Youth AI Researcher Program
Teaching Overview – Level 1 & Level 2 (G7–G11)

✅ Level 1: THINK

Theme: *AI Literacy, System Thinking & Research Mindset*
Target: G7–G11 students (English fluent, early researchers)

Session	Title	Key Focus
1	What is AI?	History, definitions, types (narrow vs general)
2	AI in the Real World	Applications in healthcare, finance, art, etc.
3	How AI Systems Work	Data → Model → Output → Feedback loop
4	AI Ethics & Social Bias	Bias, fairness, responsible AI use
5	Foundation Models & GPT	Intro to GPT, large models, generative AI
6	How to Think Like a Researcher	From observation to research framing
7	Reading an AI Paper	Abstract, visual structure, key takeaways
8	AI vs Human Thinking	Logic, intuition, emotion – a comparison
9	Prompt Engineering 101	How to ask better questions to AI systems
10	Mini Debate + Reflection	Ethical dilemmas, creative outputs, peer feedback

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✅ Level 2-A: BUILD (G7–8 Track)

Theme: *AI Tools & Technical Foundations – Visual & Beginner-Friendly*

Session	Title	Key Focus
1	Data → Model → Output	AI pipeline with visuals
2	Python Playground (1)	Edit & run basic code blocks
3	Python Playground (2)	Logic, loops, conditionals
4	Exploring Datasets	CSVs, graphs, patterns
5	What Makes a Model “Learn”?	Concept: label + prediction + training
6	Try a Pretrained Model	Teachable Machine or simple demo
7	Change the Prompt = Change the Output	Prompt engineering through play
8	GitHub Visual Tour	Fork, edit README, repo structure
9	Mini Project (Template)	Custom chatbot or image classifier
10	Showcase + AI Reflection	Present findings, express insights

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✅ Level 2-B: BUILD (G9–11 Track)

Theme: *AI Tools & Technical Foundations – Applied & Code-Focused*

Session	Title	Key Focus
1	Setup: GitHub + VS Code	Install, clone, explore repos
2	Python Refresher	Functions, variables, script structure
3	Pandas + Plotting	Clean and visualize real datasets
4	Stats + Model Interpretation	Variance, correlation, confusion matrix

Session	Title	Key Focus
5	ML Basics: Train/Test	Supervised learning intro
6	Build Your First Model	Use Scikit-learn for classifier
7	Tune & Evaluate	Improve accuracy, tweak parameters
8	GitHub Project Flow	Branching, commits, Markdown docs
9	Mini Project	End-to-end ML pipeline with custom dataset
10	Presentation + Peer Review	Live demo, code walkthrough, group feedback