Objective

By the end of this lesson, you will be able to build and program a simple Lego robot using Lego Mindstorms and complete a basic task.

Materials and Prep

- Lego Mindstorms EV3 Set
- Computer with Lego Mindstorms software installed
- Access to Lego Mindstorms online tutorials

Prior knowledge of basic programming concepts and familiarity with Lego building blocks is helpful but not required.

Activities

1. Build a basic robot using Lego Mindstorms EV3 set following the provided instructions.
2. Learn how to connect the robot to the computer and open the Lego Mindstorms software.
3. Explore the software interface and learn about different programming blocks and their functions.
4. Program the robot to move forward for a certain distance and then turn around.
5. Test and debug the program, making necessary adjustments to achieve the desired movement.
6. Challenge yourself by adding additional features to the robot, such as sensors or attachments.

Talking Points

- "Today, we are going to learn about Lego robotics and how to build and program a robot using Lego Mindstorms."
- "Lego Mindstorms is a set of programmable robotics kits that allow us to design and create our own robots."
- "The Lego Mindstorms EV3 set includes building blocks, motors, sensors, and a programmable brick."
- "To start, we will follow the provided instructions to build a basic robot using the Lego Mindstorms EV3 set."
- "Once the robot is built, we will connect it to the computer and open the Lego Mindstorms software."
- "The software provides a visual programming interface where we can drag and drop blocks to create our robot's behavior."
- "We will learn about different programming blocks and their functions, such as moving the robot forward, turning, and using sensors."
- "Our first task will be to program the robot to move forward for a certain distance and then turn around."
- "We will test the program and make any necessary adjustments to ensure the robot moves as intended."
- "Once we have mastered the basic movement, we can challenge ourselves by adding additional features to the robot."
- "For example, we can attach sensors to detect obstacles or create attachments for the robot to interact with objects."
- "Remember, building and programming robots requires patience and problem-solving skills. Don't be afraid to experiment and try different approaches."