



AI Literacy

Understanding AI and Responsible Tech Use

Middle School Workbook



Editors:
Janna Nobleza
Michele Lackovic
Suresh Korapati
Andrew Culley
Emelen De Jesus

Published 2026 by Seltrove, an imprint of IB Source Inc.
Copyright IB Source, Inc.
ISBN :9781957136172

Copyright and Use Restrictions

This publication is protected by copyright laws. All rights are strictly reserved by the publishers. Unauthorized duplication, reproduction, storage, or distribution of any part of this work, by any means, including but not limited to electronic, mechanical, photocopying, recording, or microcopying, is prohibited without the express written consent of the publishing authorities.

Accuracy Disclaimer

The authors and publishers have exerted every effort to ensure that the information within this publication is both accurate and complete. Despite these efforts, no guarantee is made regarding the content's infallibility. The authors and publishers do not assume liability for any errors, omissions, or inaccuracies found in the publication, nor for any resultant loss or damage. Any questions or inquiries on rights please email info@seltrove.com

© 2026 IB Source, Inc. All rights reserved. Unauthorized copying, distribution, or reproduction of any portion of this publication in any medium is strictly prohibited and may result in civil and criminal penalties.

To see our full collection of resource workbooks, scan the QR code below.



Contents

Pre-Assessment

– Checking what students already know about AI.

01 Chapter 1

Understanding AI

- Activity 1.1 Teach the AI; You Be the Coder
- Activity 1.2 Rule-Based or Machine-Learning?
- Activity 1.3 Predict like AI
- Activity 1.4 Quick, Draw! Like an AI

02 Chapter 2

AI: Patterns, Bias, & Training Data

- Activity 2.1 Echo Chamber Simulation
- Activity 2.2 Bias Test Simulation
- Activity 2.3 Train the AI – AI for Oceans

03 Chapter 3

How AI Thinks (and how we talk about it)

- Activity 3.1 Build Your Own Filter Bubble
- Activity 3.2 Can You Make the AI Smarter?
- Activity 3.3 Strategies Lab
- Activity 3.4 Ethical Prompting Challenge

04 Chapter 4

AI in Everyday Life

- Activity 4.1 AI in my Day
- Activity 4.2 Real-Life AI Heroes
- Activity 4.3 Smarter Writing with QuillBot
- Activity 4.4 Create your own AI helper!

05 Chapter 5

AI Safety & Responsibility

- Activity 5.1 Safety Checklist
- Activity 5.2 Who Should Decide?
- Activity 5.3 Ethical Dilemmas: What Would You Do?
- Activity 5.4 Interland Review Challenge

06 Chapter 6

AI, Energy, and the Environment

- Activity 6.1 Heat Map — Where Does AI Live?
- Activity 6.2 Scaling the Impact
- Activity 6.3 Cooling System Showdown
- Activity 6.4 AI for Earth — Idea Sprint
- Activity 6.5 Design a Low-Impact AI Tool

Capstone Project: AI for Good Challenge –
Design a Helpful Tool

Post-Assessment

Additional Resources

How to Use this Workbook



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.

