Artificial Intelligence Merit Badge
Updated: 11/11/25

- **ALL requirements must be handed in prior to the second class.**

Important information about how to prepare for the merit badge

Parents, please review the content of a merit badge prior to registering your Scout: some badges may be challenging for younger Scouts. Also, the class discussions are more interesting if Scouts submit *all* the requirements for the badge before the program. The chances of your scout completing all the work for the badge increases dramatically when they are properly motivated and the badge content is age-appropriate.

Merit badges are not designed to be completed in a day and require independent work on the part of the Scout outside of the workshop.

Parents and Leaders: Each Scout must complete the requirements individually. Group answers or copying from others will result in the requirements being rejected. You may provide resources to assist, but neither you nor anyone else may complete any part of the requirements on behalf of the Scout.

- It is the Scout's responsibility to fulfill the requirements, not the parent's. A Scout may use a parent's email account to submit their answers, but:
- It is not the parent's responsibility to scan or submit the Scout's work. This is the Scout's responsibility.

Parents should not act as the Scout's agent. All assignments must be completed by the Scout. If issues arise, the Scout must communicate directly with me, copying a parent or guardian on all correspondence.

IMPORTANT: For full credit for the badge, evidence of the requirements, as explained below, must be sent to: bill.nelson@scouting.org

The merit badge will be held in two sessions about 2 hours long each.

About blue cards: We will utilize Scoutbook.com and record requirement completion online. Blue cards can be printed by parents and unit leaders in Scoutbook by clicking on the Scout, the Scout's advancement, the merit badge, and print blue cards.

- TYPE OR WRITE LEGIBLY AND WHERE NOT ASKED FOR A LIST, IN COMPLETE SENTENCES.
- PUT YOUR NAME IN EMAILS TO ME AND IN ALL ATTACHMENTS
- READ THE REQUIREMENTS CAREFULLY, YOU MUST ANSWER THE REQUIREMENTS AND PROVIDE WHAT IS BEING ASKED FOR.
- COPY A PARENT OR GUARDIAN IN ALL CORRESPONDENCE

USE SCOUTLY IN ANSWERING THE REQUIREMENTS: The Artificial Intelligence (AI) merit badge has been designed for you to interact with the **Scoutly** chatbot on your learning journey as you work through the requirements. More information on Scoutly can be found at this link. Scoutly can be found on the bottom right of your browser at https://scouting.org. If you have a question about a requirement, ask Scoutly! This does not replace the requirement to identify and work with a counselor to complete the badge.

When asking Scoutly or any AI chatbot a question, phrase it in clear sentences.

For example:

- Please give me 10 examples of how AI is currently used in everyday life
- Can you tell me how to play "AI or Not?" game to determine if the presented scenario utilizes AI
- How do you work through rounds of the "What Would You Do?" ethical decision-making scenarios?
- Can you give me one "what would you do" ethical scenario to work through?

🗣 How to Write Great Chatbot Prompts
- Start with a clear question or request
  → Example: "What is photosynthesis?" or "Tell me a joke about cats."
- Use simple, direct language
  → Chatbots understand best when you keep it short and clear.
- Be specific when you can
  → Instead of "Tell me about animals," try "Tell me about rainforest animals."
- Add details if you want something creative
  → Example: "Write a poem about space in the style of Dr. Seuss."
- Use keywords like "explain," "summarize," or "list"
  → These help the chatbot know what kind of answer you want.
- Ask one thing at a time
  → If you ask too many things at once, the answer might get confusing.
- Try again if it doesn't work
  → You can reword your prompt or ask in a different way

Practice Prompts
Fill in the blanks or write your own!
1. **Explain** how _____ works.
   (Example: Explain how volcanoes work.)
2. **List** 3 facts about _____.
   (Example: List 3 facts about dolphins.)
3. **Write** a short story about _____.
   (Example: Write a short story about a robot in space.)
4. **Describe** what happens when _____.
   (Example: Describe what happens when you mix baking soda and vinegar.)
5. **What is** _____ and why is it important?
   (Example: What is recycling and why is it important?)

Requirements

1. **Key Concepts.** 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.
(Use a Word document or workbook and be prepared to discuss in class.)

2. **Artificial Intelligence (AI) Basics.** Do the following and share what you learned with your counselor:
(a) Identify 10 examples of how AI is currently used in everyday life. (Give me more than just listing a name for the answers to this requirement. Tell me what each item does.)
(b) Identify 5 examples of how AI is currently used in the workplace. (Give me more than just listing a name for the answers to this requirement. Tell me what each item does.)
(c) Identify 5 examples of how AI can be used at school or in support of your education. (Give me more than just listing a name for the answers to this requirement. Tell me what each item does.)
(d) Meet with your counselor and play 10 rounds of the "AI or Not?" game to determine if the presented scenario utilizes AI. Discuss your answers. We will do this one in class, you don't have to do anything at home for this requirement.
(e) Create a timeline with five key milestones in the development of artificial intelligence.
(Use a Word document or workbook and be prepared to discuss in class.)

