AI in K-12 Education: Teaching in Practice - A White Paper

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Abstract

This white paper outlines the International School of Boston's (ISB) comprehensive approach to integrating Artificial Intelligence (AI) into K-12 education. We propose a dual-track framework that incorporates both student *AI literacy* and teacher implementation of AI, supported through curriculum development, professional learning, and ethical guidelines. Central to our approach is the idea that students develop *AI intuition*, a practical, experience-based understanding of AI, through guided experimentation, reflection, and critical engagement. We showcase strategies for using generative AI in STEM instruction, highlight the launch of a 9th-grade Innovative Technology course, and present pilot programs including STEM Research Seminars, summer internships, and AI-enhanced classroom activities. This paper offers a transferable framework to help schools equip students and educators with the skills and insight needed to engage with AI responsibly.

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Executive Summary

The rapid emergence of generative artificial intelligence (Gen AI) tools, such as ChatGPT, Perplexity, and Claude, marks a pivotal moment for K–12 education. Influencing how individuals and students produce and consume knowledge, these technologies offer powerful opportunities for personalized learning, critical thinking, and creative exploration. At the same time, they raise important questions about academic integrity, equitable access, and responsible use.

This white paper outlines the International School of Boston's (ISB) strategic response to this transformation, presenting a practical and scalable framework for AI integration across K-12 education. At the heart of ISB's model is a dual-track approach that addresses both student AI literacy and teacher AI implementation:

- On the **student side**, the focus is on developing not only technical fluency but also ***AI literacy***, the ability to understand, evaluate, and apply AI tools ethically and effectively. This includes fostering what we call ***AI intuition***: a hands-on, experience-based understanding that arises through experimentation, reflection, and guided exploration of AI systems.

- On the **teacher side**, the framework supports professional learning and instructional design that thoughtfully integrate AI tools, model ethical use, and promote deeper student learning across disciplines.

To bring this framework to life, ISB has launched several pilot initiatives:

- The **implementation of AI within our curriculum** in STEM and Humanities classes in secondary school as well as in elementary school.

- A **9th- nd 10th-grade Innovative Technology course**, using AI curricula and hands-on projects with tools such as Teachable Machine and Google NotebookLM;

- A **STEM Research Seminar**, where students explore AI-assisted research and gain experience with Gen AI as a tool for literature review;

- The upcoming **AI in K-12 Education: Teaching in Practice** conference (October 3-4, 2025), designed to share practical strategies for implementing AI across schools.

ISB is also cultivating a broader **AI Culture**, with initiatives such as guest speakers, AI field trips, and extracurricular clubs. These are complemented by a robust **Professional Development model** for faculty, including teacher training workshops, collaborative curriculum planning, and research grants. An internal **AI Activity Bank** provides classroom resources and sample lessons to support AI integration within classrooms.

This white paper offers a transferable roadmap for schools seeking to adopt AI in ways that are pedagogically meaningful and ethically sound. ISB's guiding principle is clear: develop AI literacy, not just fluency, and use AI to support deep learning, not replace it.

1) Introduction

1.1) AI and Education: Paradigm Shift and Challenges

While AI has been in education for decades (Fullan et al., 2024), the emergence of generative artificial intelligence (Gen AI) tools, such as ChatGPT, Perplexity, and Claude, has sparked a paradigm shift in education. It has the potential to substantially redefine and redesign the nature of teaching and learning (Cooper, 2023; Dobrin, 2023). These tools are hence transforming how students learn, how teachers teach, and how schools must respond to evolving technological demands. While students are increasingly using generative AI tools for both writing essays and STEM coursework, research suggests that their primary motivation in both contexts is often to complete tasks more quickly rather than to deepen their understanding. In writing, this can lead to formulaic essays that lack genuine critical thinking (Mineo 2025), while in STEM, it risks undermining students' ability to develop foundational skills and problem-solving abilities. The challenge, then, is not merely to acknowledge the growing presence of generative AI in education, but to ensure that students are equipped and trained to use these tools as genuine aids to learning.

Recent studies have highlighted both the promise and the challenges of Gen AI in K-12 education. Research shows that AI can support personalized learning (Rane 2023), enhance critical thinking (Sánchez-Ruiz 2023), and foster student autonomy. However, concerns remain: AI-generated outputs are not always accurate or unbiased, and overreliance on AI can diminish problem-solving skills and academic integrity (Lo 2023; Klopfer 2024), increase academic dishonesty (Hargreaves, 2023), or hinder creativity (Doshi et al.; Liu, 2025). Educators must therefore strike a balance, leveraging AI to deepen understanding, thinkink, and creativity, not replace it.

To summarize, recent literature underscores both the **promise and pitfalls** of Gen AI in K–12 settings:

- **Instructional Benefits**: Gen AI can support students in solving math problems (Dao 2023; Rane 2023), understanding coding syntax (Sánchez-Ruiz 2023), and exploring interdisciplinary research topics (Relmasira 2023). Its ability to provide personalized feedback, step-by-step guidance, and content summaries enhances engagement and autonomy.

- **Critical Thinking and Ethics**: Studies emphasize the need to teach students how to evaluate AI outputs, verify claims, and identify hallucinations or biases (Long 2020; Lo 2023). Without this, AI can undermine deep learning and foster overreliance.

- **Teacher Role**: As shown in MIT's AI initiatives (Klopfer 2024), educators must not only model ethical AI use but also adapt curricula, implement safeguards, and develop appropriate assessments that incorporate AI critically and responsibly.

- **AI Literacy Frameworks**: Scholars such as Touretzky (2019), Long (2020), and Zhang (2023) argue that AI literacy must go beyond coding skills. It includes understanding algorithmic bias, ethical implications, and real-world applications across disciplines.

- **AI Intuition:** Despite being almost absent from the academic literature, *AI intuition* can be framed as an emerging educational goal, emphasizing the value of experience-based understanding of AI systems developed through exploration, trial and error, and reflective engagement. Flechtner (2023, 2024) operationalized the idea in design education through embodied role play and hands-on prototyping with sensor-based machine learning, aiming to build technical literacy and creative capacity. In our view, AI intuition has the potential to complement formal AI literacy by fostering inductive, pattern-recognition skills that enable learners to navigate uncertainty, adapt strategies, and make informed judgments when interacting with AI systems. Building on this premise, we propose to formalize the concept through a clear definition and a general framework for its implementation in K-12 education, with a particular focus on the pedagogical use of generative AI.

To meet the challenges mentioned above, the International School of Boston (ISB) has adopted a comprehensive strategy grounded in **AI Literacy**, defined not just as technical proficiency, but as the ability to understand, critically evaluate, and ethically engage with AI technologies (Long 2020; Touretzky 2019; Zhang 2023), and complemented by **AI Intuition**, an experimentally driven, inductive approach to AI learning rooted in observation, trial-and-error, and reflective practice (Flechtner 2023; Flechtner 2024). While existing frameworks, such as AI4K12 and UNESCO, focus on articulating theoretical foundations and guiding principles, the present framework adopts a bottom-up approach developed over three years of iterative implementation in a specific K-12 context (ISB is an international, multilingual school with different curricula and students learning in different languages). It seeks to integrate conceptual understanding with practice-oriented competencies, enabling both students and teachers to navigate AI effectively and facilitating the organic incorporation of AI into school practices. Unlike large-scale models grounded in quantitative data, this framework is informed by longitudinal, practice-based observation and continuous adaptation to contextual constraints, including the accelerated pace of technological change, the premature or inappropriate adoption of AI tools by students, and the need to align professional development formats with institutional priorities and daily operational demands. Through cycles of design, trial, and revision, the resulting framework offers a tested, context-dependent model for making AI both accessible and pedagogically sustainable.

