INTRODUCTION TO ARTIFICIAL INTELLIGENCE (AI)
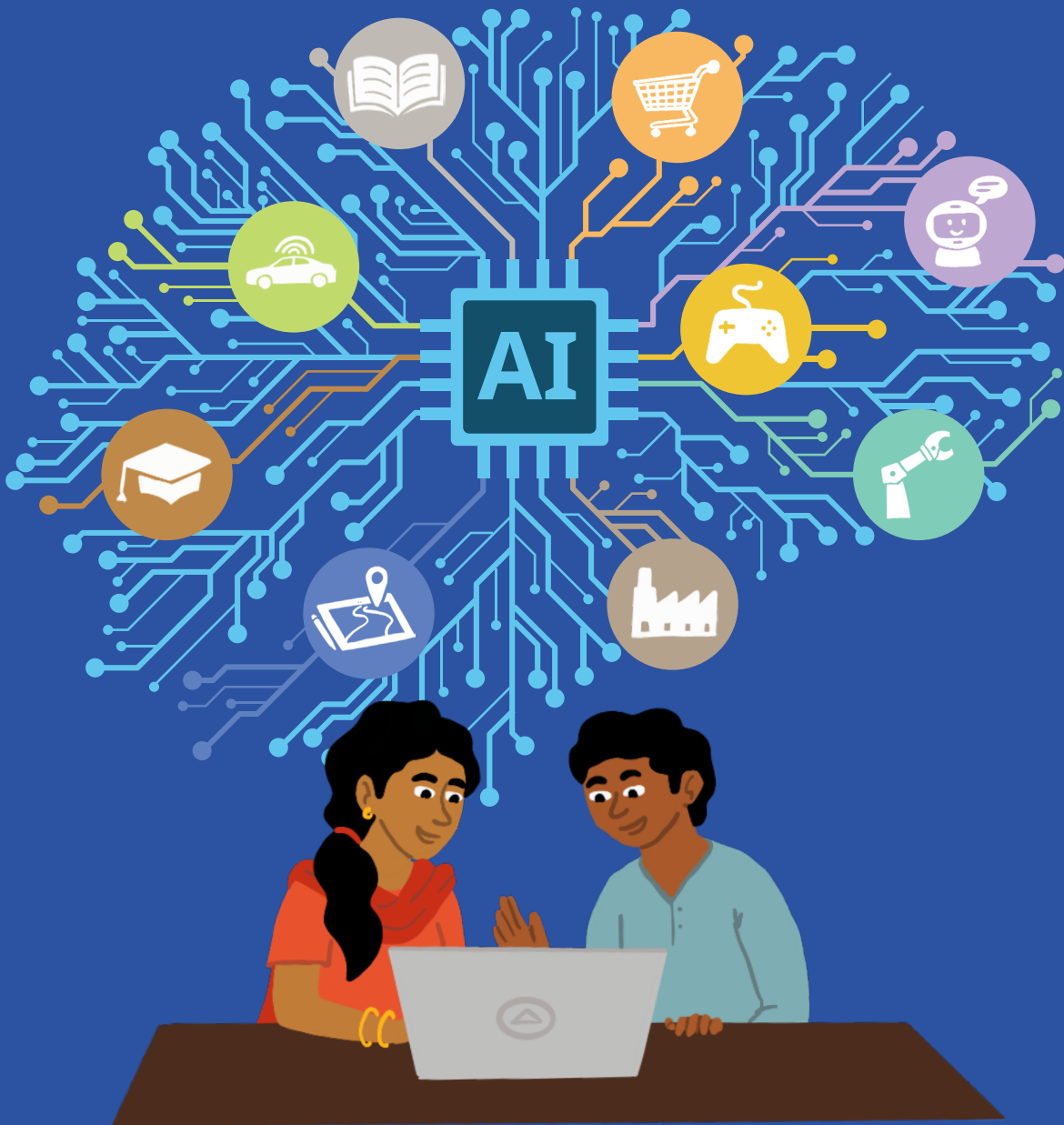
Student Workbook

Year 1 | 2024
Total : 7.5 Hours

Student Workbook Index

Acknowledgements

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Welcome Page

Dear Learner,

Welcome to an exciting journey into the world of Artificial Intelligence (AI)!
This workbook is designed to help you understand what AI is, how it works, and how it's changing the world around us.

What You'll Learn:
1. What is AI?
2. How to use AI for learning and career development
3. How to use AI responsibly

This workbook will guide you through learning about AI, applying it in practical ways, and preparing for future opportunities. You will build knowledge and skills to understand and work with AI in various aspects of life and career.

Complete interactive tasks, participate in discussions, and group projects to apply what you've learned. This workbook aims to make you a self-learner and ready for the exciting opportunities AI brings to your career.

Remember, AI is a tool that we can use to make our lives better, and with great power comes great responsibility. Let's explore, learn, and use AI wisely together!

Happy Learning!
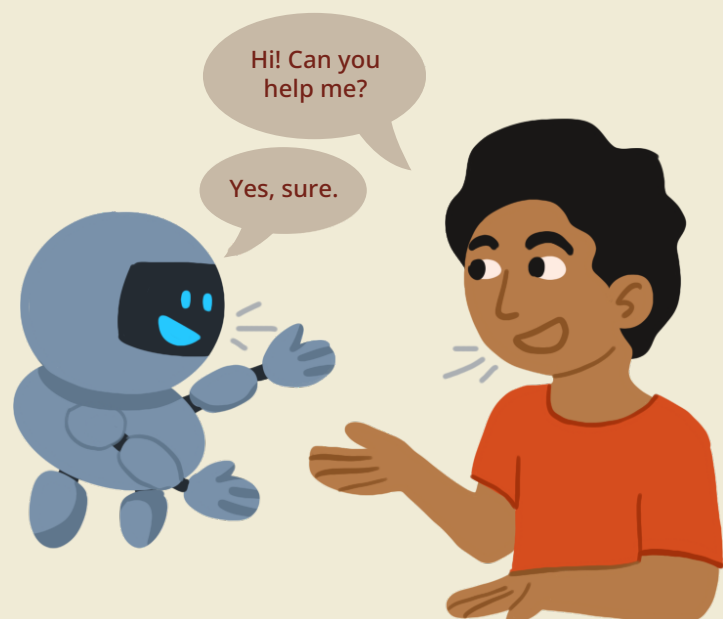
Introduction to Artificial Intelligence (AI)

13.1 Understanding AI

In this lesson, you will learn:

1. What is AI?
2. Where do you find AI?
3. What is not AI?
4. Using AI tools to find answers to questions using prompts

Hi! You know, this new song I found on YouTube is so cool! It was in my recommendation section.
I think AI suggested it, based on my search history!

You do know about AI, right? Yes?! No?!
Let's learn about it in detail so we can use it better!

Have you heard of AI?

Take a few minutes to think about what you already know about Artificial Intelligence (AI). Have you heard of it before? If yes, what do you know about it? If not, what do you think it means? Write down your thoughts in the space below:

If yes, _____

_____

If no, _____

_____

13.1.1 Where have you seen or used AI?

Can you think of any AI applications that you have used? Think and answer!

AI is the science of creating intelligent machines, like computers or robots, that can think, learn from data, and solve problems on their own, almost like us humans.

If you cannot think, no problem! Look at the list below and put a tick next to the applications you use or have used in the past:

☐ YouTube	☐ Instagram	☐ amazon.com
☐ NETFLIX	☐ Facebook	☐ Google Maps

All these applications use AI. Do you know how AI is used in each of them?

