

Robotics

Challenge #3

“Moving Objects”

Introduction

Building off of the Lego tutorial “Move Object” you are to complete the following challenge. You must first make sure your “Bot” is built properly and then start your programming. As a team, you must complete the challenge in a timely manner. Follow the criteria below to get started.

Objectives:

Standard: 1. Creativity and Innovation:

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

Standard: 3. Research and Information Fluency:

Students apply digital tools to gather, evaluate, and use information.

Standard: 4. Critical Thinking, Problem Solving, and Decision Making:

Students use critical thinking skills to plan and conduct research, manage projects, solve problems and make informed decisions using appropriate digital tools and resources.

Standard: 6. Technology Operations and Concepts:

Students demonstrate a sound understanding of technology concepts, systems, and operations.

Criteria



- Create a program for your “Bot” that moves specific objects to their respective locations.
- A course will be set up in the classroom for you to test your program and evaluate your

- design. You will be simulating an industry standard for shipping and receiving.
- a. The course is set up in the front of the classroom.
 - b. There are 2 objects that your “Bot” must move from the storage area of the warehouse to their shipping/loading area.
 - c. Your “Bot” must move the objects to their final destination only by programming and must drop off the object, back-up and turn before it can move to the next area.
 - d. You must start with object A and then B.
 - e. Your “Bot” must return to its original starting position.
 - f. Remember “Time equals Money” in industry! Create the most efficient path for your “Bot”.
 - g. NO TANK MOVES.
- You cannot use any other additions to your basic “Bot”
 - You must create a video of your project when you are ready to run your “FINAL” test.
 - You must keep a daily journal that includes the following:
 - a. What you have completed during your class time.
 - b. What positives you have encountered.
 - c. What setbacks you have encountered.
 - d. What adjustments you have made to improve your “Bot” outcome.

Grading

● Completed Program	25 pts
● Final Test Run <small>(-5 pts for every inch outside loading space)</small>	60 pts
● <u>Journal Entries</u>	<u>15 pts</u>
Total	100 pts

STEM Focus:

Science- unit conversions

Engineering- computer programming, equations

Math- unit conversions, equations, geometric shapes, measuring