Recommended Usage of this Core Training Module

- This core training module introduces the fundamentals of AI and AI literacy.

- You can refer to the presenter notes for explanations during the lecture.

- This module is designed for a 40 – 50 minute session consisting of a lecture interspersed with light questions for the audience, followed by audience engagement activities.

- We recommend conducting a 20 – 30 minute lecture with this core training module, followed with 20 – 30 minutes of audience engagement through Q&A.

- To allow more time for audience Q&A, discussion, and activities, the class can be split into two to three sessions.

Question 1

Which of these is a real photo of a real person?

1 >

< 2

Question 2

Which of these is a real photo of a real person?

1

2

Question 3

Which of these is a real photo of a real person?

1

2

Question 4

Which of the following pieces of music was composed and sung by a human?

1

Faded Memories

make you mine
MINA

2

Question 5

Which of the following tasks is currently beyond the capabilities of AI?

Live interpretation

Driving

Cooking

Education

Medical diagnosis

In the AI era, what skills are needed?

"AI literacy is essential."

UNESCO has developed two AI competency frameworks to help students and teachers with the knowledge and skills necessary to navigate and engage with AI effectively

AI is distinct from other digital technologies due to its potential to profoundly reshape societies, economies and education systems. Unlike conventional information and communication technologies (ICTs), AI poses unique ethical and social challenges, such as issues of fairness, transparency, privacy and accountability.

Learning Objectives

Recognize the necessity of AI literacy, understand the concept of AI, and predict the changes in the world brought by AI advancements.
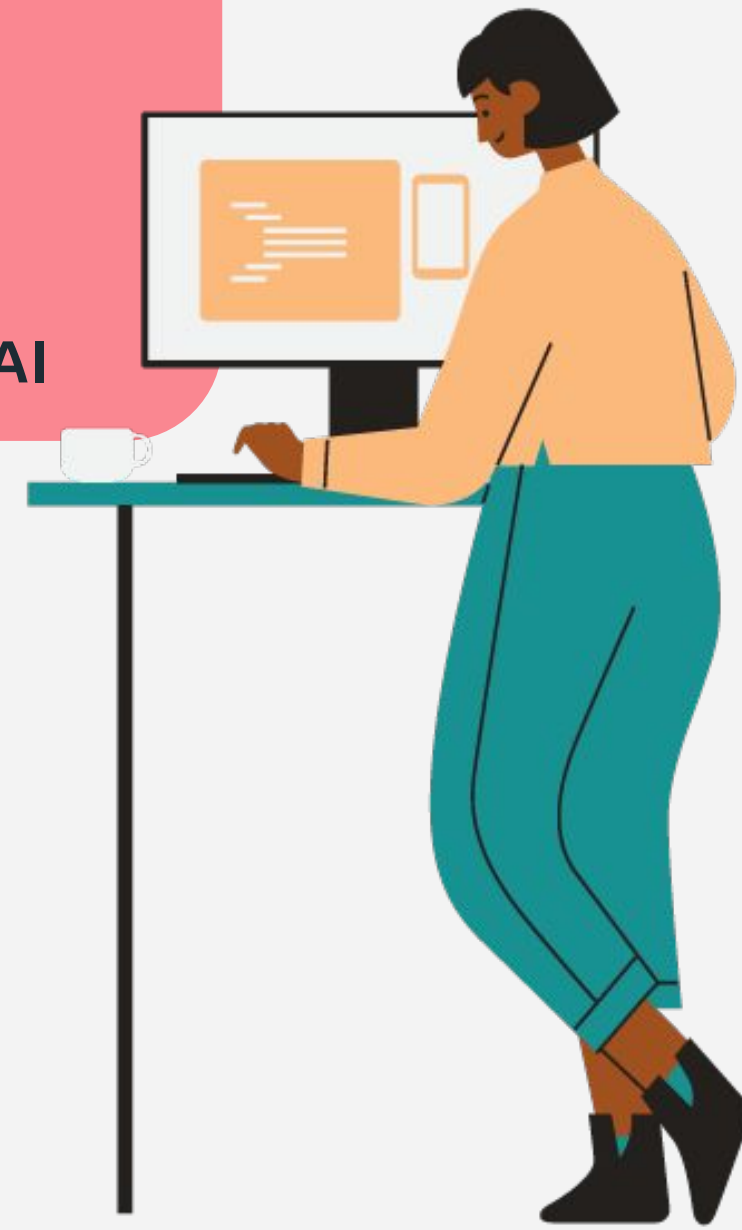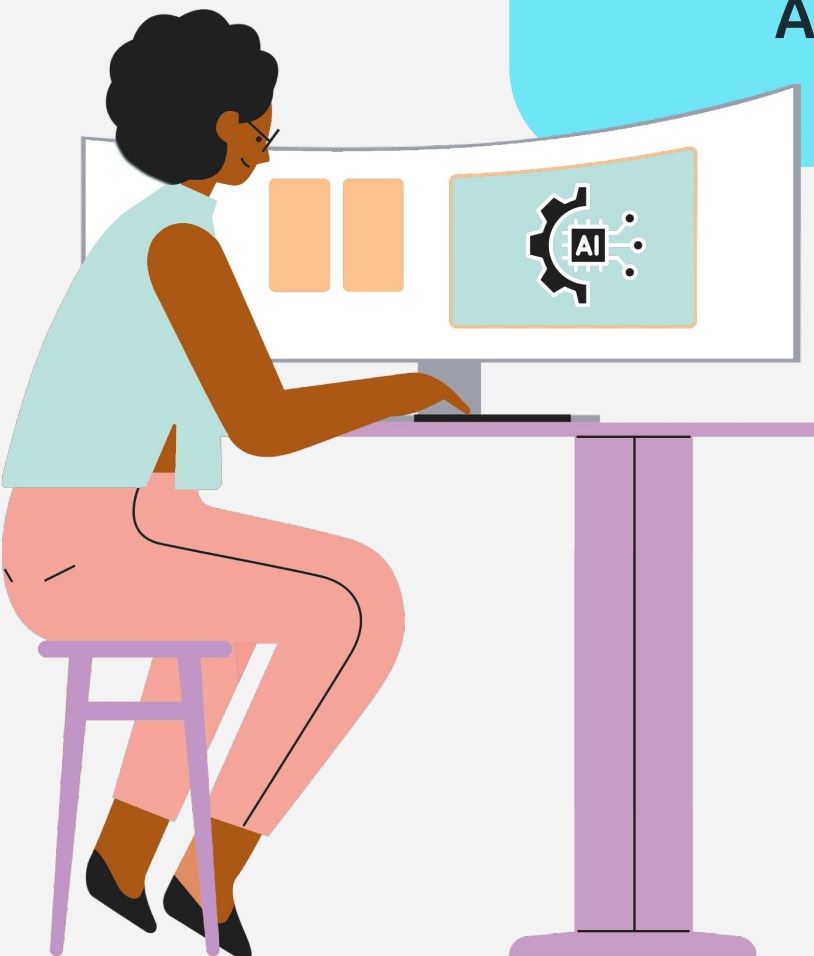
Describe core AI concepts