Match the apps listed in Column A with how they use AI, as listed in Column B.

YouTube uses AI to suggest videos you might like, create subtitles, and show ads based on your interests.

Column A	Column B
1. Instagram	A. Suggests movies and TV shows you might enjoy.
2. Amazon	B. Suggests things you might like to buy.
3. Netflix	C. Helps you find friends, and shows ads that match your interests.
4. Facebook	D. Helps you find the best way to reach places quickly.
5. Google Maps	E. Shows posts and reels based on your interests.

13.1.2 What is not AI?

Given below are 6 examples. Put a tick (✓) if you think it is an example of Artificial Intelligence (AI) and a cross (✗) if it is not an example of AI.

Examples	AI (✓) or NOT (✗)
1. A digital clock showing the current time	
2. A smartphone that suggests words while you type a message	
3. A mobile app that suggests movies based on what you watched before	
4. A calculator doing math when you enter numbers	
5. An app that helps you find out plant diseases by taking a photo of the plant	
6. A refrigerator that keeps your food cold	

Tips:

Pay close attention to each example. There may be clues that can help you guess if AI is used.

Machines that can learn and get smarter over time are AI, while machines that follow set rules without learning are not AI.

Discussion time:

In pairs, discuss with your partner the following questions:

- Which examples did you choose as AI, and why?
- Which examples did you not choose as AI, and why?
- Did the quiz change your understanding of what AI is?

Task: Now that you have seen some examples of AI, can you tell what AI is? You can write, draw, or use AI tools as well - be creative!

Instructions: Use an AI tool such as Microsoft Copilot or ChatGPT to help you write the answers in the space below. (You can use the given prompt to ask questions to the AI tool.)

Prompt for AI Tools	Explain AI in simple words and give examples.

Prompts are instructions or questions you give to AI tools like ChatGPT or Microsoft Copilot. They use prompts to understand what you want, and then give you an answer. So, the better your prompt, the better their response!

Remember: Sometimes, prompts are not enough or may not produce the desired output. In such cases, additional prompts may be neccessary to improve the response.

Note: AI is not like human intelligence. It does not think or feel emotions. It's made by humans and gets better as it learns from its experiences.

Task: Find out how AI helps in hospitals and schools. Complete the sentences below.

Instructions: Use an AI tool such as Microsoft Copilot or ChatGPT to help you write the answers in the space below. (You can use the prompts given below to ask questions to the AI tool.)

Prompt for AI Tools	Explain in simple terms how Artificial Intelligence (AI) helps in hospitals and schools, providing examples for clarity.

In hospitals, AI helps in _____

_____

_____

In schools, AI helps in _____

_____

_____
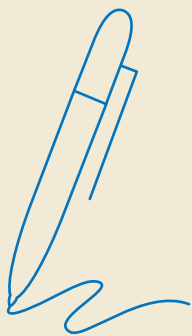
What I learnt today:

Put a ✓ if you know this topic well.

1. AI is the science of creating intelligent machines.

2. Machines that can learn and get smarter over time are AI, while machines that follow set rules without learning are not AI.

3. AI is everywhere, and we use AI applications every day.

Learn More

Check out the digital lesson:
Understanding AI

Talk to a friend/ family member about AI: Share what you learned with a friend or family member.

Try using AI tools: Experiment with free AI tools to see how they work:

- Microsoft Copilot: https://www.bing.com/chat
- Gemini: https://gemini.google.com/
- ChatGPT: https://chatgpt.com/

Ask questions: If you have questions about AI, ask your teacher or classmates and learn from each other.

Answer Key for Activities:

13.1.1: Do you know how AI is used in each of them?
Match the apps to how they use AI

1. Instagram - E
2. Amazon - B
3. Netflix - A
4. Facebook - C
5. Google Maps - D

13.1.2: AI or NOT?

Examples	AI or NOT	Reason
1.	✗	A digital clock just shows the time based on set steps. It does not learn or make decisions.
2.	✓	A smartphone learns and guesses what word you want to type next based on your typing habits.
3.	✓	A mobile app uses AI to suggest movies you might like based on your past choices.
4.	✗	A calculator only does math. It does not learn, recognize patterns, or behave intelligently.
5.	✓	The app uses AI to analyze the photo and identify possible plant diseases.
6.	✗	A refrigerator cools the food without any smart thinking.

13.2 How does AI work?

In this lesson, you will learn:

1. How does AI work?
2. What is data and why is it important?
3. How AI learns from data: Machine Learning vs. Deep Learning

Solving the Case with Data!

Imagine you are a detective trying to solve a robbery.

- Case 1: You have no information about the crime scene.
- Case 2: You find some fingerprints at the crime scene.
- Case 3: You find fingerprints on the locker and the CCTV recording of the place.

Just like a detective needs clues or information to solve a case, AI needs data to learn and make correct decisions.

In which case would it be easier to catch the robber, and why?

- Case 1, because no information makes it simpler to find the robber.
- Case 2, because just fingerprints are enough to identify the robber.
- Case 3, because fingerprints and CCTV recordings give more clues to identify the robber.

13.2.1 How does AI work?

The AI Magic of YouTube: We know that YouTube uses AI to suggest videos you might like. But how does YouTube decide which videos to show you and your friends? Select the correct answer.

A. It shows videos randomly.

B. It asks your friends what you like.

C. It looks at what videos you have watched before.

D. It shows only the most popular videos.

What types of data do you think YouTube is using? Select all that you think is correct.

- ☐ Your watch history (videos you have watched before)
- ☐ Your search history (what you have searched for)
- ☐ Your liked videos (videos you have given a thumbs up to)
- ☐ Your comments on videos
- ☐ The time you spend watching videos
- ☐ The time of day you usually watch videos
- ☐ The device you are using to watch videos

Data can be anything from text messages and social media posts to photos and music - any kind of information that can be collected.

Read each statement below. If the statement is correct, circle 'True', and if the statement is incorrect, circle 'False'.

1. YouTube's suggestions remain the same whether you are signed in or not. **True or False**

2. The change in YouTube's suggestions when signed in shows that AI depends a lot on user data. **True or False**

YouTube's AI learns from data like your watch history and more to guess what videos you will like. Signed-in users get better suggestions because the AI has more data about them.

13.2.2 What is data, and why is it important?

AI needs data to learn and make smart decisions for many everyday apps.

Task: Think of everyday situations where data is used.

- How does a weather app predict the weather?
- How does Instagram suggest reels for you?

For each, find out: the types of data collected, how this data is used and why it is helpful.

Instructions: Use an AI tool such as **Microsoft Copilot or ChatGPT** to help you write the answers in the table below.

(You can use the given prompts to ask questions to the AI tool.)

Prompt for AI Tools	1. Could you please explain in simple terms how a weather app predicting the weather works? Please identify the types of data collected, how this data is utilized, and why it's valuable for predicting the weather.
	2. Could you please explain in simple terms how Instagram suggests reels to users? Please identify the types of data collected, how this data is utilized, and why it's valuable for suggesting reels.

Remember: Sometimes, prompts are not enough or may not produce the desired output. In such cases, additional prompts may be neccessary to improve the response.

Write down your findings and share them with the class.

Find out	1. How weather app predicts weather	2. How Instagram suggests reels
What data is collected?		
How is the data used?		
Why is this data helpful?		

