

8th Grade STEM – Final Project

AI System Design Project

Project Goal

Design an AI system that solves a real-world problem.

You will explain:

- How your AI works
- What data it uses
- What could go wrong
- How to improve it

Group Requirements

- Work in groups of 3–4
- Everyone must contribute
- Be prepared to explain your work
- Use Google Slides or Canva to create your presentation
- Make sure your project is shared with all group members so everyone can access and edit it

PART 1: Core Project

Choose a Problem

Your AI must solve a real-world problem.

Examples:

- School (studying, distractions)
- Sports (performance, injuries)
- Safety (home, online)
- Health (mental health, habits)
- Environment (pollution, energy)
- Technology (fake news, scams)

Design Your AI Solution

Explain:

- What your AI does
- Who it helps
- Why it matters

How Your AI Works

Use this format:

- Input: What data does it receive?
- Process: What does the AI do with the data?
- Output: What result does it give?

Data & Training

Explain:

- What data is needed
- Where the data comes from
- How the AI learns from it

PART 2: Real-World Thinking

Real-World Use Case

Explain:

- Where would this AI be used?
- Who would use it?
- Give a step-by-step example:

Example:

“A student opens the app...”

“The AI analyzes...”

“The result is...”

Comparing to Real Systems

Explain:

- Does something like this already exist?
- How is your AI similar to real-world systems?
- How is your AI different or better?

PART 3: Risks & Failure

Risks & Bias

- What could go wrong?
- Could your AI be unfair or biased?
- Who could be affected?

Failure Scenario

Describe ONE specific failure:

- What goes wrong?
- What causes the problem?
- What happens because of it?

PART 4: Solutions

How We Fix It

Explain:

- How to reduce mistakes
- How to reduce bias
- How to prevent misuse
- What improvements you would make

PART 5: Ethics & Responsibility

Explain:

- Is it fair to use this AI?
- Should people always trust it?
- Are there situations where it should NOT be used?
- Does it raise privacy concerns?

PART 6: Testing the AI

Explain:

- How would you test if your AI works?
- What would you measure?
- What would success look like?

Example:

“We would test the AI using different inputs and check accuracy.”

PART 7: User Experience

What the User Sees

Show or explain:

- What the app/device looks like
- What the user interacts with
- Buttons, screens, or features

(You may draw or design this in your slides)

FINAL SLIDE REQUIREMENTS

Your presentation must include:

- Title Slide
- The Problem
- The AI Solution
- How It Works (Input → Process → Output)
- Data & Training
- Real-World Use Case
- Comparing to Real Systems
- Risks & Bias
- Failure Scenario
- How We Fix It
- Ethics & Responsibility
- Testing the AI
- User Experience
- Why This Matters