Recognize risks & opportunities related to AI

Identify safe, responsible, & effective use of AI

What is Intelligence?

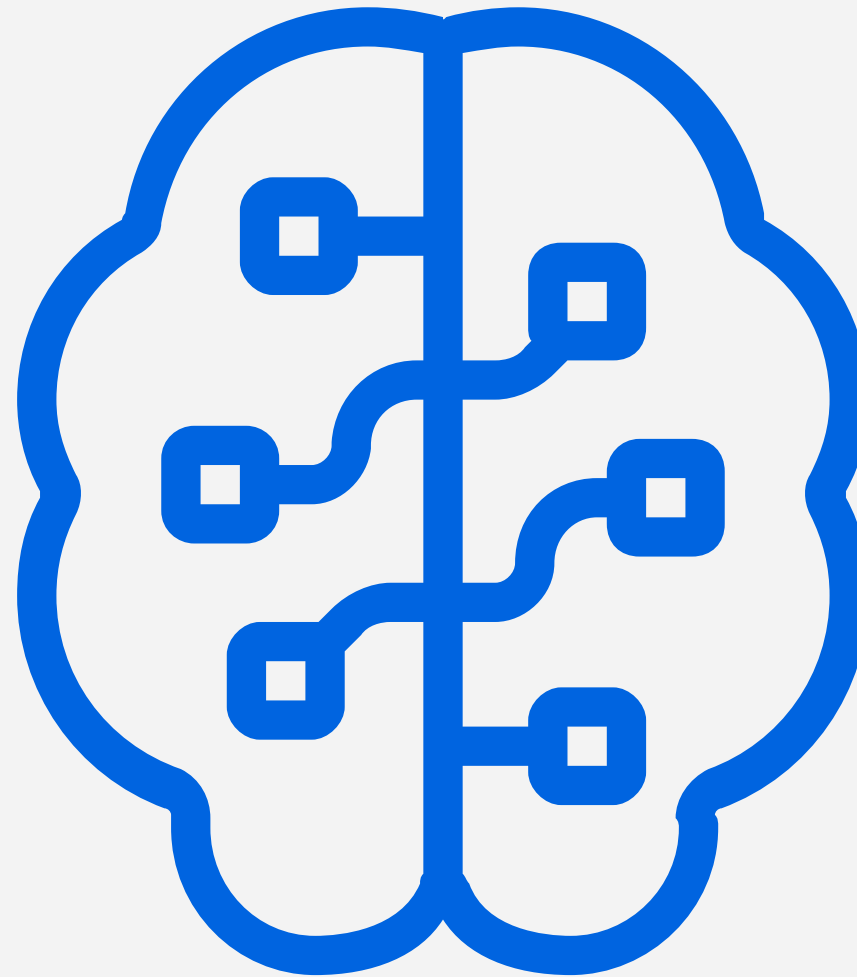Intelligence encompasses a wide range of abilities.