13.2.3 How AI Learns from Data: Machine Learning vs. Deep Learning

In our journey through AI, we learned that AI learns from data. But the question is, how does AI learn?

You may have heard of 'Machine Learning' and 'Deep Learning.' These are the special ways AI learns from data.

	Machine Learning (ML)	Deep Learning (DL)	
	Think of ML as someone learning to cook with a recipe book. Follow steps **(algorithms)** and use ingredients **(data)** to make a dish **(output)**.	You are an experienced chef, who learns to cook by taste and experimentation. You do not need a recipe book; instead, you experiment with different ingredients and techniques to create new dishes.	
	The more recipes you try, the better you get at cooking **(suggesting).**	This is DL, where the system **learns from a large amount of data,** finding patterns and making decisions without specific instructions.	

Fill in the blanks:

Artificial Intelligence
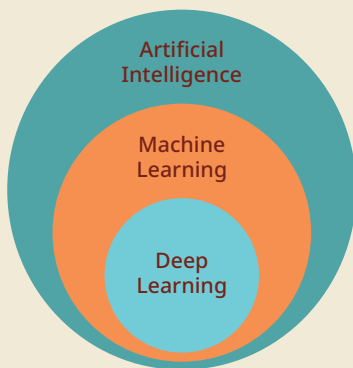
Machine Learning

Deep Learning

1. Machine learning (ML) teaches computers to learn from _____ and make decisions.

2. In Deep Learning (DL), the computer learns by finding _____ in large amounts of data.

3. _____ is an advanced technique within _____, which itself is a part of AI (Artificial Intelligence).

Task: Complete the following table.

Instructions: Use an AI tool such as Microsoft Copilot or ChatGPT to help you write answers in the table below. (You can use the given prompt to ask questions about the AI tool).

Prompt for AI Tools	Explain Machine Learning (ML) and Deep Learning (DL) in simple terms. Create a detailed comparison table using features such as Learning Style, Data Dependence, Training Time, and Applications, using clear and easy-to-understand language.

Comparison Table

Feature	Machine Learning	Deep Learning
Learning Style How does ML/DL learn from data?		
Data Dependence How much data is needed to work well?		
Training Time How long does it take to train models?		
Applications Where is it commonly used?		

Task: Find out how Netflix or Amazon Prime Video use ML and DL.

Instructions: Use an AI tool such as ChatGPT or Microsoft Copilot to help you complete the sentences below.

Some applications use both ML and DL

Example: Facebook uses Machine Learning to organize what users see in their feed, and deep learning to recognize images and suggest tags for them.

*"Tags" are labels suggested by Deep Leaning to identify images.*

Prompt for AI Tools

Describe how Netflix and Amazon Prime Video use Machine Learning (ML) and Deep Learning (DL) in a simple way and a few lines. Separate your description for each platform, and explain how ML and DL are used in each one.

Netflix or Amazon Prime Video use ML to _____

_____

Netflix or Amazon Prime Video use DL to _____

_____
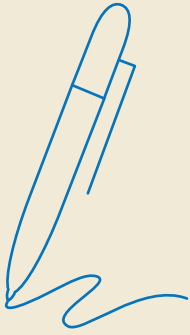
What I learnt today:

Put a ✓ if you know this topic well.

1. Machine Learning follows steps, while Deep Learning learns like humans do. ☐

2. AI learns from data, and the more data it has, the better decisions it can make. ☐

3. Machine Learning (ML) teaches computers through examples. ☐

4. Deep Learning (DL) finds complex patterns in large amounts of data. ☐

5. AI is a big field, Machine Learning learns from data (within AI), and Deep Learning is an advanced method of learning (within Machine Learning). ☐

6. Applications can use Machine Learning (ML), Deep Learning (DL), or both, depending on what they need to do. ☐

Learn More

Check out the digital lessons:
- How does AI work? - 1
- How does AI work? - 2

Talk to a friend/ family member about AI: Share what you learned with a friend or family member.

Try using AI tools: Experiment with free AI tools to see how they work:
- Microsoft Copilot: https://www.bing.com/chat
- Gemini: https://gemini.google.com/
- ChatGPT: https://chatgpt.com/

Ask questions: If you have questions about AI, ask your teacher or classmates and learn from each other.

Answer Key for Activities:

Solving the Case with Data!
Case 1, because no information makes it simpler to find the robber.
This is wrong because no information means no clues to follow, making it difficult to find the robber.
Case 2, because just fingerprints are enough to identify the robber.
This is wrong because just fingerprints might not be enough to be sure who the robber is.
Case 3, because fingerprints and CCTV recordings give more clues to identify the robber.
This is correct because more clues mean a better chance of catching the right person.

13.2.1 The AI Magic of YouTube
Answer: C. It looks at what videos you have watched before.

13.2.1 What types of data do you think YouTube is using?
All are correct. YouTube uses all the data points to learn about you as a user.

13.2.1 True or False.

1. YouTube's suggestions remain the same whether you are signed in or not. **Answer: False**
2. The change in YouTube's suggestions when signed in shows that AI depends a lot on user data. **Answer: True**

13.2.3 Fill in the blanks:

1. Machine learning (ML) teaches computers to learn from **data** and make decisions.
2. In Deep Learning (DL), the computer learns by finding **patterns** in large amounts of data.
3. **Deep learning** is an advanced technique within **machine learning**, which itself is a part of AI (Artificial Intelligence).

13.3 Types of AI

In this lesson, you will learn:

1. Types of AI: Narrow and General
2. History of AI

AI in Action!

We learned about many apps that use AI in the previous two chapters. However, many more apps use AI. Here is a list.

I use YouTube to study my math lessons and listen to songs some times.

I wonder if YouTube can set reminders for me, send emails and also make notes.

How many have you used?

Tick them and write what tasks they can do next to each one.

- ☐ Google Translate: Translates text and speech between different languages.
- ☐ Google Assistant
- ☐ Spotify
- ☐ Snapchat
- ☐ Grammarly
- ☐ Duolingo
- ☐ Shazam
- ☐ Ola or Uber
- ☐ Amazon Alexa
- ☐ Flipkart

Discussion Time:

Are these apps good at every type of task, like playing music, suggesting things, or setting reminders, or are they just good at specific tasks? Write your thoughts in the box below.

You might have noticed that each of these apps uses AI to perform specific tasks well, like suggesting songs, translating languages, or finding the best route in traffic. This brings us to an important concept in AI: the difference between Narrow AI and General AI.

AI applications are here to help us with many things, but they are still getting better and are best at certain tasks only.

13.3.1 What is Narrow and General AI?

Task: Complete the following table.

Instructions: Use an AI tool such as Microsoft Copilot or ChatGPT to help you write the answers in the table below. (You can use the given prompt to ask questions to the AI tool.)

Prompt for AI Tools	Explain Narrow AI and General AI. Use easy-to-understand language and find examples to help explain each type.

Remember: Sometimes, prompts are not enough or may not produce the desired output. In such cases, additional prompts may be neccessary to improve the response.

Comparison Table

Types of AI	Description	Example
Narrow AI		
General AI		

Choose the correct option for each of the following examples:

1. An application that plays chess at a world-class level but cannot do anything else.
    (Narrow AI /General AI)
2. A language translation app that translates text from one language to another. **(Narrow AI /General AI)**
3. A voice assistant like Siri or Alexa can set reminders, play music, and answer questions.
    (Narrow AI /General AI)

Imagine you are in a big library, but you need help finding the book you need! There are two robots:

ROBOT 1: Searches books by title.

