

Robotics Activity Guide

Objectives

In this unit, students will:

1. Identify the characteristics of a variety of types and sizes of robots.
2. Describe how artificial intelligence is applied to robotic systems.
3. Identify, sketch and label all major parts of an industrial robot.
4. Describe the basic components that allow an operator to program robots.
5. Compare and contrast robotic applications in medicine, industrial, and entertainment applications.
6. Set up and program an interactive robotics station.

Day #	Activity #	Activity Description	Type of Activity
1	1	History of Robotics Provide information on the history of robots	Video
1	2	Meeting Cye Introduction to Cye the robot, Cye's navigation, Cye's toolbar, and how to set Cye up at Home Base. Leave Cye docked on the home base charging unit after each use to keep it fully charged. Charge overnight and weekends.	Computer Program
1	3	Types of Robots Explore slide show and write information in journal.	Internet
2	1	Point and click Navigation Study the Point-and-Click method for navigating Cye; create destinations called Hot Points	Computer Program
2	2	Graph-and-Go Navigation Learn Graph-and-Go navigation. Create S-curve line path.	Computer Program
3	1	Drag-and-Drive Navigation You will learn the Drag-and-Drive method for navigating Cye	Computer Program
3	2	Map out the perimeter and interior of the room	Computer Program
4	1	Introduction to Obstacle Hot Points Create an obstacle hot point for Cye to navigate.	Computer Program
5	1	Narrative Writing activity/on-screen multiple-choice test Describe ways Cye could be utilized to do things such as cleaning, moving products and security in a department store.	Test
5	2	Introduction to checkpoints Creating a checkpoint for Cye on your map	Computer Program
6	1	Experiencing New Robot Technology Explore an internet site and write in journal.	Internet
7	1	Zap Programming Create your own Zap file by placing each step of the Zap file into a 7-step flowchart – 3 hot points, a polar motion, 2 beeps, and a wait.	Computer Program
8	1	Polar, Absolute, and Relative Cartesian Coordinates Practice using coordinates to navigate Cye.	Computer Program
9	1	Polar and Cartesian Coordinates in Zap Programming Create the coordinates to make Cye perform one triangle and one square.	Project
10	1	Design Brief	Project
10	2	Persuasive Writing activity/on-screen multiple-choice test Explain the features your robot has to offer. Provide information demonstrating your understanding of the different types of robots and your ability to create and construct the robot.	Test