Memory

Comprehension

Learning

Reasoning

Language use

Judgement

Problem-solving

Abstraction

Creativity

Adaptability

What is Artificial Intelligence?

A computer system that artificially mimics some or all human cognitive abilities
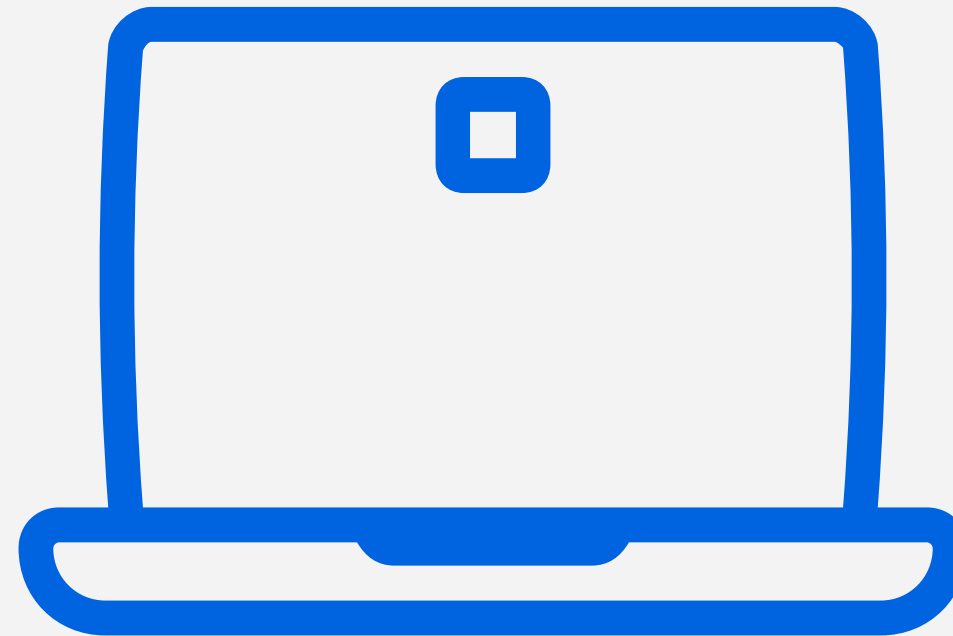
Memory

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Creativity

Adaptability

Advancements in Computing Power

Processors have improved to the point where your smartphone could guide 610,000 Apollo 11 moon missions simultaneously

