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AI Literacy

Understanding AI with a Critical Eye

*Lessons for middle school students
aged 11-14*

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AI Literacy

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AI Literacy – Teacher/Parent Guide



Learning Objectives

By the end of these lessons, students will be able to:

1. Define what AI is and describe how it works using data and patterns.
2. Recognize that AI is not a person and does not have thoughts, feelings, or emotions.
3. Describe how AI learns and gets better over time.
4. Explain how AI makes decisions and how these decisions depend on the data it learns from.
5. Identify helpful ways AI is used in everyday life.
6. Practice safe and responsible behavior when using AI-powered tools.

Learning Rationale

Artificial Intelligence is all around us—from voice assistants to online games to learning tools. As students grow up in a world powered by AI, it's vital that they:



Build awareness of AI in their surroundings.



Develop critical thinking about what AI can and cannot do.



Practice digital safety skills and make responsible choices.



Grow confidence in digital literacy and how to ask for help when unsure about technology.

This curriculum develops essential life skills through AI literacy—helping students think critically, make responsible decisions, and navigate technology with confidence.



AI Literacy – Teacher/Parent Guide

Introduction for the Teacher/Parent

These lessons are designed for middle school students (ages 11–14) and can be used in classrooms, advisory programs, enrichment settings, or homeschool instruction. Each lesson includes a student-friendly reading, clear learning objectives, and a variety of activities that encourage deeper thinking and engagement.

The lessons are:

- **Flexible** – Each one can stand alone or be extended over multiple sessions with class discussions, group projects, homework tasks, or creative reflections.
- **Relevant** – Focused on helping students understand how artificial intelligence (AI) works, where it shows up in their daily lives, and how to make informed, responsible decisions.
- **Developmentally Appropriate** – Supports the critical thinking, identity exploration, and ethical reasoning that are central to adolescent growth.

You don't need to be a tech expert to teach these lessons. The goal is to guide students as they build AI awareness—developing the skills to question what they see, use technology wisely, and understand how digital tools are shaping their world.

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- **Pre-Assessment** – Check what students already know about artificial intelligence — and uncover early ideas or misconceptions.
- **Lesson 1: Understanding AI** – Students explore what AI is (and isn't), how it learns using data and patterns, and what machine learning really means.
- **Lesson 2: Patterns, Bias, & Training Data** – Students investigate how AI uses patterns to make decisions — and what happens when that data is incomplete or biased.
- **Lesson 3: How AI Thinks (and how we talk to it)** – Students learn how algorithms and prompts shape AI behavior, and how to use strategy, clarity, and ethics.
- **Lesson 4: AI in Everyday Life** – Students discover the many ways AI supports real-life tasks — from productivity to accessibility — and imagine ways it can empower people, not replace them.
- **Lesson 5: AI Safety & Responsibility** – Students reflect on how to use AI responsibly, understand risks and boundaries, and practice making ethical digital decisions.
- **Post-Assessment** – Students reflect on what they've learned and how their thinking about AI has grown.



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Pre-Assessment



AI Literacy Pre-Assessment

Teacher/Parent Lesson Plan

Learning Objectives



By the end of the pre-assessment, students will:

- Reflect on and express their current understanding and beliefs about artificial intelligence (AI).
- Identify real-world examples of how AI appears in their daily lives.
- Recognize the differences between human intelligence and machine learning.
- Begin to consider ethical and emotional boundaries related to technology use.
- Build self-awareness around their comfort level, curiosity, or uncertainty about AI topics.

Learning Rationale

The pre-assessment is not a formal test—it is a diagnostic tool designed to gauge students' current understanding and perceptions about artificial intelligence. Its purpose is to surface prior knowledge, common misconceptions, and student assumptions before instruction begins.

Key Instructional Benefits:

- **Activates Prior Knowledge:** Helps students make meaningful connections between their experiences and the learning ahead.
- **Encourages Dialogue:** Sparks curiosity and sets the tone for open discussion about the role of AI in their lives.
- **Informs Instruction:** Allows teachers to identify areas where more support, clarification, or extension may be needed.
- **Establishes a Baseline:** Creates a foundation for reflection and growth, especially when paired with a post-assessment.

This tool also supports future ready skills by prompting students to consider their relationship with technology and how it affects their understanding, decision-making, and sense of responsibility.



AI Literacy Pre-Assessment

Teacher/Parent Lesson Plan

Lesson Plan

Step 1: Read through the directions

Ask students to read each statement and decide how much they understand each idea. Remind them that this is not a test and they should be honest; there are no correct answers.

Step 2: An optional discussion.

- After each statement, you may ask for brief examples but avoid correcting them yet—just listen and note answers.
- Keep it light and exploratory. The goal is to learn what they think, not to teach in this step.

Step 3: Record insights

Consider jotting down brief notes of their responses so you can look back during the post-assessment to see changes in understanding.

Step 4: Set the tone

Let students know that by the end of the lessons, they'll have learned new things about AI, and it's perfectly fine if their answers change later.



AI Literacy Pre-Assessment

For each statement below, rate how well you understand the idea by choosing one of the following:

- I understand this well
- I kind of understand
- I'm unsure or confused

Statement	I understand this well!	I somewhat understand this.	I'm unsure or confused by this.
I can explain what artificial intelligence (AI) is.			
I know how AI learns to do things using data.			
I understand the difference between AI and regular computer programs.			
I can explain why AI doesn't have thoughts or feelings like humans do.			
I can tell the difference between a real person and a chatbot or virtual assistant.			
I can spot examples of AI in the apps or websites I use.			
I know that AI is used in things beyond phones or games, like in cars or medicine.			
I understand how AI helps recommend videos, songs, or ads to me.			
I understand that AI makes decisions based on the data it is trained on.			



