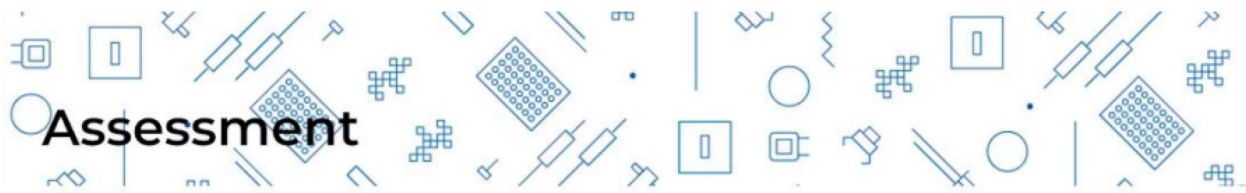
Answer Key

1. C, D

2. B, C

3. A, D

4. B

5. *Example:*
   Advantages: A calculator can speed up calculations.
   Calculators reduce human error.
   Some calculators can do more complicated math.
   Disadvantages: I need to have a calculator with me to use one.
   Relying heavily on a calculator can inhibit the development of mental math.

6. *Example:* Nursing - Electronic health records, Telemedicine, Patient monitoring systems, Medication administration and management, inventory management, Patient and staff scheduling, Research, Billing and coding

Environmental Impact of Computers - Lesson 5.3 Formative Assessment
Answer Key

1. A

2. *Example:*
   Mining - Removing metals from the earth that are used in computer parts.
   Manufacturing - Putting all the components together to build a fully functioning computer.
   Packaging - What the computer is placed into for safe and secure shipping.
   Shipping - The transportation of the computer to a store or its new owner.
   Usage - The way that a person uses and stores a computer.
   Recycle - Taking materials from older or unused computers and using them to make something new.

3. *Example:*
   1. Reduce Electronic Waste: Extend the lifespan of computers by performing regular maintenance and upgrades rather than replacing them frequently. Recycle old devices responsibly through proper e-waste recycling programs to ensure that hazardous materials are handled safely and valuable components are recovered.

   2. Sustainable Manufacturing: Choose products from companies prioritizing sustainable manufacturing practices. Look for certifications or labels indicating that the products are made from recycled materials or produced with minimal environmental impact.

   3. Telecommuting: Reduce the need for travel by using computers for remote work, meetings, and collaboration, which can decrease the overall carbon footprints associated with commuting.

   4. Paper Reduction: Minimize printing using digital documents and communications. Use electronic notes and files to reduce paper waste.

Final Design Challenge - Lesson 5.4 Formative Assessment

Answer Key

1. B

2. D

3. A

4. D

5. C

6. *Example:* If I were designing a new product, I would want to follow a process because it helps ensure that the product is well thought out, functional, and meets the needs of the users. A process provides a clear roadmap, starting from identifying the problem or need, through brainstorming and designing, to testing and refining the product. By following a process, I can make sure that each step is carefully considered, which reduces the chances of making mistakes or overlooking important details. It also allows for feedback and improvements along the way, ensuring that the final product is of high quality. Additionally, a process helps in managing time and resources efficiently, making the entire design and development more organized and successful.