This white paper presents ISB's approach, organized around a **dual-track framework** for K-12 AI integration:

- **Track 1: Student AI Literacy**: cultivating core competencies in using, evaluating, and applying AI across subjects.

- **Track 2: Teacher AI Implementation**: supporting educators in integrating AI into instruction, planning, and professional practice.

In this white paper, we also share practical strategies, pilot programs (including a new 9th- and 10th-grade "Innovative Technology" course), and professional development models to illustrate how schools can responsibly integrate AI at scale. Our goal is not just to showcase one school's journey, but to inspire broader conversations on how AI can be used meaningfully and ethically in education.

The remainder of this paper is organized as follows:

- Section 2 introduces the dual-track framework and its educational rationale.
- Section 3 outlines policies and ethical guidelines for AI use.
- Section 4 reviews classroom initiatives, pilot programs, and partnerships.
- Section 5 explores the development of an AI culture at ISB.
- Section 6 concludes with future directions and strategic recommendations.

1.2) Background and Literature Review

Recent research highlights the rapidly growing integration of artificial intelligence (AI) into STEM education (Ouyang 2022, Lee 2022). However, the sudden emergence and widespread adoption of Generative AI (Gen AI), such as ChatGPT, has taken many educational experts by surprise, prompting institutions globally to confront emerging ethical, pedagogical, and practical challenges (UNESCO 2023; National Council of Teachers of Mathematics 2024).

A significant body of recent work now seeks to assess the educational impact of Gen AI across diverse educational contexts. For instance, regional studies conducted in Vietnam (Dao 2023), Massachusetts (Klopfer 2024), and Southeast Asia (Relmasira 2023) highlight both the potential and limitations of Gen AI tools. Specifically, Gen AI's influence on mathematics education and problem-solving skills has been extensively documented (Sánchez-Ruiz 2023; Rane 2023; Dao 2023; Barana 2023). Research underscores that Gen AI can fundamentally transform educational methodologies, notably blended learning approaches (Sánchez-Ruiz 2023). Additional comprehensive reviews and evaluations have further illuminated how Gen AI is integrated into K-12 curricula and its impacts across educational practices (Grover 2024, Kong 2024, Semwaiko 2024, Chiu 2024, Lee 2024).

Evidence demonstrates that Gen AI provides substantial benefits, including step-by-step guidance (Sánchez-Ruiz 2023; Rane 2023) and personalized feedback, which can significantly enhance student understanding and conceptual integration (Dao 2023; Rane 2023). Such personalized approaches require effective prompting strategies by students, thereby highlighting the critical role teachers play in guiding students' productive use of AI tools and avoiding over-reliance (Rane 2023). Properly guided students engage more deeply with content and exhibit heightened critical thinking abilities, systematically questioning the accuracy and reliability of AI outputs (Sánchez-Ruiz 2023; Rane 2023).

Nevertheless, challenges persist, including reliability concerns, the necessity of tailored feedback mechanisms (Sánchez-Ruiz 2023; Lo 2023; Rane 2023), and the potential for students to overly depend on AI, which could undermine critical thinking development (Sánchez-Ruiz 2023; Rane 2023) and the development of other core competencies. Consequently, educators must strategically foster reflective practices and critical AI literacy skills to ensure AI serves as an aid rather than a substitute for genuine learning.

Central to overcoming these challenges is the concept of AI literacy (Long 2020; Touretzky 2019; Zhang 2023; Relmasira 2023; Klopfer 2024). AI literacy involves understanding fundamental AI principles, developing technical fluency, critically evaluating AI outputs, communicating effectively about AI, and grasping its ethical and societal implications (Relmasira 2023; Touretzky 2019; Zhang 2023). Unlike mere technical proficiency, AI literacy integrates ethical considerations, critical thinking, and technical competencies.

Leading institutions, such as MIT, have significantly contributed to advancing comprehensive AI literacy through curricula development initiatives, including MIT App Inventor, the Day of AI Curriculum, MIT Raise Initiative projects, MIT Open Learning, and the MIT Scheller Teacher Education Program (MIT App Inventor, MIT "Day of AI Curriculum," MIT Raise Initiative 2024). These resources embody the constructionist learning theories developed by Piaget (1977), Papert (2005), and practically implemented by MIT educators like Hal Abelson (MIT App Inventor). Klopfer (2024) emphasizes the need for educators to engage experimentally with AI, critically evaluate its use, remain adaptable, and establish clear ethical guidelines and policies.

Furthermore, accessible resources for educators have expanded significantly, with entities like Google providing comprehensive online curricula and training materials for students and teachers ("AI for Education" 2024; "Guide to AI and Machine Learning" 2024; Experience AI 2024). Professional development opportunities through workshops, conferences, and training programs, such as the MIT Science and Engineering Program for Teachers (2024) and the AI and Education Summit (2024), offer educators critical support in adapting and refining their instructional practices with AI technologies.

Furthermore, formal AI education frameworks have emerged to provide structured guidance for K–12 integration. The AI4K12 Initiative, led by the Association for the Advancement of Artificial Intelligence (AAAI) and the Computer Science Teachers Association (CSTA), organizes AI concepts around *Five Big Ideas*: Perception, Representation & Reasoning, Learning, Natural Interaction, and Societal Impact. These are presented in grade-band progression charts (K-2, 3-5, 6-8, 9-12) with developmentally appropriate learning outcomes, emphasizing a *glass-box* approach (Touresky 2022) that promotes transparency in how AI works rather than treating it as a “black box”.

In parallel, UNESCO’s AI Competency Framework for Students takes a global perspective, defining twelve competencies across four dimensions; namely, human-centred mindset, ethics of AI, AI techniques and applications, and AI system design; each scaffolded through three progressive stages: *understand*, *apply*, and *create*. The framework prioritizes ethical, inclusive, and sustainable AI education, positioning students as informed users and responsible co-creators. UNESCO also provides an AI Competency Framework for Teachers, outlining fifteen key competencies across five dimensions, similarly structured in the stages of *acquire*, *deepen*, and *create*, to guide educators in integrating AI into pedagogy and professional practice.

More recently, the AI Literacy Framework for Primary and Secondary Education (AILit Framework), developed jointly by the European Commission and the OECD with support from Code.org and international experts, has taken a policy-aligned, assessment-driven approach to AI education (OECD & European Commission 2025). Designed to inform the PISA 2029 Media & Artificial Intelligence Literacy assessment, the framework aligns with the Digital Education Action Plan 2021–2027, the 2023 Council Recommendations on digital education and skills, and the EU AI Act, which mandates AI literacy for educators and deployers of AI systems. It complements the 2022 Ethical Guidelines on the Use of AI and Data in Teaching and Learning and the DigComp 2.2 digital competence model, embedding ethical considerations, inclusivity, and sustainability in AI education for both students and teachers, and integrating AI literacy into broader digital skills strategies supported by measurable assessment outcomes.