ROBOT 2: Searches books by title, author, and description.

Can you guess which is Narrow AI and which is General AI?

Scientists are still working on making General AI, and it has not been created yet.

Robot 1 is _____

because _____

Robot 2 is _____

because _____

13.3.2 History of AI

Task: Fill in the timeline provided below with important events in the history of AI.

Instructions: Use an AI tool such as Microsoft Copilot or ChatGPT to help you write the answers in the table below. (You can use the given prompt to ask questions to the AI tool.)

Prompt for AI Tools	Explain AI's journey from the past to now: its milestones, challenges, impacts, and future possibilities from the year 1950 to present.

Complete the timeline

1950
The birth of AI

Scientists began talking about "Artificial Intelligence," which means making machines that can copy human intelligence.

1960s - 1970s
Chatbots and more

_____

_____

1980s - 1990s
A slow period

_____

_____

2000
AI starts to bloom

_____

_____

2010 to now
Rapid Improvements

_____

_____
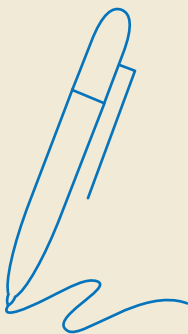
What I learnt today:

Put a ✓ if you know this topic well.

1. Narrow AI is good at doing one thing well. ☐

2. General AI can do many different things but is not ready yet. ☐

3. AI has affected many parts of our lives, like medicine and transportation. ☐

Learn More

Check out the digital lesson:
Types of AI

Talk to a friend/ family member about AI: Share what you learned with a friend or family member.

Try using AI tools: Experiment with free AI tools to see how they work:
- Microsoft Copilot: https://www.bing.com/chat
- Gemini: https://gemini.google.com/
- ChatGPT: https://chatgpt.com/

Ask questions: If you have questions about AI, ask your teacher or classmates and learn from each other.

Answer Key for Activities:

13.3.2: Choose the correct option for each of the following examples:
1. Narrow AI
2. NarrowAI
3. NarrowAI

13.4 What can AI do?

In this lesson, you will learn:

1. What is Generative AI, and how does it affect us?
2. How to talk to AI
3. Uses of Generative AI in various fields of work

Imagine you have a magical tool that can easily create anything —a painting, a song, or a story. What would you ask this tool to create for you right now?

☐ A painting   ☐ A song   ☐ A story
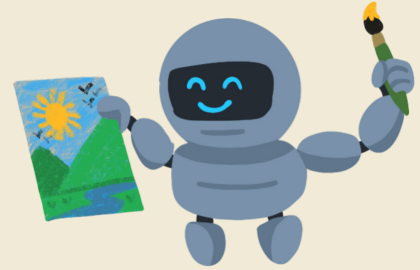
How do you think it would change the way you come up with new ideas and make things?

1. I would be more creative and could try new things.
2. I would work faster with the help of tools.
3. I would learn and get better at making things.
4. I might become lazy because I don't have to do the work myself.

Now that we have talked about how a magical tool can help you create things and work better, let's learn about a real technology that can do this. It's called generative AI.

13.4.1 What is generative AI?

Task: Find out what generative AI is and the difference between AI and generative AI. Understand why everyone is talking about it and how it could affect the future.

Instructions: Use an AI tool such as Microsoft Copilot or ChatGPT to help you write the answers in the space below. (You can use the given prompt to ask questions about the AI tool.)

Prompt for AI Tools	Explain what generative AI is and how it differs from regular AI. Discuss why many people are interested in generative AI and how it might affect the future. Please explain in the simplest way using examples.

Generative AI is a type of AI that can create new things like images, music, text, and learning materials.

Unlike traditional AI that learns from existing data, generative AI creates new content by learning from what it has seen before.

Now that you have learned about Generative AI creating new things like images and videos, let's test your understanding of Generative AI.

Read each statement below. If the statement is correct, circle 'True', and if the statement is incorrect, circle 'False'.

1. Generative AI can create pictures and content. **True or False**
2. Generative AI can help solve math problems and find answers. **True or False**
3. Generative AI cannot understand or speak different languages. **True or False**
4. Generative AI can make unique and new videos from words, images, or short video clips. **True or False**

To use Generative AI, we need to learn how to talk to the tools that use this technology. Let's learn how to do that.

13.4.2 How to talk to AI tools

This is a skill where you write clear and detailed instructions to tell AI what to create or how to answer. These instructions are called prompts.

Let us understand with the help of an example:

Base Prompt or Prompt: *"Write a poem about the rainy season."*

A base prompt, also called a prompt, is the first instruction you give to the AI, telling it what you want. But sometimes, the result might not be exactly what you want—for example, it could be too long or not easy to understand. To make it better, you can give follow-up prompts.
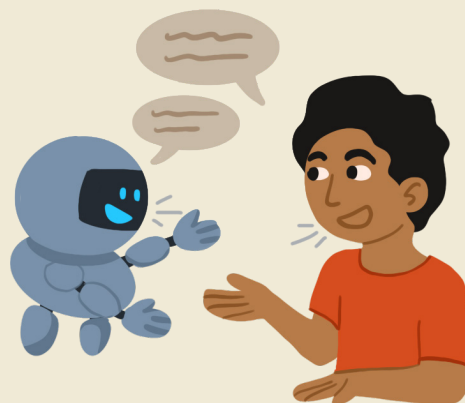
Follow-up Prompt: *"Make the poem 10 lines long, add rhymes, and make it easy for kids aged 8-14 years".*

A follow-up prompt is an extra instruction or question you give to AI after the base prompt. It helps the AI understand more about what you want and how to improve its answer. You can keep giving follow-up prompts until the result matches what you need, improving what you create.

You can try these prompts in AI tools and see the result.

Base prompt: *How can I learn to speak English?*

Follow-up Prompt: *I have a smartphone. Can you suggest an online app or website to learn English?*

Follow-up Prompt: *What are some daily practices that can help someone improve their English speaking skills?*

> **Task:** Use an AI tool such as ChatGPT or Microsoft Copilot to generate responses based on the given prompts, create your own follow-up prompts, and write down the prompts you have used.
>
> **Base Prompt:** Hi! Let's practice some English conversation.
>
> **Follow-up Prompt:** Could we have a conversation as if you're my buddy teaching me English? Let's chat about something fun or interesting!
>
> **Follow-up Prompt:**

Follow-up Prompt:

Good vs. Bad Prompts:

A good prompt tells the AI exactly what to do and gives all the important details. On the other hand, bad prompts are unclear or contain information that does not make sense for the task. This confusion can cause the AI to give wrong answers.

Suppose you want to prepare Pav Bhaji for 4 people, and you decide to use AI tools for the recipe. You provide the prompt: *"Tell me how to cook."*

Is this a good or bad prompt? Please give reasons for your answer.

Answer:

Bad prompt because the prompt is not clear. It does not say what to cook or how to cook it, so the AI may not know what information to provide.

Now, consider if you provide this prompt: *"Could you share an easy-to-follow recipe for Pav Bhaji, including instructions for cooking the bhaji and preparing buttered pav? It should be suitable for serving four people.".*

Is this a good or bad prompt? Please give reasons for your answer.

Answer:

Good prompt because is clear and specific. it asks for a recipe for Pav Bhaji, specifies that it should be easy, and mentions that it is for four people. It also asks for details on cooking the bhaji and preparing the pav, which helps the AI understand what information is needed.

