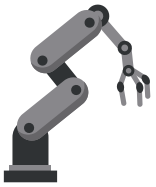
CUBOT Moodle Year Course

LESSON PLAN



TITLE:	**Lesson 2**
LESSON:	**2 / 32**
DURATION:	1h
TOPICS INTRODUCED:	Robotics in the Real World

INTRODUCTION:

By the end of this lesson, students will understand the various categories of robots and where robots are currently being used in the world. Students will also recognize the importance of learning about robotics for their future careers.

Note: This lesson requires an active internet connection for Arduino firmware updates.

RESOURCES REQUIRED:

1. Access to a computer or tablet for video demonstration

LESSON STRUCTURE:

1. Introduction – Cubot & Arduino Uno.
2. Demonstrate a simple circuit.

LESSON 2

1. Introduction (5 minutes)
   - Begin the lesson by discussing the importance of technology in today's world and how robots play a significant role in various aspects of our lives.

2. Robot Categories (10 minutes)
   - Explain that robots can be categorized into different types based on their functions.
   - Introduce the three main categories of robots:
     - Helping People (Prosthetic)
     - Doing Repetitive or Dangerous Jobs (Robot Arms)
     - Exploration (Mars Rovers)

3. Helping People (10 minutes)
   - Focus on the "Helping People" category and discuss how robot limbs (prosthetics) are used to assist individuals who have lost limbs in accidents.
   - Share stories or examples of people benefiting from prosthetic limbs.
   - Emphasize the impact of technology on improving the quality of life for individuals.

4. Doing Repetitive or Dangerous Jobs (10 minutes)
   - Explore the "Repetitive or Dangerous Jobs" category and discuss how robots are employed in factories to perform tasks that are repetitive, precise, or too dangerous for humans.
   - Explain the advantages of using robots in these situations, such as increased efficiency and safety.
   - Provide examples of industries where robot arms are commonly used.

5. Exploration (5 minutes)
   - Discuss the "Exploration" category and mention how robots have been sent to Mars for scientific research and exploration.
   - Introduce Perseverance, the latest Mars rover, and its mission to understand the Martian environment.

6. Advancements in Robotics (5 minutes)
   - Explain that robots are constantly evolving and becoming more advanced.
     - Mention Boston Dynamics and their robots that can perform tasks like walking, jumping, running, and balancing.
   - Show a brief video demonstration of these robots in action if possible.

7. Future Careers (5 minutes)
   - Emphasize that robotics is an exciting field with growing career opportunities.
   - Encourage students to think about their future careers and how technology, including robotics, will play a role in various professions.

8. Discussion and Questions (5 minutes)

- Open the floor for questions and discussion about the different categories of robots and their applications.
- Encourage students to share their thoughts on the future of robotics and its impact on society.

9. Conclusion (5 minutes)
- Summarize the key points of the lesson, emphasizing the importance of learning about robotics for future career opportunities.
- Encourage students to explore robotics as a potential field of interest and study.

Homework/Extension Activity:

- Assign a research project where students choose one of the robot categories discussed in class (Helping People, Repetitive or Dangerous Jobs, Exploration) and investigate a specific robot or technology related to that category. They should present their findings in the next class.

Assessment:

- Assess students' understanding through their participation in class discussions and their engagement in the homework or research project.