Finally, to our knowledge, the terminology of *AI intuition*, recently discussed by Flechtner (2023, 2024) in the context of university design education, has not yet been explored in K-12 settings, in relation to Generative AI, nor formalized as a general concept. In Flechtner's work, AI intuition refers to an experience-based, practical understanding of AI technologies developed through playful, low-threshold activities and hands-on prototyping with tools such as sensor-based machine learning, aimed at fostering both technical literacy and creative capacity. In this white paper, we propose to extend and formalize the concept, positioning it alongside AI literacy as a complementary pedagogical goal and demonstrating how it can be implemented in K-12 education, particularly for generative AI systems.

2) Framework for AI Teaching and Learning

2.1) AI literacy: a new paradigm for education

In this section, we summarize the concept of AI literacy and explain how it aligns with our goals for K-12 education. For further details, see the article (Beau 2025a) published on the ISB Global Learning Blog.

2.1.1) Generative AI: A Transformative Educational Tool and Its Challenges

The emergence of Generative AI (Gen AI) technologies, such as ChatGPT, represents a turning point in education (Cooper, 2023). These tools offer significant potential for personalized learning, enhancing problem-solving skills, and streamlining tasks like coding; they have tremendous power to accelarate learning (Fullan, 2025). However, despite their growing visibility in STEM education, effective student use of Gen AI remains limited, and several challenges must be addressed (Klopfer 2024):

- **Over-Reliance:** Students may rely on AI to provide answers without developing a full understanding of the underlying concepts.
- **Accuracy and Bias:** AI-generated outputs can be flawed or biased.
- **Ethical Concerns:** Misuse can lead to academic dishonesty and plagiarism.

To meet these challenges, the International School of Boston (ISB) prioritizes **AI literacy** over mere technical proficiency, emphasizing a balanced approach that integrates technical fluency, critical evaluation, and ethical awareness.

2.1.2) What Is AI Literacy?

AI Literacy refers to the ability to understand, evaluate, and engage with artificial intelligence in ways that are technically informed, critically reflective, and ethically grounded. It goes beyond mere coding or tool use; AI literacy encompasses a comprehensive understanding of AI concepts and their broader implications. As outlined in (Relmasira 2023), (Touretzky 2019), (Long 2020), and (Zhang 2023), key components of AI literacy include:

- **Technical Skills**: Understanding how AI models work, basic programming, and the inner mechanisms of AI systems.
- **Critical Thinking**: Assessing AI outputs for accuracy, potential biases, and overall reliability.
- **Ethics and Society**: Considering the legal, ethical, and societal ramifications of AI technologies.

- **Communication**: Using AI tools to articulate ideas clearly and collaborate effectively.

This multidimensional approach prepares students not only to use AI but to understand its role in society and to contribute thoughtfully to its development and application. Much like language literacy extends beyond grammar to critical interpretation and cultural context, AI literacy empowers students to navigate, question, and ethically apply AI in academic and real-world settings.

2.1.3) Teaching AI Literacy: From Theory to Practice

At ISB, we view AI literacy not as a set of abstract concepts to be memorized, but as a set of **practices to be embodied**. While foundational knowledge, such as understanding how models are trained, or how algorithmic bias emerges, is necessary, it is not sufficient. Students only begin to develop true literacy when they are asked to **interact with, test, and reflect on** AI tools in realistic settings.

This is why we emphasize **learning by doing**. Through hands-on activities and guided experimentation, students are exposed not only to what AI can do, but also to what it fails to do. They witness firsthand how models behave unpredictably when trained on biased or incomplete data, or how generative AI tools can produce incorrect or misleading outputs. These moments of failure are not setbacks—they are essential learning opportunities. They help students develop a more nuanced, critical relationship to the technology.

One example is our 9th grade **Innovative Technology course**, which gives students structured opportunities to build, evaluate, and present AI-based projects. (This course is described in more detail in a later section.) Rather than passively consuming AI-generated content, students engage in a cycle of **creation, critique, and revision**, learning to identify errors in outputs, adjust training data, and ask whether their tools reinforce or challenge existing biases.

Equally important is the role of feedback. Students often assume that AI outputs are authoritative. We challenge this assumption by constantly prompting them to **verify, justify, and reflect** on the results they obtain. In both technical tasks and classroom discussions, teachers provide regular feedback that encourages metacognition: *Why did your model behave this way? What could you have done differently? What assumptions shaped your choices?*

This pedagogy transforms AI from a passive utility into an active subject of inquiry. It reinforces that AI literacy means not only using tools competently, but understanding their limitations, questioning their authority, and thinking critically about their role in society.In short, we aim to ensure that students don't just know about AI, they learn to think with it, through it, and beyond it.

2.2) A Dual-Track Framework for Responsible AI Use: Student Literacy and Teacher Implementation

To support the responsible integration of AI in K-12 education, we propose a dual-track framework that addresses both **student AI literacy** and **teacher AI implementation**. This framework is designed to guide schools in building foundational competencies, supporting ethical use, and fostering long-term engagement with AI technologies.

Each track is organized into four core **categories of competency**, each with a **description** of its purpose and **concrete examples** to illustrate classroom application. The framework aims to be flexible, scalable, and adaptable to various learning environments.

2.2.1) Track 1: Student AI Literacy

Track 1: *Student AI Literacy* outlines the knowledge, skills, and dispositions (notably ethical awareness) students need to engage with AI critically, creatively, and responsibly. It covers four key areas (see **Table 1** below): understanding core AI concepts and recognizing AI in everyday tools; applying AI effectively and imaginatively for tasks like research, design, and content creation; evaluating AI outputs for accuracy, bias, and limitations through critical thinking; and practicing ethical use by addressing bias, privacy, and integrity concerns, ensuring students can navigate AI's opportunities and challenges with informed judgment.

Category	Focus	Description	Examples
1. Understand AI Concepts	Foundational Knowledge	Grasp basic AI principles, including how AI learns from data and its presence in daily life.	Define AI as "computers learning patterns"; recognize AI in tools like Spotify or Siri.
2. Use AI Tools Effectively and Creatively	Applied Skills	Engage with AI tools to support tasks such as brainstorming, content generation, or design.	Use Generative AI tools for research; use image generators for creative projects; practice effective prompting.

3. Evaluate AI Critically	Critical Thinking	Analyze AI outputs for accuracy, bias, and limitations; develop skepticism and verification habits.	Ask: "Is this response accurate?"; compare results to trusted sources; recognize hallucinations.
4. Apply AI Ethically & Responsibly	Ethical Use	Understand issues of bias, privacy, and integrity; apply responsible AI practices.	Discuss data privacy; cite AI assistance; reflect on AI's impact on jobs and society.