3. **Automation Basics.** Do the following and share what you learned with your counselor:
(a) Identify 10 examples of how **automation** is currently used in everyday life. (Give me more than just listing a name for the answers to this requirement. Tell me what each item does.)
(b) Identify 5 examples of how **automation** is currently used in the workplace. (Give me more than just listing a name for the answers to this requirement. Tell me what each item does.)
(c) Identify 5 examples of how **automation** can be used at school or in support of your education. (Give me more than just listing a name for the answers to this requirement. Tell me what each item does.)

(d) Explain how **automation** performs repetitive tasks without human intervention and how it reduces human error and optimizes resources.

(e) Create a timeline with five significant milestones in **automation** development.

(Use a Word document or workbook and be prepared to discuss in class.)

4. **Ethics in AI.** Do the following and share what you learned with your counselor:

(a) Research ethical concerns and responsible use in AI, including bias, privacy, and AI decision-making.

(b) Meet with your counselor, play, and discuss 5 rounds of the "What Would You Do?" ethical decision-making scenarios.

(We will do this one in class, you don't have to do anything at home for this sub-requirement.)

(c) Develop your own ethical guidelines for the use of AI.

(d) What is the Turing test?

(Use a Word document or workbook and be prepared to discuss in class.)

5. **Deepfakes.** Do the following and share what you learned with your counselor:

(a) Explain what a deepfake is and how it can affect an individual.

(b) Describe what actions to take if you or someone you know is impacted by a deepfake.

(Use a Word document or workbook and be prepared to discuss in class.)

6. **Developing AI Skills.** Do the following and share what you learned with your counselor:

(a) Discuss the learning process for AI and its limitations.

(b) Identify 5 methods of how to effectively communicate with AI.

(c) Explain the importance of prompt engineering when using AI to create better output.

(d) Demonstrate 3 examples of writing clear instructions for a school-related task.

7. **Practical Application.** Do ONE of the following:

(a) With your counselor's approval, choose an artificial intelligence project based on your personal interest or a community need. Develop a plan outlining the project's objectives, data requirements, and potential ethical considerations. Implement the project utilizing appropriate artificial intelligence tools, languages, or platforms. Share your project with your counselor. Discuss the steps you followed to create the project and your experience during the process. (Send me your proposed project before you do it. After approval, share the results. Use a Word document to document this.)

> Resource: Google's Teachable Machine

(b) With your counselor's approval, design a short lesson plan on AI and teach it to your patrol of a group of Scouts. The lesson should include an AI-generated age-appropriate explanation of AI, examples of how AI is used in both everyday life as well as in the workplace, and an interactive demonstration of how Scouts could utilize AI to assist them with a school assignment, Scouting activity, or rank advancement. Share information on the development process and teaching experience with your counselor. (Send me a copy of your lesion plan and your development process for approval before you give it. After my approval, give your lesson and send me a note telling me your teaching experience.)

> Resources:
> What Is AI? | Learn all about artificial intelligence
> Google's AI Course for Beginners (in 10 minutes)! (If you already have a programming background.)

Here's a sample 15-minute lesson plan focusing on **"The Basics of Artificial Intelligence"**

🧠 **15-Minute Lesson Plan: Introduction to Artificial Intelligence**

🎯 **Objective**
Students will understand what AI is, identify examples of AI in daily life, and reflect on how it impacts their world.

⏱️ **Time Breakdown**

Time	Activity	Description
0–3 min	**Hook**	Ask: "Have you ever talked to Siri, Alexa, or used Google Translate?" Show a quick image or animation of AI in action.
3–7 min	**Mini-Lecture**	Define AI in simple terms: "AI is when computers learn to do things that usually need human thinking." Use 2–3 examples: voice assistants, recommendation systems, self-driving cars.
7–12 min	**Interactive Activity**	Hand out a worksheet or show a slide with 6 items (e.g., microwave, Netflix, Roomba, calculator, TikTok, traffic light). Students decide: "AI or not AI?" Discuss answers.
12–15 min	**Wrap-Up & Reflection**	Ask: "What's one way AI helps you? What's one thing you wonder about it?" Let 2–3 students share. End with a teaser: "Next time, we'll explore how AI learns!"

📝 **Materials**
- Slide or image showing AI examples
- Quick worksheet or visual aid (can be a simple graphic with labeled items)
- Whiteboard or projector

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8. **Career Exploration.** Do ONE of the following:

(a) Identify three career opportunities that would use skills and knowledge in artificial intelligence or automation. Pick one and research the training, education, certification requirements, experience, and expenses associated with entering the field. Research the prospects for employment, starting salary, advancement opportunities, and career goals associated with this career. Discuss what you learned with your counselor and whether you might be interested in this career. (Use a Word document or workbook and be prepared to discuss in class.)

(b) Interview an artificial intelligence or automation professional. Learn about their day-to-day work, the challenges they face, and their vision for the future of artificial intelligence or automation. Inquire about training, education, certification requirements, experience, and expenses associated with entering the field. Share what you learned with your counselor. (Use a Word document or workbook and be prepared to discuss in class.)