

Artificial Intelligence Merit Badge Workbook Preview

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Items in bold are the requirements. Non-bold items are just suggestions for activities or prompts to help..

1. Define the following terms and share the meaning of each with your counselor: artificial intelligence (AI), artificial intelligence agents, automation, basic programming, bots, data, databases, digital workers, general AI, machine learning (ML), narrow AI, superintelligent AI, tasks, triggers, workflows, and variables.

Activity: Match each term with the correct definition. Draw lines or write the number next to each term.

Artificial intelligence (AI)	1. Programs or systems that can act on their own to reach a goal, like a game character moving without you controlling every step.
Artificial intelligence agents	2. The idea of a future AI that would be smarter than people in almost every way. It is not real today.
Automation	3. Writing simple instructions a computer can follow, like giving step-by-step directions to a robot.
Basic programming	4. Small programs designed to do specific jobs, often online or in apps, such as chatbots that answer questions.
Bots	5. Organized collections of information stored so computers can find and use it quickly, like school records or photo libraries
Data	6. Information that computers use, such as numbers, words, or pictures. It is the raw material AI learns from.
Databases	7. Placeholders in programming that store information that can change, like a game score that goes up as you play.
Digital workers	8. Sets of steps followed in order to finish a job, showing how one task leads to the next until the work is done.
General AI	9. Events that tell a program to start a task, like an alarm going off at 7:00.
Machine learning (ML)	10. Jobs or actions that need to be done, from small things like sending an email to big projects like designing a bridge.
Narrow AI	11. Using machines or software to do jobs without someone watching every detail. It makes tasks faster and reduces mistakes.
Superintelligent AI	12. When computers are taught to think and make decisions in ways that seem like human thinking. They learn from information to solve problems.
Tasks	13. Software tools that act like human helpers for office jobs, handling repetitive computer work like filling out forms.
Triggers	14. AI designed to do one job very well, such as language translation or face recognition.
Workflows	15. AI that can learn and solve many kinds of problems, adapting to new situations like a person would.
Variables	16. Computers trained to learn from data and get better over time by finding patterns, without being told each step

2. Do the following and share what you learned with your counselor:

a. Identify 10 examples of how AI is currently used in everyday life.

Here are a few ideas:

- What apps on your phone seem to “know” what you want before you type it?
- When you watch videos or listen to music, how does the service decide what to suggest next?
- What tools or devices in your home seem to “listen” or “respond” to you?
- Where do you see computers helping with safety while traveling?
- What online services seem to block unwanted messages or content for you?

b. Identify 5 examples of how AI is currently used in the workplace

Consider this:

- How might a store or company use computers to help with customer questions quickly?
- In factories, what jobs are machines doing that people used to do?
- How might doctors or nurses use AI to make better health decisions?
- How could businesses use AI to decide what products to sell or stock?
- Where do you think offices use programs that fill out forms or check records automatically?

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