Now that you have learned about the prompt, let's test your understanding with the following activity.

Choose the correct option for each of the following examples.

1. Explain. (good prompt /bad prompt)
2. What's the capital? (good prompt /bad prompt)
3. Do something? (good prompt /bad prompt)
4. Can you suggest ways to manage stress while studying for exams? (good prompt /bad prompt)

13.4.3 What Generative AI can do
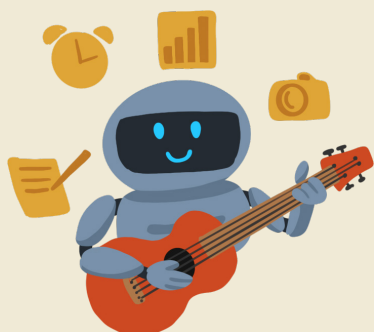
Generative AI tools can create images, write essays and scripts, compose music, and create videos. There are both free and paid tools available for each of these tasks, helping people in different fields to be faster and smarter in their work.

To find free AI tools use the following prompt:

Prompt for AI Tools	Can you suggest free AI tools that I can use for creating content, images, music, and videos?

Task: Imagine you are a YouTuber and want to make a video for your channel. You can use AI tools to create content, images, and music. Work in a group to complete the task and share your creation in the next class.

Instructions:

For textual content creation, use a content creation AI tool like ChatGPT.

For image creation, use AI tools such as Microsoft Copilot or Artbreeder.

For music composition, use AI tools such as Beatoven to compose music for your video.

For video editor, combine images, your composed music, and written content into a single video presentation using tools like VN editor.
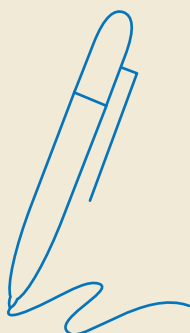
What I learnt today:

Put a ✓ if you know this topic well.

1. Generative AI learns from what it already knows to create new things. ☐

2. AI-powered tools help with art, writing, music, and making videos. ☐

3. Some popular Generative AI tools are ChatGPT for writing, Gemini and Craiyon for pictures, Beatoven for music. ☐

Learn More

Check out the digital lessons:
- What can AI do?
- How to talk to AI?

Talk to a friend/ family member about AI: Share what you learned with a friend or family member.

Try using AI tools: Experiment with free AI tools to see how they work:
- Microsoft Copilot: https://www.bing.com/chat
- Gemini: https://gemini.google.com/
- ChatGPT: https://chatgpt.com/

Ask questions: If you have questions about AI, ask your teacher or classmates and learn from each other.

Answer Key for Activities:

13.4.1 Read each statement below. If the statement is correct, circle 'True', and if the statement is incorrect, circle 'False'.

1. Generative AI can create pictures and content.
    Answer: True
2. Generative AI can help solve math problems and find answers.
    Answer: True
3. Generative AI cannot understand or speak different languages.
    Answer: False
4. Generative AI can make unique and new videos from words, images, or short video clips
    Answer: True

13.4.2 Choose the correct option for each of the following examples:

1. Explain.
    Answer: Bad prompt because it's too short and unclear. It's hard for AI to give a good answer with such little information.
2. What's the capital?
    Answer: Bad prompt because it's not specific enough; it does not say which capital you mean. It needs more details to be clear. (e.g., capital of a country, state, etc.).
3. Do something?
    Answer: Bad prompt because it's not a complete sentence and does not tell AI what to do.
4. Can you suggest ways to manage stress while studying for exams?
    Answer: Good prompt because the prompt is clear and specific, making it easy to give a good answer.

13.5 Impact of AI on Jobs and Industries

In this lesson, you will learn:

1. How AI is impacting jobs and industries
2. Advantages and disadvantages of AI at work

The Rise of AI in the Workplace!

Imagine walking into a canteen, picking up a samosa and a cold drink, and then just leaving without standing in line to pay. No waiting, no paying at the counter—just you and your food items. This sounds like something from the future, right? But did you know this is already happening in some places, like Amazon Go stores, where AI allows people to shop without cashiers?

Discussion Questions:

Do you think shopping without cashiers is a good idea? Why or why not?

_____

_____

What jobs might be affected if stores use AI for shopping?

_____

_____

What new jobs or opportunities could the use of AI in stores create?

_____

_____

13.5.1 How AI is impacting jobs and industries

Imagine working in your chosen job, whether it's as an electrician, welder, carpenter, mechanic, or in any other role.

How do you think AI can help you in that job or impact the way you work?

Find an answer to the above question: Here is an example to help you understand.

List Tasks	AI's Role	Discussion
Write down the tasks you will be doing in the job you have selected. For example, mechanics fix vehicles and do repairs.	How can AI impact this job? For example, in mechanics, AI can predict maintenance needs.	Discuss with your friends how AI could help you in your job. Do you think AI will make it better? Explain why or why not.

Do you have the answer yet? If not, do not worry. Let's use AI tools to find it. Use the prompt given below in an AI tool like Microsoft Copilot or ChatGPT and complete the table using the answer you get from the AI tool.

Fill in the blank with a job role in your trade.	
Prompt for AI Tools	Write down the tasks humans do as a _____. How can AI impact this job? Will AI make this job better or replace some parts of it?

Job: _____

List Tasks	AI's Role	Discussion

13.5.2 Advantages and disadvantages of AI at work

**Read each statement below and decide if it is an Advantage or a Disadvantage of AI.
Write "A" for Advantage and "D" for Disadvantage.**

Statements:

1. AI can take over boring, repetitive tasks.
2. It can be costly to implement.
3. AI can help make decisions faster.
4. It can lead to job loss for some people.
5. AI can work 24/7 without getting tired.
6. It may make mistakes if it's not programmed correctly.
7. AI can analyze large amounts of data quickly.
8. It may require a lot of maintenance and updates.

Task: Write down the advantages and disadvantages of the job you have chosen.

Instructions: Use an AI tool such as ChatGPT or Microsoft Copilot to help you write the answers in the space below. (You can use the given prompt to ask questions to the AI tool.)

Prompt for AI Tools	What are the advantages and disadvantages of using AI for _____ jobs?

Advantages _____

_____

Disadvantages _____

_____

How do you feel about AI?

Take a moment to think about what you have learned about how AI is impacting jobs and industries. Choose one or more emotions or words that best describe how you feel about this topic. Circle them.

Excited	Curious	Confused	Worried
Inspired	Uncertain	Interested	Anxious
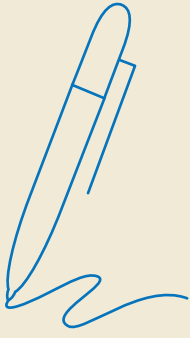
What I learnt today:

Put a ✓ if you know this topic well.

1. AI is impacting the way we work, such as shops without cashiers.

2. AI has both advantages and disadvantages, so it's important to use it wisely.

Learn More

Check out the digital lesson:
Impact of AI on Jobs and Industries

Talk to a friend/ family member about AI: Share what you learned with a friend or family member.

Try using AI tools: Experiment with free AI tools to see how they work:
- Microsoft Copilot: https://www.bing.com/chat
- Gemini: https://gemini.google.com/
- ChatGPT: https://chatgpt.com/

Ask questions: If you have questions about AI, ask your teacher or classmates and learn from each other.