Apollo guidance computer

- Processing Speed: 2.048 MHz (2 million calculations per sec)
- Memory (RAM): 64KB
- Storage: 72KB
- Size: Similar to a large backpack
- Weight: Approximately 32kg
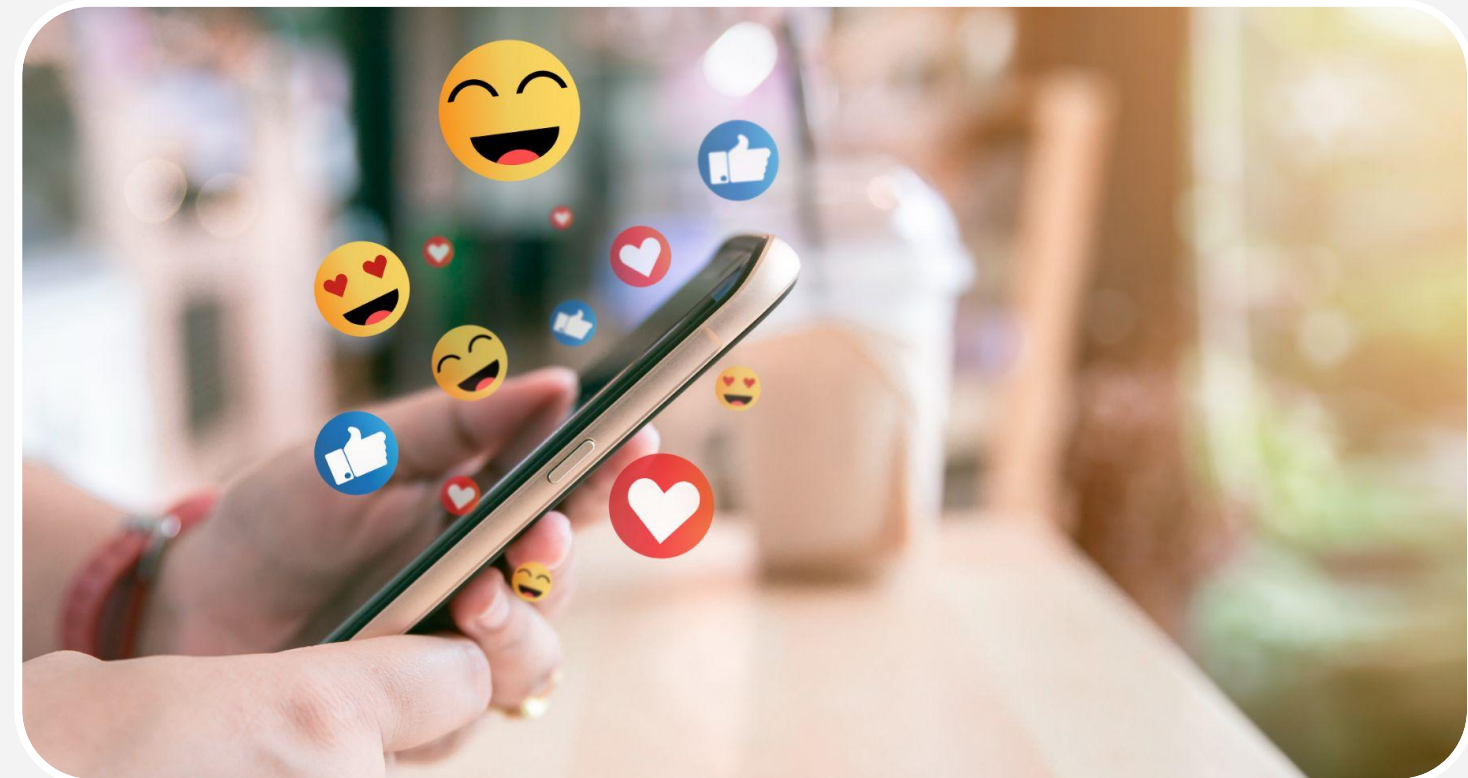
Smartphone CPU

- 3.2 GHz (1,600 times faster than the Apollo guidance computer)
- Memory (RAM): 4GB (62,500 times larger)
- Storage: 128GB (1.7 million times larger)
- Size: Palm-sized
- Weight: Approximately 174g (183 times lighter)

What is Generative AI?

A type of AI that creates new content, such as text, images, or music, by learning patterns from existing data.
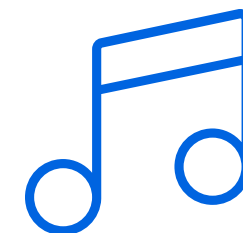
Data learning & pattern recognition

Prompt

Text

Image

Audio

Video

1. Generative AI in Action: Text

1. Prompt entry

The first step is for you to enter a prompt, which consists of words that describe the topic you are interested in.

The prompt can be a question, a statement or any text that you want to communicate to the AI system.

2. Safety mechanism

Safety mechanisms analyze the prompt to detect harmful, offensive or inappropriate words that could produce problematic responses.

3. LLM response generation

The language model processes the prompt and generates a sequence of words representing the response.