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

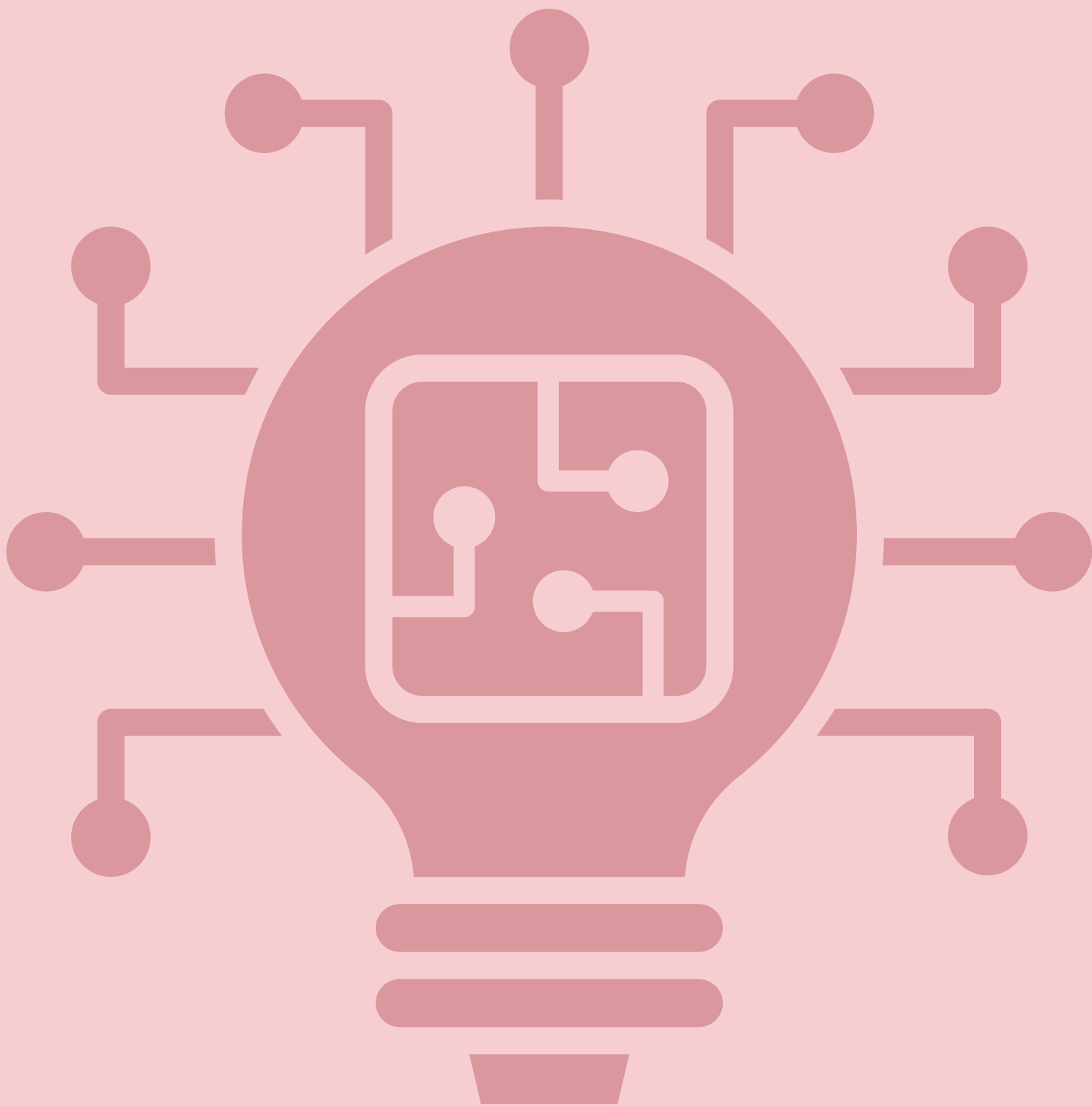
| Statement | I understand this well! | I somewhat understand this. | I'm unsure or confused by this. |
|---|-------------------------|-----------------------------|---------------------------------|
| I can explain what artificial intelligence (AI) is. | | | |
| I know how AI learns to do things using 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. | | | |

| 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?



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.

What You Will Learn



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.

2. AI Doesn't Know — It Guesses

After it's trained, the AI can look at a new photo and say, "This looks like a cat... probably."

It's not thinking like a person. It's just following the rules it learned from the training data.

3. The More It Sees, the Better It Gets (Sometimes)

Some AIs keep learning from new data.

- That means they can get better over time.
- But they can also mess up — especially if the data is confusing, limited, or unfair.

That's why humans still need to check what AI is doing.

AI in Real Life

Here are just a few ways AI shows up in your day:

- Your phone guessing what word you're typing
- YouTube or TikTok recommending videos
- Spotify building a playlist just for you
- Voice assistants answering your questions
- Search engines helping you find what you need



If AI can learn from patterns but doesn't feel or understand, what's something you can do that AI never will? Why does that difference matter?