Answer Key for Activities:

13.5.2 Advantages and disadvantages of AI at work
1. A
2. D
3. A
4. D
5. A
6. D
7. A
8. D

13.6 Exploring Careers with AI

In this lesson, you will learn:

1. How to explore career options with AI

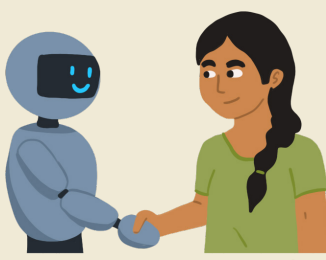**Do you think AI can help you find career options that match your interests and qualifications? Write your thoughts here.**

_____

_____

13.6.1 Exploring Career Options with AI

Task: Find career options that match your interests and qualifications.

Instructions: You will use an AI tool such as ChatGPT or Microsoft Copilot to find 10 suitable career options.

Use the prompt given below. Remember to fill in the blanks in the prompt with your details before asking the AI tool.

Prompt for AI Tools	Hello! I am _____ years old and currently living in _____ state in India. My interests include _____. I am currently pursuing a _____ course at ITI. Based on this information, could you suggest 10 suitable career options that match my interests and qualifications? Please provide conventional and creative options separately. Keep the answer brief.
	Example: Hello! I am **18** years old and currently living in **Gujarat**, India. My interests include **reading, drawing, and learning new things.** I am currently pursuing an Electrical course at ITI. Based on this information, could you suggest 10 suitable career options that match my interests and qualifications? Please provide conventional and creative options separately. Keep the answer brief.

Now, from the 10 career options suggested by the AI tool, list down four career options that you would like to explore further, considering your interests, skills, and goals.

1. _____   2. _____

3. _____   4. _____

Let's use the AI tool to learn more about each one.

How do you feel about AI suggesting career options? Were the results surprising?

Task: Exploring career options.

Instructions: Select a career from the four listed above and fill in the blanks in the base prompt given below.

Prompt for AI Tools	Hello! I am _____ years old and currently living in _____, India. I am pursuing _____ course, specializing in _____. I am interested in a career as an _____[Enter Career option]. Please keep my age, location, and career aspirations in mind throughout our conversation. I am seeking your assistance to learn more about this career. Please wait for my next prompts before providing detailed information.

Now, use the following 7 prompts to learn more about your chosen career.

1. Roles and Responsibilities

Remember: If you want the response from AI tools to be short, end the prompt with **"Keep the answers brief and provide only a few bullet points".**

Prompt: *What are the common duties of a _____ [Enter Career Option]?*
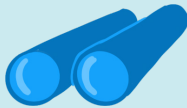
AI Answer: _____

_____

2. Work Environment

Prompt: *What is the typical work environment like for an _____ [Enter Career Option]? Is it mostly indoors, outdoors, or a mix of both?*

AI Answer: _____

_____

3. Educational Requirements

Prompt: *What education or courses do most _____ [Enter Career Option] need?*

AI Answer: _____

_____

4. Skill Research

Prompt: *What skills are essential for succeeding as an _____ [Enter Career Option]?*

AI Answer: _____

_____

5. Demand & Growth

Prompt: *Is the demand for _____ [Enter Career Option] expected to increase or decrease in the future? What does career growth look like for this option? How can AI impact this career?*

AI Answer: _____

_____

6. Salary Range

Prompt: *What is the typical salary range for a _____ [Enter Career Option]? Also, could you recommend some platforms to check for salary information in India?can AI impact this career?*

AI Answer: _____

_____

7. Finding Jobs

Prompt: *Can you recommend some specific job search platforms that are popular for _____ [Enter Career Option] roles in _____[Enter State], India? Are there any government job portals relevant to this field?*

AI Answer: _____

_____

Now, let's explore other career options. Repeat the above activity for each. Finally, pick the career you like best and complete the following activity.

Which career have you chosen, and why do you think you are a good fit for it?

_____

_____

_____
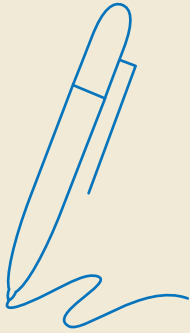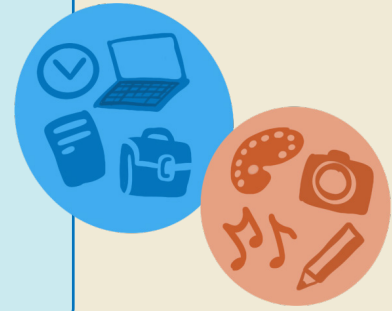
What I learnt today:

Put a ✓ if you know this topic well.

1. AI tools can suggest careers that match people's interests and qualifications.

2. AI helps find new career options one might not have thought about.

3. These tools save time by showing careers that fit one's interests.

Learn More

Check out the digital lesson:
Exploring Careers with AI

Talk to a friend/ family member about AI: Share what you learned with a friend or family member.

Try using AI tools: Experiment with free AI tools to see how they work:
- Microsoft Copilot: https://www.bing.com/chat
- Gemini: https://gemini.google.com/
- ChatGPT: https://chatgpt.com/

Ask questions: If you have questions about AI, ask your teacher or classmates and learn from each other.

13.7 Learning with AI

In this lesson, you will learn:

1. How AI can help you learn better

Have you ever used AI tools to help you with your studies? If you have, which ones did you use, and what was your experience like? Choose the option that best describes you.

- ☐ No, I have never used AI tools for my studies.
- ☐ I have heard about AI tools, but I have never used them.
- ☐ Yes, I have used AI tools like chatbots or learning apps, and it was helpful.
- ☐ Yes, I have used AI tools like chatbots or learning apps, but I did not find them helpful.

In the previous chapter, you used AI to learn about different career options. Similarly, you can use AI to learn any topic you want.

Now that we have thought about using AI tools, let's learn how AI can help us study better. Even if you have not used AI yet, these tools can be very helpful for learning.

Hi, I'm Priya.

13.7.1 How AI can help you learn better

Meet Priya. Priya wants to learn how to speak English well. She uses the prompts provided below to ask AI for help. The AI gives her clear steps to follow, resources, a personalized study plan, practice exercises, feedback options, motivation tips, and solutions to common challenges. By following the AI's advice, Priya feels more confident and organized in her learning journey.

Let's see how AI can help an ITI learner, like Priya, who wants to learn how to speak English well.

1. Understanding what to learn

Priya wants to start learning English but doesn't know where to begin.

Prompts:

- I am a beginner in learning English. Can you list the main topics I should start with and a brief explanation for each?

- What are the common challenges people face when learning English and how can they overcome them?

2. Simplifying Complex Topics

Priya finds some grammar rules hard to understand.

Prompts:

- I am having trouble understanding <u>English grammar rules</u>, specifically <u>past tense verbs</u>. Can you explain them in simple terms with examples?

- Can you simplify <u>English pronunciation rules</u> to help me <u>speak more clearly?</u>

3. Getting Feedback

Priya needs feedback on her English speaking.

Prompts:

- I am practicing <u>English speaking</u> by recording myself. Can you suggest ways to get feedback on <u>my pronunciation and fluency?</u>

- I have pasted [<u>document/essay</u>]. Could you check for <u>grammar and punctuation</u> errors and suggest improvements?

- Practice with me on casual <u>conversation skills</u>. Can you engage in a dialogue and provide feedback on my <u>speaking style?</u>

4. Practicing for Real-Life situations

Priya wants to practice speaking English in real-life situations.