During this step, the LLM uses the knowledge it gained during training, where it learned patterns and language from a vast amount of data, to generate a coherent and relevant response.

4. Response processing

The responses that an LLM generates might undergo processing for refinement and enhancement. It might select the most relevant and appropriate response to improve quality or might apply additional safety measures to help prevent the generation of harmful or offensive responses.

5. Response delivery

Finally, the LLM's response is returned to you.

Source: Meta System Cards

2. Generative AI in Action: Images

1. Prompt entry

The first step is for you to enter a prompt, for example, words that describe the topic you are interested in.

2. Safety mechanism

Safety mechanisms analyze the prompt to detect harmful, offensive or inappropriate words that could produce problematic results.

3. Model processing

Next, a generative AI model converts your prompt into an image.

4. Result processing

Then, the initial image is transformed into a high-quality image through processing. This may involve removing noise, increasing the resolution, making color adjustments, or adding final touches to enhance the visual quality of the output.

At this stage, additional safety measures may be applied to reduce the chances of the AI system producing harmful results.

5. Image delivery

After the generated image passes the processing checks and undergoes modifications, the result is presented to you

Source: Meta System Cards

3. Generative AI in Action: Multimodal

1. Input

The first step is to provide an input to the system, which may consist of written or verbal prompts, images, video and/or audio.

2. Safety mechanism

Safety mechanisms analyze all inputs to detect harmful, offensive or inappropriate content that could produce problematic responses.

For all inputs, our existing safety and responsibility guidelines apply.

3. Model processing

Next, the prompt, image or video and/or audio are passed to the AI model for interpretation and output generation.
During this step, the model uses the knowledge it gained during training, where it learned patterns and language from a vast amount of data and images, to generate a coherent and relevant output.

4. Output processing

The output that the model generates might undergo processing for refinement and enhancement.
For example, the model might select the most relevant and appropriate text-based response to improve quality. It also might apply additional safety measures to help prevent the generation of harmful or offensive outputs.

5. Output delivery

Finally, the model provides an output.

Source: Meta System Cards

Why is Generative AI so Powerful?

LLaMA3 (2024)
15 trillion tokens

GPT1 (2018)
600 Million Tokens

Human
It took 939 years

Balancing Benefits and Risks of GenAI

Privacy

- AI can raise novel privacy and security concerns that go beyond data collection and infrastructure

- It's important to understand the privacy policies of different platforms and services and the privacy controls available to users

Fairness & Inclusion

- AI has the potential for bias due to limitations of datasets or produce 'hallucinations'

- The quality of the information created by GenAI is only as good as the quality of the inputs, which can introduce challenges for certain demographic and language groups

Safety & Security

- Like any emerging technology, AI must be shown to be robust and safe for it to be trusted and widely adopted

- Users should also be aware of policies of different platforms and services in terms of permissible outputs and uses

Transparency & Control

- Platforms policies allow users to understand and control what they see on platforms or the types and ways they can utilize GenAI content

- There are ongoing efforts to to help people know when images are generated by AI, including the use of visible and invisible watermarks

Where can AI be used productively?

Medical

- Diagnosis and treatment
- Medical assistant
- Clinical data analysis
- Patient education
- Precision surgery
- Drug development

Manufacturing

- Demand forecasting
- Energy management
- Safety management
- Quality / inventory management

Finance

- Investment analysis
- Credit evaluation
- Customer service
- Financial product recommendations
- Automated trading
- Fraud detection

Agriculture

- Yield prediction
- Pest and disease detection
- Soil analysis
- Farm robot coordination
- Disaster preparedness

Public

- Public opinion collection
- Policy data analysis
- Complaint handling
- Crime prediction
- Disaster response
- Epidemic prediction

Smart City

- Traffic management
- Urban energy management
- Security systems
- Waste collection optimization
- Public service automation

Space Industry

- Space debris tracking and avoidance
- Onboard food cultivation
- Wastewater and drinking water management

Environment

- Climate modeling
- Ecosystem protection
- Air quality monitoring
- Water quality management
- Soil health analysis
- Resource management optimization

The Rise of AI: New Jobs and Transformed Industries

New Industries based on AI

AI research & development	• AI researcher • Data scientist & curator • AI engineer
AI products & services	• AI product / service planner • AI solution architect • Chatbot designer
AI education & training	• AI technology & service educator • AI educational content designer • AI ethics trainer
AI ethics & law	• Data ethics specialist • AI policy analyst • AI auditor