Table 1: Student AI Literacy's framework

2.2.2) Track 2: Teacher AI Implementation

Track 2: *Teacher AI Implementation* focuses on empowering educators to integrate AI into their practice to enhance teaching, personalize learning, and streamline workflows, while modeling ethical and effective use for students. It emphasizes four areas: enriching instruction through AI-generated materials and activities; providing personalized support and feedback to meet diverse learning needs; improving efficiency in planning and administrative tasks; and ensuring ethical practice by addressing bias, protecting privacy, citing AI use, and setting clear policies (see **Table 2** below). The guiding principle is to balance innovation with reflection, technical skill with ethical responsibility, and teacher empowerment with student agency.

Category	Focus	Description	Examples
1. Content and Instruction Enhancement	Pedagogical Support	Use AI to design materials, create varied tasks, and enrich classroom instruction. *Note:* Always check material before use	Generate math problems; draft quizzes; brainstorm project ideas.
2. Personalized Support and Feedback	Differentiation	Leverage AI for individualized instruction and feedback.	Identify common errors; use AI tools for scaffolding; guide students with vetted tutors.

3. Workflow and Planning Optimization	Efficiency	Use AI to save time on administrative and planning tasks.	Draft lesson plans; summarize articles; automate objective grading.
4. Apply AI Ethically and Responsibly	Ethical Practice	Ensure AI use complies with educational standards and models ethical behavior.	Vet tools for bias; maintain student privacy; model citation; communicate clear policies.

Table 2: Teacher AI Implementation's framework

2.3) Developing AI Intuition: From Experimentation to Understanding

2.3.1) AI Intuition and inductive approach

In our approach to AI education, we introduce and emphasize a concept we call **AI intuition**, a pedagogical recognition that learning to use AI effectively is not merely a cognitive process rooted in theory, but an experiential journey grounded in exploration, trial and error, and emergent understanding. Our perspective resonates with recent work by Flechtner (2023), who identified the need to develop *AI intuition* for design students after several years of studies in a university lab and proposed ways to integrate it into curricula, particularly through accessible educational platforms such as Teachable Machine, Tiny Motor Training, ml5.js. They also advocate for the creation of dedicated **AI labs** in design schools as hubs for experimentation, technical support, and curriculum integration. While their studies focus on university-level design education, we adapt the concept here for **K-12 students** who are discovering AI tools for the first time. Flechtner (2024) further operationalizes the idea of AI intuition through embodied role play and hands-on prototyping with sensor-based machine learning, enabling students to critically assess whether AI is necessary for their projects ("Do we need AI?") and to avoid over-reliance on the technology. While their focus is on cultivating technical literacy and creative prototyping with sensor-driven AI systems, our approach extends the concept to a broader range of AI applications, particularly **generative AI**.

Our interest in AI intuition stems from the observation that AI tools, particularly generative AI, function as a kind of experimental science, in which the tool itself becomes the new object of study. Learners, first teachers, then students, engage with it through exploration and play until they develop a "gut-feeling" understanding of its behavior. This process complements AI literacy, and both skills should be cultivated in parallel. While AI literacy provides the general theoretical framework, as discussed in the previous section, AI intuition develops the practical wisdom needed to work effectively with the tool, thereby deepening the learner's grasp of the paradigms introduced by AI literacy.

We believe that an experimental approach is key to first exploration of AI by students, not only for pedagogical reasons, but also for foundational aspects of AI. While AI systems are built on deterministic algorithms, the complexity of their behavior, shaped by vast training datasets and the richness of natural language input, makes their outputs highly context-dependent, and at times unpredictable. Much like weather forecasting before the development of modern meteorology, students encountering generative AI for the first time often behave like early observers of natural phenomena: they try things out, see what happens, imitate others, adjust their strategy, and slowly develop a practical sense of how the system behaves. Because of the inherently unpredictable nature of AI, purely rationalistic and deterministic educational approaches are insufficient. This is why AI education must combine both the rational and intuitive dimensions of intelligence, enabling children to engage with AI through logical understanding and experiential, exploratory learning.

This experiential mode of learning is what we call *AI intuition*, an embodied understanding that emerges from direct interaction with AI systems. It is inductive, not deductive. Students learn how to prompt, what to expect, and when to trust or doubt the results, not from a manual or a lecture, but from experience: from failing, refining, adapting, and reflecting. Like learning to ride a bicycle or play an instrument, developing AI intuition is a process of tuning one's perception to a complex tool and gradually gaining confidence and control.

Of course, as educators, we do not leave students alone in this process. Just as in math or science education we guide students from intuitive grasp to formal understanding, we support the development of AI intuition through structured, objective-based tasks, open-ended experiments, reflective questioning, and peer discussion. We create conditions in which students can (see **Table A1 in Appendix A** for further details):

- **Test the limits** of AI tools and **observe** when and why they break down;
- **Compare** different prompting strategies and **refine** their technique;
- Notice **patterns** and develop productive **heuristics**;
- **Learn from mistakes** and build toward more effective uses.

AI intuition thus becomes a stepping stone toward more advanced understanding. It precedes and complements formal concepts such as algorithmic fairness, model interpretability, or prompt engineering. It empowers students to navigate uncertainty and to treat AI not as magic, but as a tool with patterns they can master. In an age when generative AI systems are changing rapidly and often operate as black boxes, cultivating AI intuition is not just pedagogically effective, it is essential. It offers students a way to make sense of AI through personal discovery, guided reflection, and shared learning. As educators, our role is to model curiosity and encourage observation, so that students gradually transform from passive users of AI to reflective, intuitive, and reflective users.

2.3.2) AI Intuition: A Dual-Level Educational Approach

In our framework for AI education, *AI intuition* is the experiential, embodied understanding of AI's capabilities, limitations, and behaviors that emerges from sustained, guided interaction with AI systems. It is not acquired through theory alone, but through a process of exploration, trial and error, pattern recognition, and reflective discussion.

At its core, AI intuition is **inductive** rather than deductive. Students learn to anticipate, evaluate, and adapt AI outputs by *doing*, i.e., prompting, observing, refining, and re-trying, much as one learns to ride a bicycle, play an instrument, or adjust a scientific experiment. This process fosters a tacit "feel" for how AI behaves under different conditions, when it can be trusted, when it fails, and how to respond.

We distinguish **two complementary levels** of AI intuition (see **Table A2 in the Appendix A** for an operational description of the dual-level model):

- **Level 1 : General AI Intuition (Cognitive–Reflective Layer):**
  Students develop broad, transferable heuristics for working with AI systems. Through open-ended experiments, guided questioning, and peer exchange, they learn to test limits, notice behavioral patterns, compare strategies, and make informed judgments more rapidly or under uncertainty. This stage precedes formal study of topics such as algorithmic fairness, interpretability, and prompt engineering, and prepares students to see AI not as "magic" but as a tool with knowable patterns. However, it is a complementary part of the AI Literacy, in which technical proficiency, theoretical background, and ethical aspects of AI is taught. The AI intuition is developed through the learning process and built up, so that students develop, with time, a better understanding of how to use AI properly and efficiently. In our school, we develop Level 1 in the 9MYP Innovative Technology course.