Prompts:

- I want to practice <u>speaking English</u> for real-life situations like <u>ordering food or asking for directions</u>. Can you provide some example conversations?

- Can you simulate a job interview in English for me to practice? I will respond to each question as if it were a real conversation and you can provide feedback as well.

5. Testing Your Knowledge

Priya wants to test what she has learned so far.

Prompts:

- I have been learning <u>English</u> for a month. Can you create a quiz to test my <u>basic vocabulary and grammar</u> knowledge?

- Can you come up with some scenario-based questions to practice <u>English vocabulary?</u>

6. Finding More Resources

Priya needs more materials to study.

Prompts:

- I need more resources to learn <u>English</u>, like <u>websites, apps, and books</u>. Can you recommend some that are good for practice and learning?

- Can you suggest some websites or platforms that offer free learning materials for <u>English Grammar?</u>

7. Idea Generation

Priya needs ideas for writing a short story in English.

Prompts:

- I want to write <u>a short story in English about a day at the market</u>. Can you help me come up with some interesting ideas?

- Can you help me come up with ideas for my project? I am working on improving my <u>English communication skills</u> and need creative inspiration. Please suggest new approaches to explore.

8. Resume Building

Priya wants to create a resume for a job application.

Prompts:

- I need to write a resume for <u>an entry-level job in a digital marketing firm</u>. I have basic skills in <u>using computers and speaking English</u>. Can you provide a template and tips on what information to include?

Note: First, paste your document or resume into the AI tools, then proceed with the following prompts.

- Can you help me improve my resume? I want to highlight my skills and experiences better.

- I am not sure about my resume format. Can you suggest a professional layout that is clear and easy to read?

9. Personalizing Your Study Schedule

Priya wants a study schedule that fits her needs.

Prompts:

- I have <u>1 hour</u> every day to study <u>English</u>. Can you help me create a weekly study schedule <u>that balances learning new vocabulary, grammar practice, and speaking exercises?</u>

- Can you help me make a study plan that fits my goals and schedule? I want to study better.

My Learning Plan

Use the prompts given below to replace the underlined parts in the examples with your topic and ask AI tools such as Microsoft Copilot or ChatGPT. Using these prompts, you can make your learning journey easier and more effective.

1. Understanding what to learn

Prompts:

- I am a beginner in learning _____[Enter Topic]. Can you list the main topics I should start with and a brief explanation for each?

- What are the common challenges people face when learning _____[Enter Topic] and how can they overcome them?

_____

_____

2. Simplifying Complex Topics

Prompts:

- Can you explain [enter topic] in a way that's easy to understand? Please use examples to help clarify.

- Break down_____ [enter topic] into simpler parts. What are the main ideas I should understand?

_____

_____

3. Getting Feedback

Prompts: First, paste your document or resume into the AI tools, then proceed with the following prompts.

- I have pasted [document/essay]. Could you check for grammar and punctuation errors and suggest improvements?

- I have pasted my [document/essay]. Can you tell me what's good and what needs improvement? Also, any ideas for improvement?

_____

_____

4. Practicing for Real-Life situations

Prompts:

- Create a presentation on the topic _____[enter topic] with _____[enter no. of slides] slides.

- Can you simulate a job interview scenario and ask me typical interview questions related to_____ [specific job field]? I will respond to each question as if it were a real interview and you can provide feedback as well.

_____

_____

5. Testing Your Knowledge:

Prompts:

- I have been learning _____ [enter topic] for a month. Can you create a quiz to test my knowledge of _____ [enter topic]?

- Can you come up with some scenario-based questions to practice _____ [enter topic]?

_____

_____

6. Finding More Resources

Prompts:

- Can you find online courses or tutorials to help me learn _____ [enter topic]?

- Can you suggest some websites or platforms that offer free learning materials for_____ [enter topic]?

_____

_____

7. Idea Generation

Prompts:

- Can you suggest project ideas that can help me apply_____ [enter topic] in real-life scenarios?

- Can you help me come up with ideas for my project? I am working on _____[describe your project topic briefly] and need creative inspiration. Please suggest new approaches to explore.

_____

_____

8. Resume Building

Prompts: First, paste your document or resume into the AI tools, then proceed with the following prompts.

- Can you help me improve my resume? I want to highlight my skills and experiences better.

- I am not sure about my resume format. Can you suggest a layout that looks professional and is easy to understand?

_____

_____

9. Personalizing Your Study Schedule

Prompts:

- I have _____ [no. of hours] everyday to study _____[enter topic]. Can you help me create a weekly study schedule?

- Can you help me make a study plan that fits my goals and schedule? I want to study better.

_____

_____

Remember

- AI is a powerful tool, but it's not magic. You still need to put in the effort to learn.
- Use AI to stay organized and motivated, but do not expect it to do everything for you.
- Try different AI tools to see which ones you like best.
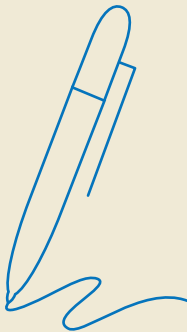
My thoughts

AI tutoring apps can help you learn, but do not forget your teachers, books, and classmates! Using them all together makes you a super-learner.

Was the AI tool helpful?

How do you plan to use this tool for your studies in the future?

- ☐ To get help with my homework
- ☐ To learn new things and facts
- ☐ To find answers to my questions quickly
- ☐ Others: _____

_____

What I learnt today:

_____

Put a ✓ if you know this topic well.

1. AI can help me learn any topic on my own. ☐
2. AI tools can help when learning is hard. ☐

Learn More

Check out the digital lesson:

- Learning with AI

Talk to a friend/ family member about AI: Share what you learned with a friend or family member.

Try using AI tools: Experiment with free AI tools to see how they work:

- Microsoft Copilot: https://www.bing.com/chat
- Gemini: https://gemini.google.com/
- ChatGPT: https://chatgpt.com/

Ask questions: If you have questions about AI, ask your teacher or classmates and learn from each other.
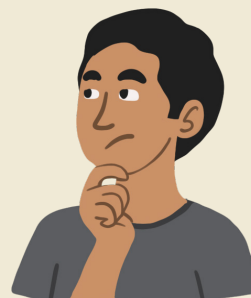
13.8 Using AI Responsibly

In this lesson, you will learn:

1. What Ethical AI is and why it is important
2. Identifying the Ethical Challenges in AI
3. How to use AI responsibly

Ethical AI

Should we use robot judges? Would you trust them?

Imagine a world where robots are used as judges in court cases. These robots know everything and can understand proof perfectly.

What are some good and bad things about having robot judges? Tick the option you feel is correct.

The good thing about robot judges

☐ They can make sure decisions are fair and always the same.

☐ They might make fewer mistakes than humans.

☐ They can make decisions on cases faster by understanding information quickly.

The bad things about robot judges

☐ They might not understand human emotions and problems well.

☐ They could make unfair decisions because of biases in the data they learn from.

☐ They might have trouble with new or different problems.

13.8.1 What Is Ethical AI?

During this activity, you may have noticed that the use of AI can have its challenges. For example, using robot judges raises concerns because they could make unfair choices based on the data they use. That's why clear rules are important in AI development—to make sure it's used safely and fairly for everyone.

Ethical AI means following these rules to ensure that artificial intelligence is created and used safely for the good of everyone. Let's learn more about this topic.

