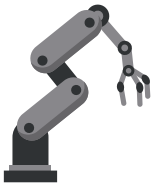
CUBOT Moodle Year Course

LESSON PLAN

TITLE:	**Lesson 0**
LESSON:	**0 / 32**
DURATION:	1h
TOPICS INTRODUCED:	Intro to Robotics



INTRODUCTION:

By the end of this lesson, students will have a basic understanding of what robots are, their history, capabilities, and various applications in today's world and the future.

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

RESOURCES REQUIRED:

1. Whiteboard and markers or a digital presentation tool
2. Images or videos of different types of robots

LESSON STRUCTURE:

1. Introduction – robots.
2. Function of robots.
3. History of robotics.

LESSON 1

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1. Introduction (5 minutes)
   - Begin the lesson by asking students if they have heard of or interacted with robots before.
   - Define a robot as a mechanical machine that is programmed to complete a series of actions.

2. Origins of the Word "Robot" (5 minutes)
   - Share the information that the word "robot" was coined in 1921 from a Czech word, originally meaning "One in subservient behaviour."
   - Discuss briefly how language evolves and adapts to new concepts and technologies.

3. What Humans Can Do That Robots Can't (5 minutes)
   - Explain that while robots can perform many tasks, there are certain abilities that remain unique to humans.
   - List these abilities on the board: create, feel emotion, have morals, make independent decisions.
   - Engage students in a short discussion about why these abilities are challenging to replicate in robots.

4. Walking Like Humans (10 minutes)
   - Discuss the difficulty of making robots walk like humans.
   - Explain that walking is a complex process involving falling and catching oneself, which humans learn over time.
   - Show images or videos of robots attempting to walk and discuss the progress being made in this area.

5. Historical Development of Robots (5 minutes)
   - Briefly mention Al-Jazari's mechanical robots in the 1200s and Leonardo da Vinci's invention in 1495.
   - Highlight the significance of these early developments in robotics.

6. First Humanoid Modern Robot (5 minutes)
   - Introduce Elektro and Sparky, built in 1939, as the first humanoid modern robot.
   - Share some of Elektro's capabilities, such as walking by voice command and speaking 700 words.

7. Applications of Robots Today (5 minutes)
   - Discuss various fields where robots are currently used, such as the military, self-driving cars, space travel, and production of goods.
   - Mention specific examples or advancements in each field.

8. Future Developments in Robotics (5 minutes)
   - Explain that robotics continues to advance, and robots are being developed for even more specialized tasks.
   - Mention the development of nano-robots for medical applications and bionic parts for people with missing limbs.

9. Discussion and Questions (5 minutes)
   - Open the floor for questions and discussion about robots and their role in society.
   - Encourage students to share their thoughts on how robots might impact our lives in the future.

10. Conclusion (5 minutes)
   - Summarize the key points discussed during the lesson.
   - Emphasize the importance of robotics in modern society and the potential for future innovations.

Homework/Extension Activity:
- Assign a research project where students choose a specific type of robot (e.g., surgical robots, agricultural robots) and investigate its history, current use, and potential future developments.