Technical Literacy

Industries complemented by AI

| Customer experience & service	• Customer insight analyst • Digital marketing strategist • Customer satisfaction manager
Education & training	• Educational content developer • Personalized program operator • Evaluation system manager
Health & wellbeing	• Healthcare consultant • Telemedicine coordinator • Wellness data analyst
Creative & content biz	• Content creator • Storytelling designer • Filmmaker

Adaptive Literacy

The Future of AI: Embracing Change and Opportunity

Critical thinking

Creativity

Digital / AI literacy
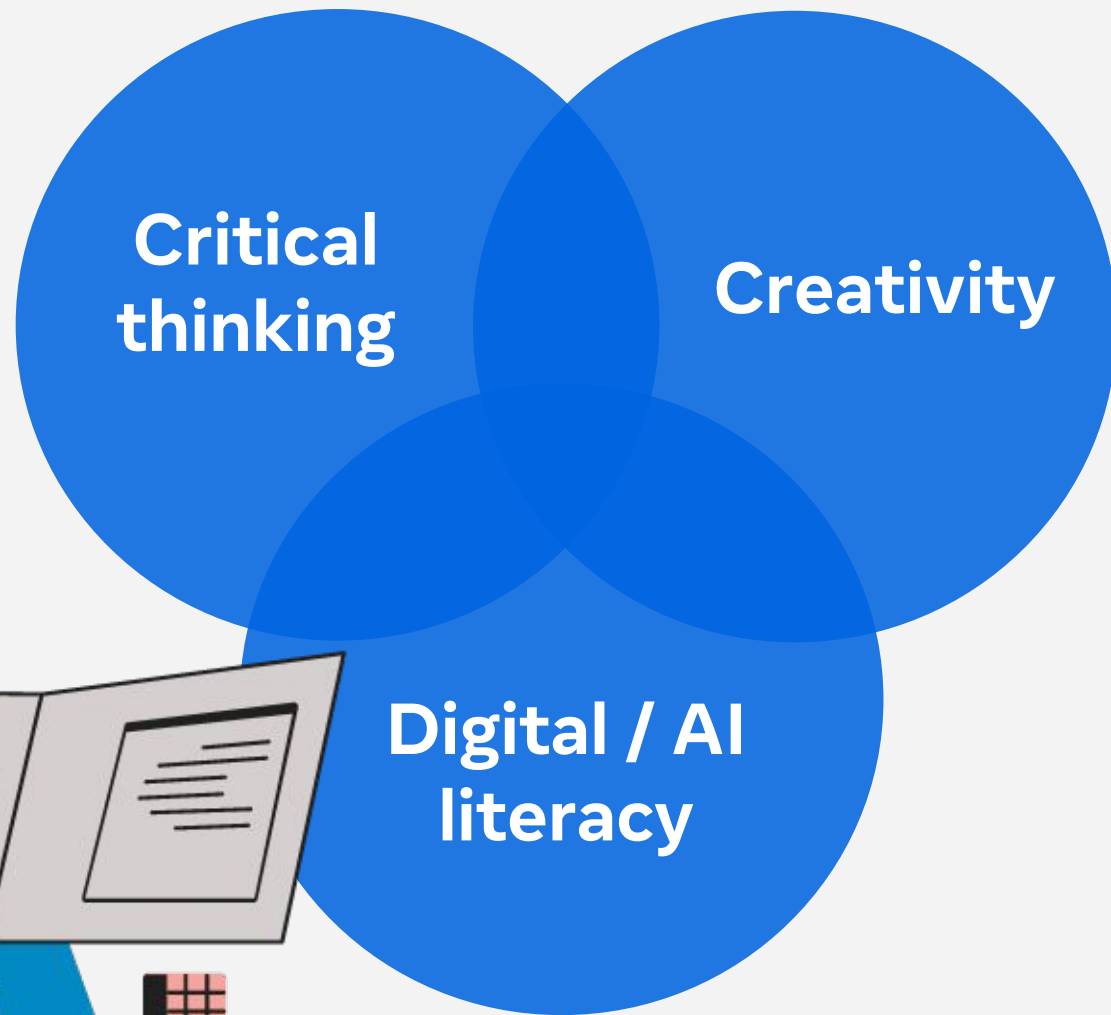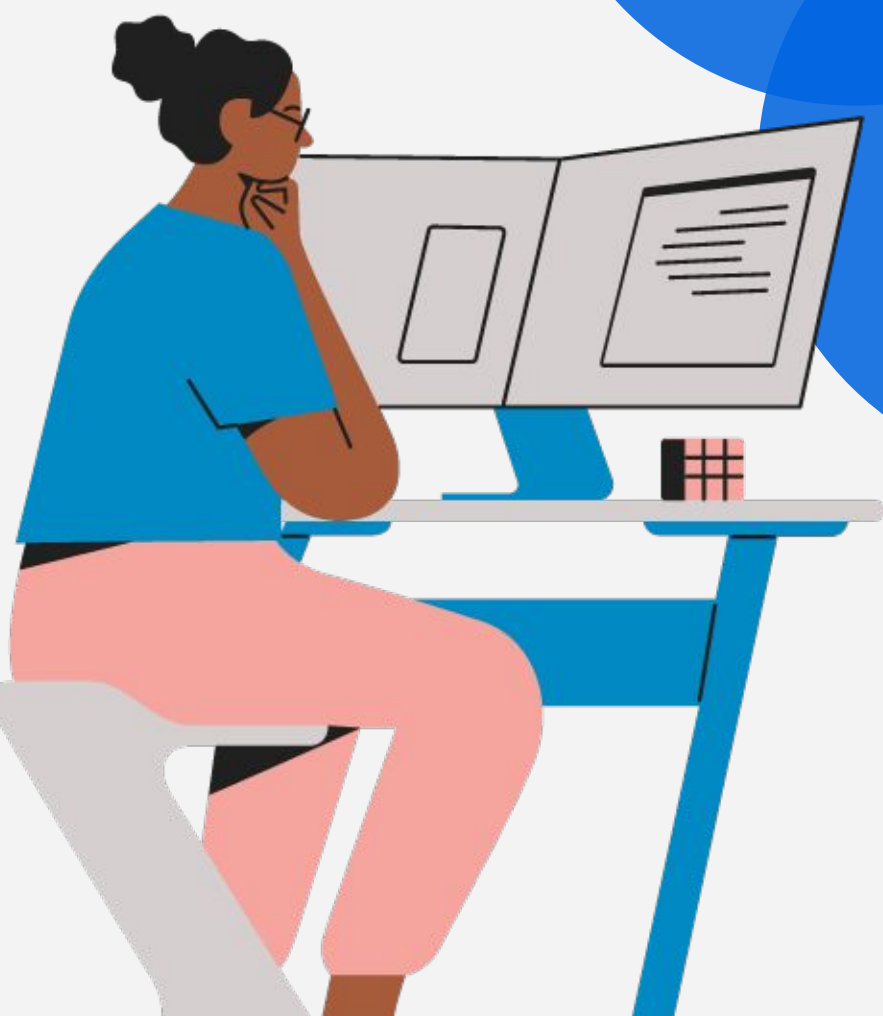
Critical thinking
- Technical understanding & application
- Data analysis
- Information use

