Explore Stimulus
Answer Key

<u>Hook</u>

1. Where can we find computers?
   a. **everywhere**
   b. people's cars
   c. your backpack
   d. on your wrist

2. Is there a machine designed to help with thinking work?
   a. false
   b. **true**

3. Pioneers of computer science realized the thinking machine had to complete four different tasks. What are they?
   a. processing, thinking, input, storage
   b. store information, output, processing, inform
   c. **input, storage, processing, output**
   d. input, output, change information, thinking

4. What makes a computer a computer?
   a. the size of the computer
   b. storage and processing
   c. the motherboard
   d. **input, storage, processing, output**

5. Which of these is an example of input?
   a. keystrokes from a keyboard
   b. microphone
   c. camera
   d. **all of the above**

6. Which of these is an example of storage and processing?
   a. cable
   b. **memory**
   c. computer monitor
   d. keyboard

7. Which of the following is an example of output?
   a. display with video
   b. signals to control a robot
   c. display with text

        d. **all of the above**

Mini Lesson 2

Answers will vary based on the computing innovation chosen.

Fitbit Example
1. The input is signals from the 3-axis accelerometer that measures the vibrations from the x, y, and z axis.
2. The data is being processed by calculating the acceleration using the signals from the x, y, and z axis.
3. The output is the number of steps.
4. The beneficial effect of Fitbit is that you can count your steps and meet your goal to stay healthy. The unintended harmful effect is that Fitbit also stores the locations you have been to using GPS which is a privacy concern.

Guided Problem Solving Activities

1. The upgraded system uses a menu of categories containing additional information not supplied by the original system. The menu is used to help order items more efficiently, saving each of the video game shops money. Which of the following is **least** likely to be included in the menu of categories?
    a. **A category for customer service feedback.**
    b. A category listing commonly ordered items.
    c. A category for each location in the video game shop.
    d. A category for emergency or rush orders.

2. Of the following potential benefits, which is **least** likely to be provided by the upgraded system?
    a. Some items may be placed on automatic reorder.
    b. **One single list of supplies for order.**
    c. The manager will be able to order more efficiently.
    d. The manager will be unable to mistakenly select the incorrect item they are trying to order.

3. Which of the following is most likely a data privacy concern of the upgraded system?
    a. **The manager's ordering credentials could be compromised if an unauthorized individual gains access to the ordering system.**
    b. Storing information in the ordering system makes it easy for individuals to trick the system using malicious links.
    c. The system design increases the chance that managers will unknowingly install malware on the tablet or devices that will share their credentials with unauthorized individuals.
    d. The system design makes it easy for unauthorized individuals to acquire managers' private encryption keys.

4. Which of the following is considered a potential effect of the application rather than a function of the application?
    a. SpeechAlt changes the speaker's accent and tone to make them sound like a westerner. **(function)**
    b. SpeechAlt provides a shortcut for call center representatives from having to train for months to sound like a westerner. **(purpose)**
    c. **The computing innovation leaves out the bias of the caller against minority call center representatives and focuses on the problem that needs to be solved during the call. (effect)**
    d. The computing innovation uses data about the sounds of different accents to transform a speaker's accent. **(function)**

5. Which of the following is most likely to be a benefit of storing the phone conversations?
    a. **Making improvements to the software.**
    b. Keeping track of topics customers call about.
    c. Quality control at the call center.
    d. Keeping count of resolved tickets.

6. Which of the following may be an unintended effect of the use of SpeechAlt?
    a. Customers calling the call center cannot distinguish the nationality of the call center representative.
    b. The call center representative's voice sounds robotic.
    c. Call center representatives can focus on resolving issues the users call about.
    d. **The computing innovation caters to user's racist beliefs that a non-westerner is incapable of resolving issues.**

7. Which of the following data is not provided directly from the user but is necessary for SpeechAlt to operate as intended?
    a. **Sound bites from people residing in different countries of the world.**
    b. A list of frequent issues users call about.
    c. The email address of the caller.
    d. Location of the caller.

8. Which of the following groups is least likely to receive targeted advertisements by businesses that are affiliates of SpeechAlt?
    a. A university student with a speech impediment.
    b. **A news reporter in the United States.**
    c. Teenagers who want to prank their friends on the phone.
    d. A Korean student who wants to learn English.