- **Level 2 : Domain-Specific AI Intuition (Embodied–Technical Layer):**
  Students apply their general intuition within a specific technological domain, treating AI as a "design material" that can be shaped to create new solutions. This involves hands-on work with domain-relevant tools, such as training and deploying machine learning models on microcontrollers, collecting and interpreting sensor data, or integrating AI into robotics or scientific instrumentation. Through iterative prototyping and testing, students gain the technical literacy, vocabulary, and design skills necessary to create feasible, innovative AI-powered applications. This approach aligns with Flechtner and Kilian's (2024) design-education model, which uses embodied role play and exploratory prototyping with sensor-based machine learning to cultivate a tactile understanding of AI as part of the design process. In our school, Level 2 is developed in the 10MYP Innovative Technology course using a project-based approach.

By moving intentionally between **Level 1** and **Level 2**, students gain both the *breadth* to navigate AI systems critically across contexts and the *depth* to work creatively and competently within a chosen application area. This dual-level model supports the progression from intuitive grasp to formal understanding, ensuring that students are not only passive users of AI, but reflective, adaptive, and technically capable co-creators of AI-driven solutions. Therefore, AI intuition serves as both a competence and a pedagogical tool, enabling students to develop the practical wisdom and the ethical-theoretical foundations necessary to fully embody the mindset of AI literacy.

3) Policies and Guidelines for Responsible AI Use in Education

As the use of generative AI tools becomes increasingly integrated into classrooms, it is critical for schools to establish clear policies that promote ethical, transparent, and pedagogically sound practices. At ISB, we have developed a set of guiding principles to ensure that AI is used not only as a tool for innovation but also as a means to cultivate critical thinking, autonomy, and academic integrity.

3.1 Ethical Use and Academic Honesty

ISB is committed to teaching students how to use AI responsibly. While generative AI can support learning by offering suggestions, feedback, and inspiration, it can also create shortcuts that undermine comprehension and original thinking if not carefully supervised.
We have therefore implemented the following guidelines:

- Students must disclose AI use in homework or assessments when applicable.
- Teachers are encouraged to design assignments that promote reflection and interpretation over rote production.
- Flextime methodology sessions are offered to help students practice effective AI prompting, critical reading of outputs, and version tracking of AI-assisted work.
- Academic honesty policies have been updated to include clear expectations around AI use, aligned with IB guidance.

3.2) AI policy for students and teachers

The International School of Boston's 2024–2025 AI Policy outlines a balanced approach to integrating generative AI into teaching and learning while prioritizing the development of core academic skills such as writing, research, and critical thinking. AI is recognized as a supplemental tool, not a replacement for student engagement or original thought. The policy emphasizes contextual teacher guidance, ethical use, citation practices, and student understanding of plagiarism and bias. Teachers are encouraged to monitor AI usage, clearly communicate expectations for each assignment, and foster discussion and collaboration around AI-supported learning. A chart of acceptable versus unacceptable uses provides practical clarity, ensuring that students understand the boundaries of responsible AI use. Overall, the policy promotes thoughtful integration of generative AI to enhance, not undermine, the learning process. **Table 3** below summarizes the policy.

Policy Focus Area	Goal	Examples
Supplemental Use Only	Ensure AI supports, not replaces, student learning	Use AI to brainstorm ideas, clarify complex vocabulary, or suggest research directions
Contextual Guidance	Help students understand appropriate AI use	Teachers define tool limits and purpose for each assignment
Critical Evaluation of AI	Develop analytical thinking around AI outputs	Students question accuracy, bias, and completeness of responses
Writing & Research Skills	Prioritize independent work and academic skill development	Writing done primarily in class; research verified through multiple sources
Academic Integrity	Prevent plagiarism and misuse of generative tools	Students must cite AI use if allowed; AI-only answers are not permitted
Teacher Oversight	Monitor and guide student use of AI tools	Feedback provided regularly; AI guidelines embedded in assignment instructions
Clear Assignment Guidelines	Clarify whether AI is allowed for each task	Examples: "AI Use: No" or "AI Use: Clarification Only" included in assignment header
Acceptable vs Unacceptable Use	Provide specific boundaries for AI engagement	Clarifying passages or summarizing vocabulary is ok Writing essays or generating full answers is NOT ok

Table 3: Summary of the AI policy at the International School of Boston

3.3) Teacher's guideline

The International School of Boston has developed a comprehensive set of employee guidelines to ensure the responsible and effective use of generative AI tools in education. Grounded in ethical principles such as transparency, privacy, and respect for human dignity, the policy emphasizes that AI should assist, not replace, original human creativity and judgment. It outlines expectations around originality, content accuracy, data protection, and adherence to ISB's core values. Specific examples of permitted uses for teachers and administrators include content generation, communication support, personalized learning resources, and data analysis. Importantly, the policy strictly prohibits the submission of personally identifiable or sensitive data into AI platforms and mandates reporting of any misuse or risks. ISB also commits to ongoing training and policy review in response to the evolving AI landscape, reinforcing its commitment to both innovation and accountability. **Table 4** below summarizes the guidelines.

Focus Area	**Guideline / Expectation**	**Examples**
Purpose & Definition	GenAI supports—but does not replace—originality or human insight.	Use AI to streamline tasks, not to generate full reports or replace professional judgment.
Ethical & Legal Compliance	All AI use must align with laws, ISB policies, and ethical standards.	Do not generate discriminatory or harmful content.
Privacy & Data Protection	Never submit personal, academic, health, or sensitive data to AI platforms.	Avoid entering student names, grades, or personal information.
Content Accuracy	Employees must verify AI-generated content for correctness and relevance.	Check AI-written summaries or materials against reliable sources.
Use Cases – Teachers	AI can assist in lesson planning, quiz creation, grading support, and instructional content generation.	Create custom worksheets, simulate classroom discussions, draft emails or rubrics.
Use Cases – Administrators	AI may automate communication, reporting, curriculum planning, and data analytics.	Draft newsletters, analyze attendance trends, help with grant summaries.
Training & Oversight	Employees will be trained on AI best practices. Use is monitored and reviewed by the AI Working Group and SLT.	Adjustments to policy made regularly based on technology changes and feedback.
Accountability & Reporting	Staff must report misuse, inaccuracies, or breaches to supervisors and IT.	Report any AI content errors or violations of ethical use.

Table 4: Summary of the AI Employees' Guidelines at the International School of Boston

4) AI within our classroom and pilot programs

In this section, we first present our key approaches to implement AI within our classroom and will review our pilot courses that teach AI and other skills through AI.

4.1) Implementation of AI within our classrooms

There are two key approaches to consider when developing AI activities for students. The first involves **testing Generative AI**, where students become familiar with the software, identify its limitations, and develop their prompting techniques. This process helps them build technical skills and critical thinking about AI outputs. The second approach focuses on creating **AI-assisted learning materials**, where students can use AI tools to explore topics more deeply or practice problems with AI support, either independently or under teacher supervision. Both approaches require students to be actively engaged rather than passively receiving information. An effective AI activity should include clear guidance and regular feedback to prevent over-reliance on AI for problem-solving. Key steps in developing such activities include detailed lesson plans, implementing and testing the activities in the classroom, and reflecting on and refining the approach based on student progress and feedback.

