EV3 Robotics

Content Area: **Unified Arts**
Course(s): **STEM 5**
Time Period: **October**
Length: **10 Days**
Status: **Published**

Unit Summary

In this unit, students will learn how to apply knowledge about programming and engineering to design a robot and program it to complete different tasks.

Standards

TECH.8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
TECH.8.1.5.C.CS4	Contribute to project teams to produce original works or solve problems
TECH.8.1.5.D.4	Understand digital citizenship and demonstrate an understanding of the personal consequences of inappropriate use of technology and social media.
TECH.8.1.5.D.CS1	Advocate and practice safe, legal, and responsible use of information and technology.
TECH.8.1.5.D.CS2	Demonstrate personal responsibility for lifelong learning
TECH.8.1.5.D.CS3	Exhibit leadership for digital citizenship.
TECH.8.1.5.F.CS4	Use multiple processes and diverse perspectives to explore alternative solutions
TECH.8.2.5.D.3	Follow step by step directions to assemble a product or solve a problem.
TECH.8.2.5.E.1	Identify how computer programming impacts our everyday lives.
TECH.8.2.5.E.3	Using a simple, visual programming language, create a program using loops, events and procedures to generate specific output.
TECH.8.2.5.E.4	Use appropriate terms in conversation (e.g., algorithm, program, debug, loop, events, procedures, memory, storage, processing, software, coding, procedure, and data).
TECH.8.2.5.E.CS1	Computational thinking and computer programming as tools used in design and engineering.

Student Learning Objectives

Students will learn to:

- use simple visual program language to create a program using loops, events, and procedures to generate a specific output.
- construct an EV3 Rover robot.
- use the action palette to write a program to make a robot display pictures, produce sounds, and display blinking lights.
- use the move steering block to move their robot forward, backward, speed up, slow down, and turn.
- use move steering block for # rotations, time, and degrees.

Essential Questions

1. How can programing be used to make a robot follow a set of directions?

2. How can programming robots be beneficial to people?

Enduring Understandings

Students will understand:

- the importance of trouble shooting.
- how to navigate and use the Lego Mindstorms platform.
- how to create a program, transfer it to a robot, and run the program on the robot.
- how to make adjustments to their robot and their program.

Application

Students will be able to independently use their learning to:

- create a program in Lego Mindstorms.
- connect a robot to a computer and transfer a program to it.
- program a device to carry out a task.
- trouble shoot problems.

Skills

Students will be skilled at:

- creating a working program.
- transferring programs from computer to device.
- running a program on a robot.
- creating a robot designed to complete a specific task.
- modifying programs and robots to meet specific needs.
- utilizing help areas for trouble shooting.