Activity 1: Teach the AI; You Be the Coder

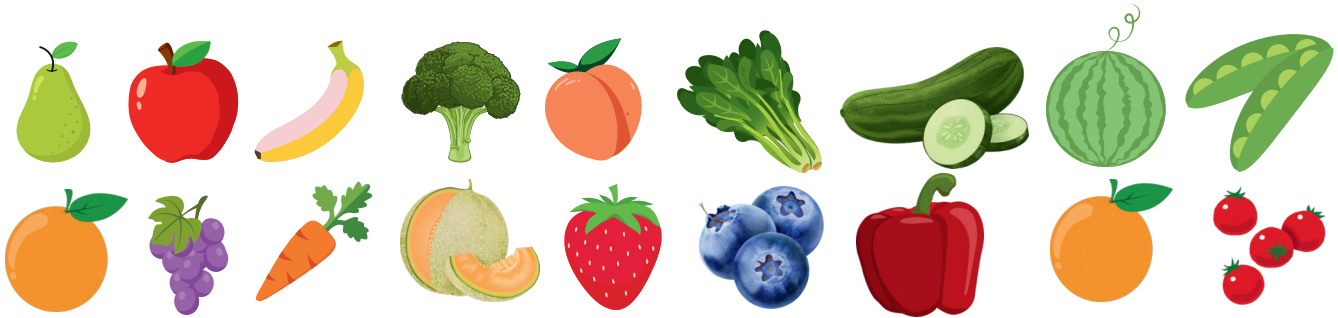
AI systems don't just guess. They follow instructions or rules based on data. A lot of this is built using something called 'if-then' logic. It's like saying:

- **If** the weather is rainy, **then** bring an umbrella.
- **If** the word ends in 'ing,' **then** it's probably a verb.

AI systems do the same — they follow rules and recognize patterns.

- **If** the image has four legs and fur, **then** it might be a dog.
- **If** the voice says “play music,” **then** start the playlist.

Look at the set of food below. Write 3–5 “if-then” rules that you would give the AI to help it decide whether the food is a fruit or vegetable.



IF-THEN Rules:

- *If the item is red, round, and grows on a tree, **then** it might be an apple (fruit).*

- _____
- _____
- _____
- _____
- _____



- Was it easy or hard to make rules?
- What might happen if the AI didn't have enough data?
- What if the data was wrong or confusing?



Activity 2: Rule-Based or Machine-Learning?

Not all AI works the same way. Some systems follow strict rules that never change. Others learn from examples and improve over time — this is called machine learning. Look at each example below and decide if it's more like a Rule-Based Tool (just follows instructions) or a Machine Learning Tool (learns and improves with data).

| Item | Type? (Rule-Based / Machine Learning) | How do you know? |
|--|--|------------------|
| A calculator adds numbers when you type them in | | |
| Spotify recommends new music based on what you've listened to | | |
| A chatbot that answers based on keywords (but gives the same answers every time) | | |
| An image app that improves its photo tagging based on user feedback | | |
| Autocorrect that changes "teh" to "the" every time | | |
| ChatGPT gives you different answers based on how you ask questions | | |



Activity 3: Predict like AI

AI tools often recommend music, videos, or posts based on your past choices. That's how machine learning works — the AI looks at patterns and makes a prediction. Use Jordan's profile below to answer the questions.

Jordan is 13 years old and uses an app that recommends music and videos based on what they've listened to or watched in the past week. Here's what Jordan has been enjoying lately:

Music History

Olivia Rodrigo – vampire
Billie Eilish – What Was I Made For?
Taylor Swift – Cruel Summer
Conan Gray – Heather
Lana Del Rey – Summertime Sadness

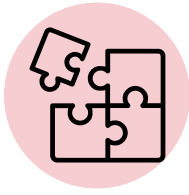
Video History

“Back-to-School Outfit Ideas 2025”
“10 Emotional Moments in Movies That Make Your Cry”
“Study With Me: Lofi Playlist and Timer”
“How to Make a DIY Mood Board”
“Room Makeover on a Budget!”

What kind of song or artist would you recommend to Jordan next? Why?

What kind of video might come up next in their feed?

What pattern do you notice in Jordan's preferences?



Activity 4: Quick, Draw! Like an AI

AI doesn't see like a person. It guesses what something is based on what it's seen before — this is called pattern recognition. In this activity, you'll see how well an AI can guess your doodles!

With a parent, teacher, or trusted adult's permission, go to:

<https://quickdraw.withgoogle.com>



This game will give you 6 things to draw, one at a time. You only have 20 seconds per drawing! Try your best to draw each item clearly, using your trackpad or mouse. As you draw, the AI will try to guess what you're making. Keep an eye on when it gets it right... or wrong.

After playing with Quick, Draw! answer these questions in a small group or written responses:

- What surprised you most about how the AI made its guesses?
- What do you think the AI is using to decide what you drew?
- How is this different from how a person would understand a drawing?



The AI behind Quick, Draw! doesn't actually understand your doodles. It was trained on millions of sketches and learned to predict patterns. When it sees your drawing, it's comparing it to what it's seen before — not “thinking” or “knowing” like you do.