When developing an AI activity, several important steps should be kept in mind to ensure its effectiveness:

1. First, **create an activity** designed to enhance students' learning through AI, ensuring there are sufficient sequences to guide students and provide constant feedback, preventing reliance on AI for automated problem-solving.

2. Second, write a **comprehensive lesson plan** to organize these sequences and outline the evaluation of the activity.

3. Third, **test the activity** with students in class and monitor their progress closely.

4. Finally, **reflect** on the outcomes and modify the lesson plan and activity as needed to better suit the student's needs and improve the learning experience.

We provide examples of the use of Gen AI in the STEM and humanities classes in Table 5 below and a list of activities in our AI Bank.

Subject	Integration of Generative AI & Learning Principles
Math	● AI assists in translating word problems into equations (supports conceptual understanding). ● Refines math writing and solution phrasing (enhances clarity and communication). ● Promotes problem-solving autonomy under teacher guidance. ● Assist python code creation.
Science	● Design diagnostic and formative quizzes (Google Forms QCM, Kahoot) that automatically provide feedback to students. ● Help to generate differentiated problem sets (same concept, different levels of difficulty) so students can practice according to their needs. ● Help to generate differentiated problem sets (same concept, different tasks) so that students can train experimentally, taking either the role of the candidate or the examiner. ● Support in finding a research question and building an outline for projects. ● Create summaries of lessons and synthetic sheets. ● Propose experimental scenarios or variations of lab activities (and adapt to available equipment). ● Ask students to use AI for explanations of scientific concepts in their own words, then we compare and critically analyze the accuracy.
Technology/ Design	● Implement AI within Design projects ● Activities designed to combine AI use with conceptual understanding (blends theory and practice)
Coding	● Python programming enhanced with AI (facilitates skill acquisition). ● AI generates or completes code lines (promotes iterative learning and debugging). ● Code interpretation and use assistance. ● Debug and improve code.
English	● Use Playlab.ai to create a tool which provides an audience lens in interpreting student poetry, testing "intent vs. impact" in communication. ● use AI-powered sites - CommonLit (reading) and Quill (grammar) - to build skills and provide tailored feedback; students generate images for visual arguments using Canva and WeVideo AI image generators.
Elementary School	● Example of activities for the students with MagicSchool: text rewriter, writing feedback. sentence starters, image generator. ● Example of activities for the teacher : lesson plan, rubric generator, DOK questions, 5E model lesson plan, choice board (UDL), multiples explanations.

Table 5: Integration of Generative AI Across Subjects

4.2) AI-assisted Research with High School Students

In 2022, we created a STEM Research Seminar course at ISB for junior students. This one-semester one-hour/week course is open to students interested in doing a summer internship. This course is designed to introduce students to academic research standards. Students study techniques to conduct research on a topic in the STEM fields, learn how to communicate efficiently with their peers about their research work and develop networking skills with the scientific community. In the curriculum, we included technology training, such as latex typesetting, spreadsheets, and Python coding. This year, we trained students to use Generative AI tools for different tasks. First, Generative AI is a great tool to develop students' **latex typesetting skills**, e.g., Chat GPT or Claude can give latex template code that can be inserted in a latex document or can complete/correct lines of codes. Second, Perplexity, Elicit can be used to **search for documentation** (articles, lecture notes, etc…) on a specific topic and to provide online access to the sources. It can also be used to **summarize PDF files**, which helps students grasp the core material of a research paper. It is nevertheless important to show our students the limitations of using Generative AI tools, particularly for citing papers. This task is not properly performed by these AI tools and students should use standard research methods to find the correct citation of a reference. Examples were shown to our students in this class to warn them of the potential improper use of AI tools.

Finally, 11th and 12th grade students have been taught how to use the **Google NotebookLM** platform to assist their bibliographical research by asking questions on the resources provided by the user, generating AI podcasts based on that information. It is important to note that NotebookLM relies solely on the sources provided by the user for their project. This reduces the risk of AI hallucinations and forces students to first find and evaluate their own resources, as well as critically assess the AI-generated outcomes.

4.3) MIT internship and machine learning.

For the past three years, ISB has developed a partnership with MIT, specifically with Prof. Muriel Médard's research team (Network Coding and Reliable Communications Group) at the Research Laboratory of Electronics (RLE), see Figure 2. The partnership involves four to six ISB students participating in a summer internship. During these internships, they collaborate with post-doctoral researchers and Prof. Médard on advanced research projects that involve machine learning applied to communication. Last year, with the guidance of their mentors, five of our students successfully adapted a neural network code written in Python to calculate the mutual information between images. They produced a five- to ten-page report using LaTeX typesetting and delivered an oral presentation at the lab at the end of their six-week program. As a visiting researcher in the lab, I had the opportunity to mentor and observe the students during their internship. This experience demonstrated that the concepts of **machine learning** can be made accessible to high school students through a project-based learning approach with appropriate guidance and background instruction.

Another interesting aspect I observed in the evolution of students' practice is that they are using Gen AI more systematically, in particular in what concerns Python programming. They use it in different manners. First, as described in Section 2.1, they use Gen AI to help them **find code lines** that are missing in their larger code. Second, Gen AI was useful for them to **interpret a code,** a code they did not know and had trouble understanding. This was a feature I did not know before this summer and from my experience as an educator and from the feedback of my students, it is a very useful tool that develops their ability to work independently. However, I observed that students often trust ChatGPT blindly and can be misled by errors because generative AI cannot fully interpret human needs. Additionally, once the code has comments written on it, students may understand the structure and use the code independently, but often do not systematically explore the underlying concepts and the final purpose of the code. Therefore, it is important to monitor students closely and guide them through the learning process until they become independent and develop a deep understanding of AI. This approach ensures that students not only gain AI literacy skills but also the critical thinking necessary to apply these tools effectively and responsibly.

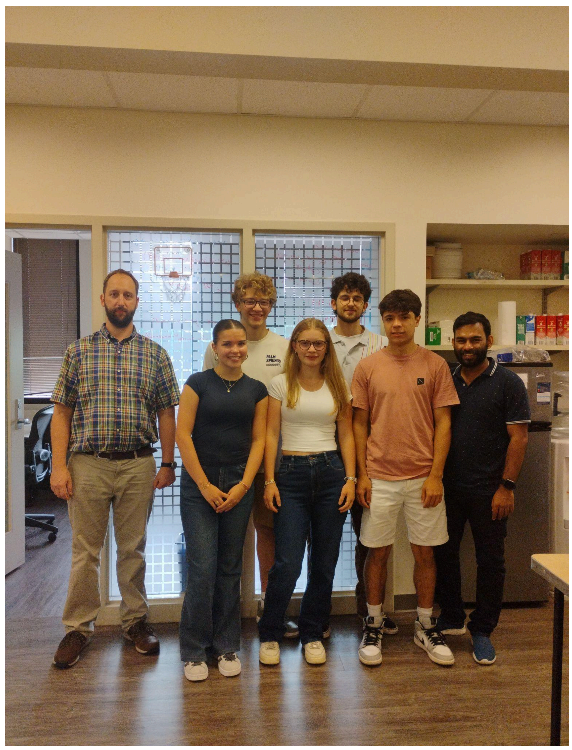

Figure 1. MIT-ISB Internships. Pictures of the students from ISB participating in the MIT internship during the summer of 2024, with their mentors: Dr. Beau (left) and Dr. Vipindev Adat Vasudeva (right) .

