

Unit 2 - Lesson 1: Development of Autonomous Robots



Lesson 1: Development of Autonomous Robots

Time available: 4 hours



Lesson programming:

1. Discussion questions about autonomous robots.
2. Bingo game to study vocabulary.
3. Pre-reading activity: Discuss some vocabulary related to the reading below.
4. Reading comprehension activity: "Evolution of autonomous robots: past, present, and future."
5. Fill in the blank activity: identifying appropriate words or phrases from the text.
6. Quizizz activity based on the text.
7. Fill in the missing information chart.
8. Before the reading activity, explain what the skimming strategy is.
9. Pre-reading activity: Word Cloud.
10. Vocabulary related to robots.
11. Reading comprehension: "Robots: History, Types, and Applications."
12. True or False activity based on the reading text about Robots.
13. Fill in the blank activity based on the reading text about Robots.

Learning materials:

- **Bingo game:** <https://myfreebingocards.com/bingo-card-generator/free/dv2zng8>
- **Reading:** https://drive.google.com/file/d/1wL64dCN-c9liezsMNMugL8TSuBypliTk/view?usp=drive_link Quizizz activity: https://quizizz.com/admin/quiz/6599dee7814da9733df77003?source=quiz_share



Lesson 1: Development of Autonomous Robots

1. Discussion questions:

- What do you think autonomous robots are?
- Can you name any types of robots or their uses that you know of?
- How do you imagine the evolution of robots from the past to the present
- What role do you think robots will play in the future?



2. Bingo game in order to study vocabulary:

- <https://myfreebingocards.com/bingo-card-generator/free/dv2zng8>



3. Pre-reading: Discuss the following keywords

- **Autonomous:** Able to operate independently without human control.
- **Cobots:** Collaborative robots designed to work alongside humans.
- **Industrial Robots:** Machines used in manufacturing and production environments.
- **Automation:** The use of largely automatic equipment in a system of operation.
- **AGVs (Autonomous Guided Vehicles):** Mobile robots used for transport in various environments.
- **Machine Learning:** A type of AI that allows software to become more accurate in predicting outcomes without being explicitly programmed.
- **Manufacturing:** The process of making products, especially with machines in factories.
- **Warehouse Operations:** Activities involved in managing the storage and movement of goods in a warehouse.
- **Computer Vision:** The ability of machines to interpret and understand visual information from the world.
- **Force-Limited Joints:** Mechanisms in robots that limit the force they can exert, making them safer to work with.



4. Reading: "Evolution of Autonomous Robots: Past, Present and Future."

- **Reading document:**

https://drive.google.com/file/d/1wL64dCN-c9liezsMNMugL8TSuBypliTk/view?usp=drive_link

- **Activity:**

https://drive.google.com/file/d/1J-uUBoS3JcruN3rcIcb8ixUW18A0-YC7/view?usp=drive_link

8. Explain what the Skimming Strategy is

Skimming Strategy:

Skimming is a reading technique that involves quickly moving through a text to get a general overview of the content rather than focusing on detailed comprehension. This strategy allows readers to cover a large amount of material in a short amount of time.

When to Use Skimming:

1. **Previewing:** Before delving into a detailed reading of a text, to get a sense of what it's about.
2. **Time Constraints:** When you have limited time to read and need to grasp the main points quickly.
3. **Reviewing:** To quickly review a text you've already read in detail to reinforce your understanding.
4. **Research:** When looking for specific information or trying to determine if a text is relevant to your needs.
5. **General Overview:** To get a basic understanding of a text when detailed comprehension is not necessary.

How to Use Skimming:

1. **Read the Title and Headings:** Start by looking at the title, headings, and subheadings to get an idea of the main topics covered in the text.
2. **Look at the Introduction and Conclusion:** Often, the introduction and conclusion of a text will summarize the main points.
3. **Focus on the First Sentences of Paragraphs:** The first sentence often introduces the main idea of a paragraph.
4. **Notice Keywords and Phrases:** Keep an eye out for bold or italicized words, bullet points, and any repeated phrases or concepts.
5. **Pay Attention to Visuals:** Graphics, charts, and pictures can provide important information and context.
6. **Speed Over the Text:** Let your eyes move rapidly over the text, not stopping to read each word or sentence in detail.



How to Apply Skimming Reading Strategy:

1. **Set Your Purpose:** Know why you are skimming the text. Are you looking for a general idea, specific information, or trying to decide if the text is useful for your research?
2. **Adjust Your Speed:** Be flexible with your reading speed. Slow down slightly for more important sections and speed up over less relevant parts.
3. **Practice Regularly:** Like any skill, skimming improves with practice. Regularly incorporate skimming into your reading habits.
4. **Take Brief Notes:** Jot down main ideas or keywords as you skim. This helps in retaining important information.
5. **Review After Skimming:** Once you've skimmed the text, take a moment to summarize the main points in your mind or out loud to reinforce comprehension.



9. Pre-reading activity 2

- Teacher: Go to Mentimeter and create a Word Cloud activity. Include a prompt question to motivate learners participation: What comes to your mind when you hear or read the word ROBOT?
- Learners must include 1 or 2 words.
- Teacher: share the results with the whole class.

10. Socialize the following keywords

- **Programmed:** Set up to operate in a particular way.
- **Sophisticated:** Advanced, complex.
- **Czech:** Relating to the Czech Republic in Central Europe.
- **Science fiction:** A genre of speculative fiction.
- **Rebel:** To resist or defy authority or control.
- **Automotive:** Relating to vehicles and their construction.
- **Types:** Varieties or categories.
- **Industrial robots:** Robots used in manufacturing processes.
- **Service robots:** Robots that assist humans in various tasks.
- **Autonomous:** Operating independently without human control.



- **Healthcare:** Related to the health services and industries.
- **Rehabilitation:** The process of restoring health or normal life through training and therapy.
- **Security:** Protection against danger or harm.
- **Productivity:** The effectiveness of productive effort.
- **Quality of life:** The standard of health, comfort, and happiness experienced by an individual or group.
- **Safety:** The condition of being protected from danger or harm.
- **Innovative:** Featuring new methods; advanced and original.
- **Convenient:** Fitting in well with a person's needs, activities, and plans

11. Reading and activity about "Robots: History, Types, and Applications."

- **Reading document:**

https://drive.google.com/file/d/1J_hfg30zvjH3vj2DpicCYzOH1MUEeQsV/view?usp=drive_link

- **Activity:**

https://drive.google.com/file/d/1z4vuW5_6XB1zdJBIawZcqlqOoIydDOVd/view?usp=drive_link