13.8.2 What are the ethical challenges in AI, and how can we use it responsibly?

AI has many ethical challenges as it becomes part of our daily lives. Here are some of the main issues:

1. Bias

Situation: In 2018, Amazon had a problem with its AI hiring tool. They hoped it would help find good workers. But the tool learned from job applications sent over the past 10 years when mostly men got certain jobs. This made the tool think men were always better for the job. So, it picked men over women, even if the women were just as good.

Based on this situation, try to find the correct answer to the following questions:

Q1: What is the ethical concern with this AI hiring tool?

A.   The AI shows bias by preferring male candidates over female candidates.

B.   The AI is not quick enough to make decisions.

C.   The AI costs too much money to use.

Q2: What is a possible solution to make AI fairer?

A.   Teach the AI with information only from male candidates.

B.   Teach the AI with information from all kinds of candidates.

C.   Stop using AI for hiring completely.

2. Privacy

Situation: In 2018, Facebook had a big problem with AI in the Cambridge Analytica scandal. Cambridge Analytica, a company that helps political campaigns, used AI to take data from around 87 million users without their permission. This data was used for political ads, upsetting many people and leading to government inquiries.

Based on this situation, try to find the correct answer to the following questions:

Q1: What is the main ethical concern with Facebook's actions?

A.   It made Facebook more popular.

B.   They shared away people's information without asking them.

C.   It did not use enough advertisements.

Q 2: What can be done to address the privacy concerns?

A.   Sharing more user data with companies.

B.   By selling user data without their permission.

C.   By asking users for permission before sharing their data.

3. Safety and Security

Situation 1: Recently, there have been more AI-powered cyberattacks. AI is used to send fake emails or messages that look real, tricking people into giving away important information like passwords or financial details. This has caused problems where regular people, as well as banks and big companies, lost data and money.

Based on this situation, try to find the correct answer to the following questions:

Q1: What is an ethical concern with AI sending fake emails or messages?

A.   They do not affect anyone.

B.   It can cause a lot of harm if not used properly.

C.   They make computers safer.

Q2: What should be done to address the ethical concerns of AI in online safety?

A.   We should stop using AI completely.

B.   Train more people to use AI for hacking.

C.   Make international rules to control AI use in online safety.

Situation 2: On social media, AI is blamed for spreading fake news and causing arguments. For example, in 2016, Facebook's AI tools were blamed for promoting fake news. The AI learned what people liked and showed them posts they might enjoy, even if they were not true. This worries people about what they see online and how AI should be used carefully to stop fake news. It's a big issue for society, and tech companies need to find ways to solve these problems.

Q1: What is the ethical concern with AI spreading fake news on social media?

A.   It makes social media more interesting.

B.   It does not affect anyone.

C.   It can spread wrong information and harm public trust.

Q2: What should social media companies do to address the ethical concerns of AI?

A.   Stop using AI on social media.

B.   Find ways to detect and reduce the spread of false information.

C.   By training AI to spread more news.

13.8.3 Why it is important to use AI responsibly

Think about your daily activities. Can you think of a specific example where using AI irresponsibly can impact yourself or others? Here are some examples given below:

Online Shopping	**Smart Devices**	**Healthcare**
AI might show you the wrong products, making you buy things you don't need.	AI assistants can record private talks without permission.	AI apps can mishandle health data, risking your privacy.

Advertising

Personal data is being used to recommend ads without permission.

Social Media

AI can spread fake news, and hateful comments and bully others.

Education

AI can give wrong answers and help cheat on tests or homework.

Public Safety

AI in self-driving cars can make mistakes and cause accidents.

AI cameras might wrongly identify people and violate their privacy.

Navigation Apps

GPS might give wrong directions, making you late or lost.

Your location could be shared without your permission.

Financial Services

AI can give bad financial advice, leading to bad investments.

AI can mess up banking transactions or expose your financial info.

Task: Imagine a student using AI to create fake social media profiles that spread false information about classmates. By using AI-generated text and images, they make it look like others are saying things they did not say.

Q1. How does this irresponsible use of AI affect the classmates targeted by fake profiles?

A. It makes them feel happy and popular.

B. It spreads lies about them and hurts their feelings.

C. It helps them become friends with more people.

Q2. What can be done to stop and deal with this kind of AI misuse in social media?

Report Misuse: If you see AI being misused, report it to the platform or a trusted adult.

Verify Information: Always check if the information is true before sharing it.

Punishments for Misuse: There should be clear consequences for anyone who misuses AI, such as account suspension.

Monitor Activity: Social media platforms should monitor activity to detect and stop AI misuse quickly.

Others: _____

_____

Based on the case studies and discussions about bias, privacy, safety, and security, answer the following questions.

Q1. Why is it important to use AI responsibly?

A. To make sure everyone has fun with robots

B. To keep everyone safe and treat people fairly

C. So that computers can do all our work

Q2. How can you make sure AI is used responsibly in your life? Select all that apply.

☐ Learn about how AI works and its impacts.

☐ Think about fairness and safety when using AI tools.

☐ Speak up if you see AI being used in a bad way.

☐ Follow rules and guidelines for using AI responsibly.
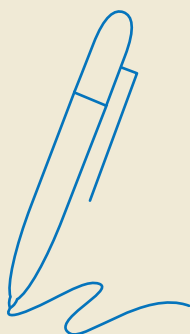
What I learnt today:

Put a ✓ if you know this topic well.

1. Ethical AI means using AI in ways that are fair and good for everyone. ☐

2. AI can have problems like bias, privacy issues, security risks, and spreading false information. ☐

3. Train AI with different kinds of information, and protect people's privacy. ☐

Learn More

Check out the digital lessons:

- Using AI Responsibly - 1
- Using AI Responsibly - 2

Talk to a friend/ family member about AI: Share what you learned with a friend or family member.

Try using AI tools: Experiment with free AI tools to see how they work:

- Microsoft Copilot: https://www.bing.com/chat
- Gemini: https://gemini.google.com/
- ChatGPT: https://chatgpt.com/

Ask questions: If you have questions about AI, ask your teacher or classmates and learn from each other.

Answer Key for Activities:

13.8.2 What are the ethical challenges in AI, and how can we use it responsibly?

1. **Bias:**

    Q1: A. This happens because the tool learned from past data that mostly favoured men, putting women at a disadvantage.

    Q2: B. Teach the AI with information from all kinds of candidates. By training the AI with a different dataset that includes applications from both men and women, the AI can learn to make fairer hiring decisions without bias.

2. **Privacy:**

    Q1: B. The main problem was Facebook giving user data to Cambridge Analytica without getting permission from its users, which hurt their privacy.

    Q2: C. To be more ethical, Facebook could have asked users directly if they agreed to share their data before doing so. This would give users more control over their information and make the process transparent.

3. **Safety and Security:**

    Situation 1:

    Q1: B. The issue with sending fake emails and messages using AI is that if AI tools are not managed carefully, they can cause serious harm by stealing sensitive information.

    Q2: C. To solve the problems related to AI in online safety, we should create international rules that guide how AI can be used. This will help ensure that AI is used responsibly and safely.

    Situation 2:

    Q1: C. The ethical concern is that AI can spread fake news, which can mislead people and cause problems.

    Q2 B. Social media companies should work on finding and stopping the spread of fake news to address ethical concerns.

13.8.3 Why it is important to use AI responsibly

Q1. B. It spreads lies about them and hurts their feelings.

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