4.4) Pilot program: Innovative Technology Course.

In 2024-2025, ISB launched a new 9th-grade course entitled "Innovative Technology," where AI was integrated into the curriculum. The pilot course aimed to introduce students to AI technologies, including basic machine learning concepts and generative AI, using resources such as the Dayofai and MIT Raise Initiative curricula (MIT "Dayofai," MIT Raise Initiative "Raise Playground"), Raspberry Pi Foundation materials, and a variety of supportive platforms, such as Google NotebookLM. Our goal was to build students' technology fluency and critical thinking skills while helping them understand the ethical and societal implications of AI deployment, thereby fostering AI literacy (Long 2020, Touretzky 2019, Zhang 2023, Relmasira 2023, Klopfer 2024).

As part of the curriculum, students created apps using MIT App Inventor (MIT App Inventor, 2024). They also used Teachable Machine (Teachable Machine 2024) (see Figure 4) and explored how to apply AI and machine learning to teach quantum computing. Students created their own podcasts discussing the implications of AI in society, such as impacts on jobs and ethics, and they used the Google NotebookLM platform to research AI and better understand quantum computing concepts. We also taught them the basics of AI literacy, explored AI biases, and covered the historical and conceptual foundations of AI. To deepen their understanding, we organized a field trip to the MIT Museum and the Institute for Artificial Intelligence and Fundamental Interactions (IAIFI) at MIT.

Looking ahead, we will extend this project-based course to the 10MYP level. In 10MYP, students will build on the foundation established in their 9MYP Innovative Technology course to develop their own AI projects. We hope this expansion will inspire students to engage even more deeply with AI, including implementing it in STEM clubs and other initiatives.

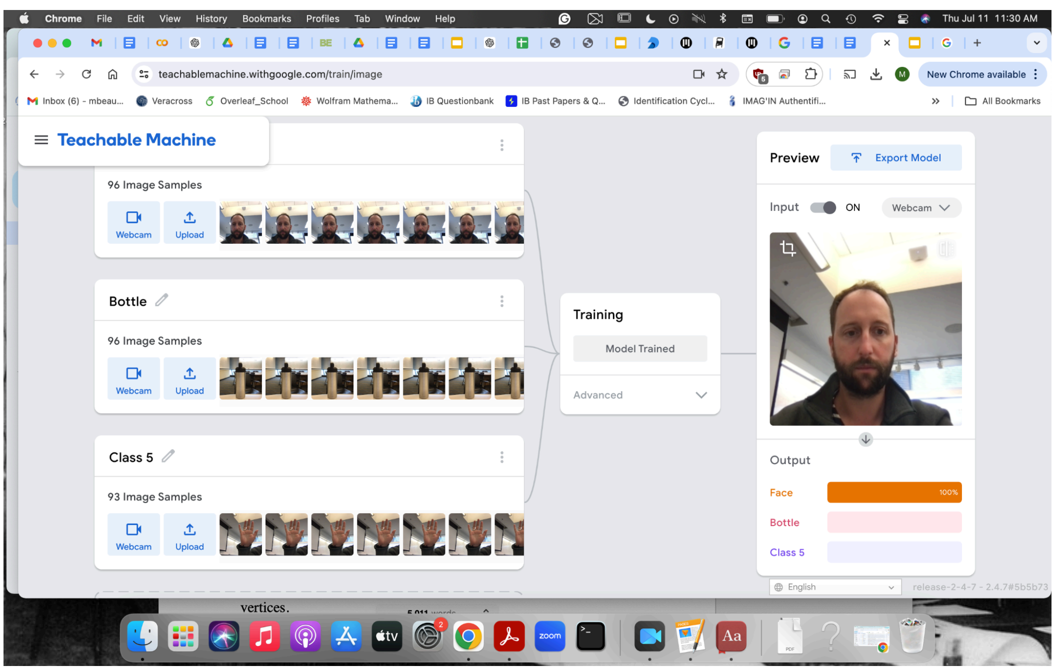

Figure 2. Teachable Machine activity: discovering the principles of Machine Learning.
"Teachable Machine" (Teachable Machine 2024) is an excellent way to learn the basic principles of Machine Learning, and in particular, Image Classification. First step, they train the algorithm to recognize specific objects or specific actions. Then, they can test the algorithm and evaluate its performance. After this activity, students developed a project on Image Classification.

4.5) Inspirit AI Summer Program at ISB

As part of ISB’s efforts to expand AI learning opportunities beyond the classroom, the school will host the **Inspirit AI** Summer Program in 2025. This on-campus initiative, open to rising Grade 6–12 students, offers an introduction to applied artificial intelligence through real-world projects and mentorship by graduate students from Stanford, MIT, and other leading universities. Students will explore AI fundamentals, Python programming, ethical considerations, and domain-specific applications in areas such as healthcare, astronomy, and finance. No prior experience in computer science is required.

5) Creating an AI Culture

An ***AI Culture*** is the set of shared practices, values, and knowledge that shape how artificial intelligence is understood, used, and developed within a community. In a school setting, it means ensuring that teachers and students have the skills, attitudes, and collaborative structures needed to integrate AI into learning, research, and daily practice in a responsible and sustainable way.

At ISB, AI Culture is built through teacher-led initiatives, collaborative projects, and community engagement. Key programs include the AI Working Group, faculty research grants, in-house workshops, and targeted professional development, which give educators the tools and support to pilot AI applications and share effective practices. Cross-divisional partnerships ensure a consistent learning pathway from Kindergarten through Grade 12, while events such as Café STEAM, field trips, and conferences connect the school to external expertise. The *AI in K-12 Education: Teaching in Practice* conference, to be held on October 3-4 at ISB, will bring together educators, school leaders, and AI experts to explore actionable, classroom-ready applications of artificial intelligence and foster dialogue between education communities.

5.1) Building an AI Culture Through Teacher-Led Innovation

Creating an AI culture at ISB relies on empowering educators through collaboration, professional growth, and research. The **AI Working Group** serves as a hub for sharing best practices, piloting tools, and shaping responsible policies. Faculty participate in **workshops and targeted professional development**, gaining hands-on experience with AI applications and exploring ethical, creative, and pedagogical uses. Engagement extends beyond the school through **conference participation**, where educators present their work and learn from global peers, see e.g., Figure 3.

The **Teachers Applied Research Grants Program** deepens this culture by funding and mentoring faculty-led projects that explore AI in education, from classroom differentiation to AI-assisted research, writing instruction, and coding. Grant recipients pilot their innovations, refine them through practice, and lead workshops to share insights, ensuring that AI integration at ISB is both teacher-driven and sustainable.

Collaboration is further strengthened through **teacher-led research projects** and dissemination initiatives. The ongoing **in-house workshops** provide spaces for educators to co-develop research, share findings, and build on two years of prior work. As part of this effort, the AI Working Group will launch an **AI Activities Bank**, a shared repository for AI-related activities and strategies, expanding access to proven practices. Cross-divisional initiatives, including partnerships with the Lower School, ensure a seamless AI learning experience from Kindergarten through Grade 12.

