Presidential AI Challenge Mentor Guide

This guide is designed to support mentors working with youth participating in the Presidential AI Challenge. It follows the Invention Convention's seven-step process and includes guidance for Track I (Proposal Submission). If this challenge is going to be completed in groups, assign rotating roles to each group member, for instance, a group leader, a research leader, a coordinator, and a note-taker. Discuss with your youth about what the roles should be before you start.

- At the beginning of each meeting
  - Ask the youth to rate stress on a scale of 1–5 (using hands or sticky notes).
  - **Debrief:** If stress is high, pause for a 2-minute breathing exercise or peer encouragement circle.
  - **Prompt:** "What's one challenge you're facing, and how can the team help?"
- At the end of each meeting:
  - What went well in my leadership today?
  - What could I improve next time?

Track I: Proposal Submission

Identifying

Help youth choose a real-world issue they care about. Encourage them to think about how their solution will make the world a fairer and kinder place.

Possible prompts:

- Who will benefit from your AI solution?
- How does it help your community?
- How does it help the world?

Understanding

Guide them in researching the problem and exploring how AI could help.

Things to think about:

- What responsibilities come with building AI solutions?
- How can we use AI with integrity and honesty?
- What are you grateful for in your team's collaboration?

Ideating

Support brainstorming of AI-powered solutions. Encourage youth to consider who will benefit from their solutions and how those solutions will contribute to a greater purpose. Have them interview stakeholders. This may include others in the community, such as classmates or family.

During discussions, encourage youth to consider what they can learn from failure.

- *What happens if their solutions don't work?*
- *What ethical responsibility do we carry as AI creators?*
- *What long-term impact could this project have on others?*

Designing

Assist in sketching how the AI solution would work. Team roles are vital in this step.

Building

Create mock-ups or flowcharts to demonstrate the concept. This may be on paper or on a flowchart app. There are many available, or you may prefer to use a word processor.

Testing

Encourage feedback gathering and idea refinement. Even though they aren't building a solution, asking community partners or businesses, and other stakeholders for feedback is important here.

Facilitate a reflection on integrity: "Are we solving this problem in a fair and responsible way?"

Communicating

Support writing a clear proposal explaining the problem and solution. This may be a presentation or a paper. Incorporate **public speaking practice** and feedback from mentors/peers. Encourage youth to highlight their **future pathway connections** (college majors, careers, or volunteer work that relates to their project).

Virtual Mentoring Tips

-Contact your extension office for help setting up clubs and meetings in 4-H Online. Determine if meetings will be online or in person.

- Schedule regular check-ins either via Zoom or in person.
- Use shared documents or platforms (e.g., Google Docs, Padlet) for collaboration.
- Encourage youth to share progress and ask questions in a group chat or forum.
- Record sessions for youth who may miss live meetings.
- Create a safe and inclusive virtual environment for discussion.
- Add team reflections on group collaboration and wellbeing.

Troubleshooting Guidance

- If youth are unsure about AI tools, start with simple examples like chatbots or image generators.
- Encourage peer leaders and encourage collaboration to solve technical issues.
- Use online tutorials or help forums for platform-specific problems.
- Break down complex tasks into manageable steps.
- Reach out to challenge coordinators for additional support if needed.

Suggested AI Tools and Resources

- Teachable Machine (https://teachablemachine.withgoogle.com/) – for image and sound classification.
- Scratch with ML extensions – for building simple AI projects.
- ChatGPT – for exploring natural language processing.
- AI for Oceans (Code.org) – beginner-friendly AI activity.
- MIT App Inventor – for building mobile apps with AI components.
- https://extension.purdue.edu/4-H/get-involved/national-programs/4-h-presidential-ai-challenge.html