Presidential AI Challenge Mentor Guide Track II

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 II (Implementation). If this challenge is going to be completed in groups, assign rotating roles to each group member. For instance, group leader, a research leader, a coordinator, and a note taker. Talk 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?

Identifying

Guide youth in selecting a real-world problem they care about and want to solve with AI. This should be a real-world issue. Think about your community needs, fairness, and social responsibility.

Optional Interviews:

- **Activity:** Youth conduct 2–3 short interviews with peers, family, or community members who are impacted by the problem they want to solve.
- **Prompt Questions:**
  - What challenges do you face in this area?
  - What would a helpful solution look like to you?
  - What would make a solution feel fair and respectful?
- **Debrief:** Youth share key insights and adjust their project design.

Understanding

Guide them in researching the problem and exploring how AI can help. Before researching, discuss ethical AI, AI bias, and responsible use. Then help them explore AI tools and platforms.

Optional: Connect with a guest speaker from AI or a related field to share real-world career pathways.

Ideating

Support brainstorming of practical AI solutions. Encourage youth to consider who will benefit from their solutions and how those solutions will contribute to a greater purpose.

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 planning the technical structure of the solution. Start by sketching how the solution will work. This is where team roles will be vital.

Building

Help youth use accessible platforms to build a prototype, starting with mock-ups or flowcharts, accessible platforms such as Teachable Machine, Scratch, App Inventor, and others. Encourage peer-to-peer mentoring and celebrate **resilience** when challenges arise. Ensure that you include reflection: "What skills are you developing that could help in college or a future job?"

Testing

Encourage testing with real users and refinement. Help connect them with community partners or businesses who can provide authentic feedback.

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

Communicating

Support the preparation of a solution. This may be a presentation, paper, or application. 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