

# OBJECTIVE

## understand hardware 2.2

### CHOOSE AN OUTPUT DEVICE

**SCENARIO:** Derek Brown, the CEO of Graphic Design Institute, has received a large contract from a prominent educational products company to design games that will provide an engaging way for students to learn concepts in a variety of topics. He has come up with some possible games and is eager to match the intended learners' experience accurately with the best output device. Derek recognizes that factors such as the goal of the game, the game response anticipated by the player, and the age of the player are important considerations. Derek is also keenly aware of the need to engage players in deep sensory experiences.

**1. In addition to visual feedback, what other sense can provide the next most effective feedback from a math game that teaches multiplication by allowing the user to shoot at the correct answers as the numbers fly by? When a level is completed, a car racing game will be accessible.**

- a. Vocal auditory
- b. Sound effect auditory
- c. Kinetic

**2. In addition to vocal auditory feedback, what other sense can provide the next most effective feedback from a chemistry quiz game in which the user jumps through a maze and grabs the correct formulas to match definitions? When a level is completed, the user will get a matching puzzle game to learn more about the formulas.**

- a. Visual
- b. Sound effect auditory
- c. Kinetic

**3. In addition to sound effect auditory feedback, what other sense can provide the next most effective feedback from a geometry game in which the user matches a word to a shape by flying a plane through geometrically shaped clouds (triangle, square, rhombus, pentagon, and so on), thus enabling the student to match words to shapes? When a level is completed, the user will get to shoot through the clouds to gain more points.**

- a. Visual
- b. Vocal auditory
- c. Kinetic

### HINT

*Think about what types of feedback provide the best information about your performance.*

## Answers

1. In addition to visual feedback, what other sense can provide the next most effective feedback from a math game that teaches multiplication by allowing the user to shoot at the correct answers as the numbers fly by? When a level is completed, a car racing game will be accessible.  
**b. Sound effect auditory.** The sound of hitting targets and the racing car would enhance the game play.
2. In addition to vocal auditory feedback, what other sense can provide the next most effective feedback from a chemistry quiz game in which the user jumps through a maze and grabs the correct formulas to match definitions? When a level is completed, the user will get a matching puzzle game to learn more about the formulas.  
**a. Visual.** It would be important to see the puzzle.
3. In addition to sound effect auditory feedback, what other sense can provide the next most effective feedback from a geometry game in which the user matches a word to a shape by flying a plane through geometrically shaped clouds (triangle, square, rhombus, pentagon, etc.), thus enabling the student to match words to shapes? A correct answer is rewarded with a drum roll.  
**c. Kinetic.** The shaking of a controller can enhance the sound effect of a drum roll.

## Essential details

- An **output device** is used to transfer data out of the computer in the form of text, images, sounds, motion, or other media to a display screen, control device, printer, loudspeaker, or storage device.
- **Kinetic** feedback involves the sense of touch and motion.
- **Auditory** feedback involves the sense of hearing.
- **Visual** feedback involves the sense of sight.

### FAST TRACK HELP

- **Computer Dictionary Online**  
<http://www.computer-dictionary-online.org/?q=~a>
- **It's Time to Take Mobile Gaming Seriously**  
<http://www.thetechlabs.com/tech-news/its-time-to-take-mobile-gaming-seriously/>

