

Day 2 Lesson Plan: Traditional vs. AI/ML Algorithms

Objective

Students will compare traditional algorithms with AI/ML algorithms and begin identifying ethical considerations tied to how each works.

Warm-Up

Algorithm Match-Up:

- Display a list of tech tools or platforms (e.g., calculator, Google Maps, Netflix, Spotify, Siri).
 - Prompt:
“Which tools follow clear step-by-step instructions (traditional)? Which ones seem to *learn* from data (AI/ML)?”
 - Students can discuss in pairs or vote as a class, then debrief the distinctions.
-

Mini-Lesson: How Are These Algorithms Different?

Introduce key concepts:

- A **traditional algorithm** is a fixed, step-by-step set of instructions — like a recipe or a to-do list.
→ Example: A calculator solving math problems using a defined formula.
- An **AI/ML algorithm** doesn’t follow a fixed recipe. Instead, it learns patterns from data — often making predictions based on what it has seen before.
→ Example: Spotify creating a playlist based on your past listening habits.

Make this real:

- Ask students to describe a time when a tech tool “knew” what they liked — and whether it got it right or wrong.

Then show:

 [Crash Course: Machine Learning & Artificial Intelligence](#) (~10 min)

Pause throughout to ask:

- “What does it mean for a computer to learn?”
 - “What are some ways machines are already learning in our everyday lives?”
 - “Why does the speaker say that machine learning isn’t always perfect?”
 - “What kinds of problems or risks can happen when machines learn from people?”
-

Activity: [Algorithm Sorting Challenge](#)

In small groups:

- Give [students 10–12 classroom or tech-related scenarios](#) (e.g., navigating a robot through a maze, scanning a photo for faces, sorting students alphabetically).
- Have them sort into two categories: **Traditional Algorithm** or **AI/ML Algorithm**.
- Then annotate any scenarios where ethical considerations might come into play (e.g., facial recognition and privacy).

Class Share-Out:

Review any tricky examples and highlight real-world gray areas where technologies might overlap.

Project Connection

Remind students that they’ll choose a tech product for their **Ethical Technology Case Study**. Prompt them to consider:

- Does the tech rely on a traditional algorithm or an AI/ML system?
- Are there any ethical trade-offs already emerging in what they’re noticing?

Students jot notes in their project planning doc or case study tracker.

Exit Ticket

“Write one benefit and one potential drawback of using AI/ML over traditional algorithms in everyday technology.”

Word Bytes (Vocabulary + Student-Friendly Examples)

Include these in the Word Bytes Journal:

- **Algorithm** – A calculator solving $5 + 3 \times 2$ using a specific set of steps.
- **Artificial Intelligence** – Siri answering a question based on what you said and what it has learned.
- **Machine Learning** – Netflix learning what shows you like by watching your viewing history.
- **Input** – Typing your question into Google.
- **Output** – Google showing the search results based on your question.