

Name:

Date:

Class:

Post Assessment Day 3 **Answer Key**

1. Describe in one sentence what you understand by the term *robot*.
A robot is a machine that gathers information about its environment (senses) and uses that information (thinks) to follow instructions to do work (acts).
2. What are the main parts of a robot? Describe its similarities and differences when compared to a human brain.
Computer/chip (to make decisions), Input ports (connected to sensors), and Outputs (connected to motors, for example).
Both robots and human brains process sensory inputs, make decisions based on information, and can learn from experience. Our CuteBot uses sensors to detect walls, processes this data to choose directions, and can be programmed to remember successful paths, just as our brains use senses, neural processing, and memory formation. However, human brains have vastly superior pattern recognition, adaptability, and parallel processing capabilities, easily handling millions of simultaneous tasks, while our robot focuses on one simple maze-solving algorithm. The key structural difference is that while robots use programmed algorithms and digital memory, human brains utilize complex networks of billions of neurons forming trillions of dynamic connections that can flexibly rewire themselves through learning and experience. *(The robot can also handle millions/billions of tasks with supercomputing capabilities if built into it or connected via networks).*
3. What do you need to do to make a robot move?
To make a robot move, we need three main components: a code/control system (that tells the actuators/motors when and how to move), a motor that provides the motion, and a power source to run the motors. In summary, it requires a program telling it precisely what to do, step by step, or through experiential learning-AI.