AI Literacy Pre-Assessment

Statement	I understand this well!	I somewhat understand this.	I'm unsure or confused by this.
I can explain why AI can't always explain how or why it makes a choice.			
I know why it's important to use AI tools safely and responsibly.			
I can explain some risks or problems that can happen with AI.			
I understand that people need to make ethical choices when designing or using AI.			

Which topic do you feel the most confident about? Why do you think that is?

Which statement(s) did you feel unsure or confused about? What do you think made them hard to understand?

What is one question you have about AI that you'd like to explore?



Lesson 1

Understanding AI

Essential Question

What is artificial intelligence, and how is it different from other types of technology?

Core Idea

AI is a type of technology that uses data and rules to solve problems, make predictions, or automate tasks. It's not human—it doesn't think or feel—but it can appear smart because it learns from patterns in the data it's trained on.



Understanding AI

Teacher/Parent Lesson Plan



Learning Objectives

By the end of this lesson, students will be able to:

- Define artificial intelligence (AI) in their own words.
- Explain how AI is different from traditional technology or tools.
- Understand that AI is created by humans and does not have thoughts or feelings.
- Identify real-world examples of AI in everyday life (e.g., smart assistants, recommendation systems).
- Recognize that AI works by finding patterns in large amounts of data.
- Simulate how AI follows logic rules to solve simple tasks.

Learning Rationale

Middle school students are growing up surrounded by Artificial Intelligence (AI)—even if they don't realize it. And as AI becomes a more common part of school, social media, entertainment, and even home life, it's critical that students learn what AI is and how it functions.

In this lesson, students will build foundational AI literacy by exploring:

- What AI actually is (and what it isn't)
- How AI differs from other kinds of technology
- Where AI shows up in their daily lives
- Why AI is a tool—not a person—with limits and rules

How This Lesson Supports Middle School Development

At this age, students are naturally curious, increasingly capable of abstract thinking, and beginning to question how the world around them works—including technology.

This lesson supports their development by encouraging them to:

- Ask critical questions about how digital tools operate
- Think more deeply about what it means for technology to be “smart”
- Distinguish between real intelligence and pattern-based logic
- Reflect on their own technology use with more awareness and insight



Understanding AI

Teacher/Parent Lesson Plan

Lesson Plan

Read the Introduction

- Students can read the introduction silently, in pairs, or listen as you read it aloud
- Key points to emphasize:
 - AI is a computer system that can do things like learning, recognizing patterns, or making predictions.
 - It learns by training on large amounts of data (images, words, sounds, etc.).
 - AI is not alive—it does not think or feel, but it can appear smart.

Activity 1: Teach the AI; You Be the Coder

- Introduce the idea of if-then rules that help AI recognize patterns.
- Students write 3–5 “if-then” rules to teach an imaginary AI how to sort items.
- Share a few rules aloud and discuss:
 - Which rules worked?
 - Were any unclear or confusing?
 - How does this relate to how AI learns?

Activity 2: AI or Not?

- Give students time to work in small groups or pairs on the chart. If students are working independently, they can do this table on their own and share their thoughts with you afterwards.
- Debrief as a class. Clarify that AI uses data and makes predictions, while some tools follow fixed rules.

Activity 3: Predict like AI

- Ask students to read Jordan’s profile and predict what content an AI might recommend next.
- Give students time to reflect and think about AI in their lives and the choices they make.

Activity 4: Quick, Draw! Like an AI

- Give students a chance to play around with this game (<https://quickdraw.withgoogle.com/>) and then discuss the answers to the questions.
- End this lesson by going through the “Why This Matters” at the end of this activity.



Understanding AI



Learning Goals for this lesson:

- I can explain what artificial intelligence (AI) is in my own words.
- I can tell how AI is different from regular technology or tools.
- I can name real-life examples of AI I've seen or used.
- I can describe how AI follows rules and patterns to solve problems.
- I can understand that AI is not a person and doesn't think or feel like humans do.



Understanding AI

You've probably interacted with artificial intelligence (AI) today — scrolling through personalized video recommendations, using voice-to-text, or getting real-time directions on a map. AI is working behind the scenes.

Artificial Intelligence refers to technology that can do tasks we usually associate with human thinking — like recognizing patterns, solving problems, learning from data, or making predictions.

But it's important to be clear: AI is not human.

It doesn't feel emotions, think for itself, or understand the world the way people do. AI can seem intelligent because it's trained on massive amounts of information — but it's still just following patterns and logic.

So... How Does It Work?

AI may look smart, but it actually works by following rules and spotting patterns in huge amounts of data. This is called machine learning — and it's how AI “learns” to do its job.

Let's break it down:

1. AI Learns from Examples

Imagine you want to teach AI how to tell the difference between a cat and not a cat. You don't give it one photo — you give it thousands.

- Some say “cat.”
- Some say “not cat.”

The AI starts to look for what's the same in all the “cat” photos — like pointy ears or whiskers.

That's called training a model — and the more examples it gets, the better it learns to guess correctly.