

TECH:Robotic Hazardous Materials Squad (Manu)

Summary

In this activity student will use a remote controlled robot to simulate a hazardous materials removal exercise. This activity will introduce students to the following career; Robotics, Hazardous Materials Specialist, Robotic Technician, Environmental Scientist, Manufacturing Environmental, and Scientist Technician Engineer

Time Frame

1 class periods of 45 minutes each

Life Skills

Employability

Materials

Remote control robot: i.e., Rooster R/C from Pitsco.

Teacher designed hazardous materials receiver that can be towed by the robot.

Magnet that can be picked up by the robot.

Three artificial hazardous materials: i.e., mini M&M container, Metal paper clips, and a ping-pong ball.

Open 10' x 10' floor area for student to work (the danger zone).

stop watch or timer.

A student TLC Note (handout).

Background for Teachers

Teachers should be familiar with and understand the activity; they should have a good understanding of the principles of robotics. They should understand the operations of the robot. In this activity the student will use the remote controlled robot to simulate a "Hazardous Materials" clean up. Each student should have the opportunity to operate the robot. Using the robot they will pull the hazardous materials receiver out into the danger zone, clean up the spills, and then pull the hazardous materials receiver out of the danger zone. This will all be timed to see who is most efficient.

Student Prior Knowledge

Student should understand that in the "Technology Life and Careers" (TLC) course they will be exploring careers fields. They should have been introduced to the Robot and its operation.

Intended Learning Outcomes

Students will define the terms, robot and robotics. Students will be introduced to the career fields that are associated with Robotics.

Instructional Procedures

- 1- Get your instructor's permission or help to do this robot activity.
- 2- Place the hazardous materials in their designated locations. Place the robot and the hazardous material receiver in their designated locations.
- 3- Use the stopwatch to time how long it takes to remove the hazardous materials from the danger zone by means of the robot and the receiver.
- 4- Record your time on the other side of this sheet.
- 5- Let every member of your group have an opportunity to clean up the hazardous materials.
- 6- Complete the questions on the other side of the TLC Note.
- 7- Get your grade.

Authors

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