

# Articulated Robotics



## Description

In this curriculum, students use the Mini Robot, a sophisticated robot specially developed for fast and fun learning. After an introduction to the parts of the robot and how it is used, students learn how to home the robot, use the control program to move the robot arm, and program rudimentary positions and programs. As students practice their manipulative skills, they learn more complex procedures and tasks, including laying out Cartesian coordinate grids, designing simple flow charts for programming, and running a complete cycle of robotic movements.

## Skills

- Apply math and measurement to robot arm movement.
- Develop flow charts to describe a robotic program.
- Manually control a robotic arm.
- Use robot programming skills to solve problems.
- Troubleshoot robot programs.

## Knowledge

- Types of robots
- Current uses and advantages of robots
- Major components of a robotic system
- History of robots

## Activities

- Activity 1 Introduction
- Activity 2 Start-up and Manual Control
- Activity 3 Soldering
- Activity 4 Positions
- Activity 5 Coordinates
- Activity 6 Programming
- Activity 7 Edit a Program
- Activity 8 Programming Speed and Pauses
- Activity 9 Program for the Mouse Trap
- Activity 10 Post-Test and Wrap-up
- Activity 11 Bonus Activities
- Activity 12 Challenge
- Activity 13 Open-Ended Challenge
- Activity 14 Careers
- Activity 15 Internet

## Standards

Math/Measure Problem Solving Reading

## Module Includes:

DEPCO Robotics Student Workbook, DEPCO Robotics Installation CD, 5 Axis Articulated Robot, Robot Controller and Computer Interface, DEPCO Robot Mounting Board, DEPCO Robot Activity Kit, Robotics Control Software, Ruler, Headphones (2)

## Requirements

Sufficient workspace should be provided to accommodate a computer monitor, keyboard, mouse, robot control box, and robot.

Module requires a computer workstation.

Computer USB slot is required.

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