Creativity
- Solving problems
- Making decisions
- Ethical judgment

Digital / AI literacy
- Design thinking
- Idea generation
- Innovative thinking

5 Tips for Using AI Responsibly

01 | **Understand the fundamentals of how AI works**

- Understand how AI works and the limits of LLMs and the potential for bias
- AI can only create from learning patterns, the quality of the information is only as good as the inputs

02 | **Think critically & verify Information sources**

- Understand the limits of AI tools and be sure to verify information and cross-reference sources
- Consider whether a user has disclosed that content is AI generated
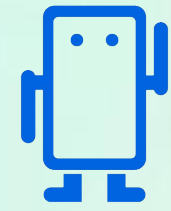
03 | **Be transparent and share thoughtfully**

- Ensure you have permission to use GenAI content, whether in the workplace, school, or online
- Use AI products responsibly and be mindful not to misuse GenAI content for harm or in violation of policies

04 | **Guard your privacy and security**

- Don't share sensitive information with platforms you don't know or trust
- Make sure to use strong passwords for different services and be aware of how your data is handled

05 | **Continue to explore AI features and product as they evolve**

- AI tools can be incredibly useful for productivity, creativity, and generating new ideas
- Educators and parents should explore these tools together with students and children

Thank you

Center for Digital Literacy

AI

In partnership with:

Meta | WE THINK DIGITAL