Based on our experience, we recommend that schools seeking to build AI capacity among teachers:

- Create an **AI Working Group** to coordinate initiatives, share expertise, and set guidelines.

- Offer **regular workshops and targeted professional development** to build technical, and pedagogical competences.
- Encourage **conference participation** to showcase school-led innovations and learn from external best practices.
- Organize **in-house workshops** led by internal faculty to share local initiative and knowledge.
- Establish a **faculty research grants program** to pilot AI-based educational projects.
- Develop an **AI Activities Bank** to share practical classroom applications across departments and grade levels.
- Promote **cross-divisional collaboration** to ensure AI learning pathways extend from early grades through graduation.

Figure 3: Pictures of the presentation of the paper (Beau 2024) at the AI & Education Summit 2024.

5.2) Café STEAM and Artificial Intelligence

On January 24, 2024, we organized Café STEAM at ISB: ``From Artificial Intelligence to New Frontiers in Math and Physics" in partnership with the Institute for Artificial Intelligence and Fundamental Interaction (IAIFI) with two guest speakers: Prof. Nina Necib (MIT Kavli Institute for Astrophysics and Space Research and IAIFI) and Prof. Fabian Ruehle (Northeastern University and IAIFI), see Figure 5. Our goal is to repeat this event every year and eventually organize an AI fair at ISB where students will showcase their work on AI and guest speakers will present their research (see Section 4.3 for further details).

Figure 4. Café STEAM 2024 at ISB.
Co-organized with the Institute of Artificial Intelligence and Fundamental Interactions (IAIFI), the café STEAM of 2024 hosted Prof. Fabian Ruehle (Northeastern University and AIFI) and Prof. Lina Necib (Physics Department and Kavli Institute for Astrophysics and Space Research, MIT and IAIFI).

5.3) AI field trip: IAIFI and the MIT Museum

During a recent visit to MIT's Institute for Artificial Intelligence and Fundamental Interaction (IAIFI) and the MIT Museum, ISB students explored how AI is transforming fields like astrophysics, robotics, and data science; see more details of this field trip in the blog article (Beau25a). At IAIFI, Prof. Lina Necib introduced students to AI applications in astrophysics and highlighted the ongoing challenge of ensuring the objectivity of AI-generated results, underscoring the importance of critical evaluation as part of AI literacy. Students then participated in hands-on activities led by Dr. Nikhil Mukund and Ms. Marisa LaFleur, including: **MarAI Curie**, an AI chatbot based on Marie Curie's life and work, **AI vs. Human Image Game**, challenging students to identify real versus AI-generated space images, and **Galaxy Zoo Training**, where students helped train AI to classify galaxy shapes. The session emphasized AI's growing role as a shared language across disciplines. At the MIT Museum, students continued exploring AI's societal impact through interactive exhibits, including social robotics, machine learning, and natural language processing, prompting reflections on ethics, limitations, and AI's future in science and society.

Figure 5: Ms. Marisa LaFleur and Dr. Nikhil Mukund presenting the activities to our students.

5.4) Organization of the conference *AI in K-12 Education: Teaching in Practice*

The International School of Boston will host a two-day conference, ***AI in K-12 Education: Teaching in Practice***, on October 3-4, 2025, bringing together educators, school leaders, and AI experts to explore actionable, classroom-ready applications of artificial intelligence in K–12 education. Designed around workshops, panels, and interactive sessions, the event will focus on practical implementation of AI for differentiation, research, evaluation, and student literacy. Highlights include a keynote and seminar by Charles Fadel, founder of the Center for Curriculum Redesign, and sessions led by ISB educators and researchers from institutions such as Harvard. Day 1 features a keynote address, a panel discussion, and practical workshops, while Day 2 highlights a seminar session, additional hands-on workshops, concluding reflections, and an optional visit to the MIT Museum. The program also features a poster session, a cocktail reception, and opportunities for participant proposals, ensuring broad collaboration and idea exchange. This conference serves as both a showcase of ISB's leadership in AI education and a catalyst for scalable, responsible innovation in schools.

5.5) Future project: STEM / AI fair

To showcase the diverse AI activities and projects completed by students, we propose ISB to organize an **AI Event** (possible names: "AI Day," "AI Night," "AI Fair," or "AI Café"). This event would bring together the entire school community to celebrate student achievements in AI and technology. The event could feature exhibitions of student projects, interactive demonstrations, and discussions on the impact of AI in education. A keynote speech by the Head of the ISB School (Richard Ulffer), along with presentations from guests and experts in the field, would provide valuable insights and inspire both students and educators.

5.6) Extracurricular activities

To foster a robust academic culture around AI, we have outlined several plans to develop extra-curricular activities:

- **Strengthening our Coding, Math, and STEM clubs** is a priority, with a focus on helping students develop AI projects and introducing AI clubs at both middle and lower school levels.
- Additionally, we could collaborate with **App-in Club** to utilize their educational frameworks and participate in events like the **GenAI summit and contests**.
- Incorporates AI in the **Robot Club** that, using block coding to ensure accessibility for all students would also be a great opportunity for our students to explore new AI technologies.
- One of the future project is to participate in the **Cambridge Science Festival** **2026**, providing broader exposure to AI advancements at ISB.

6) Conclusion and Recommendations

Over the past two years, the International School of Boston (ISB) has taken significant steps to integrate artificial intelligence (AI) into K–12 education through curriculum development, teacher training, and community engagement. Our dual-track framework; focusing on student AI literacy and teacher AI implementation; has informed a range of initiatives, including STEM classroom applications, a 9th-grade Innovative Technology course, summer internships at MIT, and AI-assisted research seminars.

These programs have shown that generative AI, when used responsibly, can enhance student autonomy, deepen understanding in STEM subjects, and foster creative problem-solving. However, our work has also highlighted important challenges: the risk of overreliance on AI tools, the need for ethical guidance, and the ongoing importance of human oversight in both teaching and learning.

From this experience, we draw the following conclusions:

Key Lessons

- Students benefit most from AI when they are actively guided to **question, verify, and reflect** on outputs.
- **Teacher training** is essential for meaningful integration and ethical oversight.
- The goal should be to cultivate **AI literacy,** not just fluency, and to foster **AI intuition**, promoting not only technical skills and ethical awareness, but also a deeper understanding that emerges through experience, and critical reflection.

Strategic Goals for ISB

- **Expand AI curriculum** across middle and lower school divisions to ensure vertical alignment.
- **Continue developing pilot courses including AI**.
- **Build an AI culture** through community events, faculty research Grants, conferences, and AI-focused extracurricular activities.
- **Maintain and grow partnerships** with academic institutions such as MIT to stay at the forefront of AI education.

Recommendations for Other Schools

1. Start with **a small pilot** program and a clear framework. Prioritize one or two grade levels or departments and expand to other grades afterwards.
2. Invest in **teacher development**: in-house workshops, participation in conferences, professional development.
3. Create a **leadership team** with a group of motivated faculty and administrative
4. Adopt **ethical AI use policies** that are transparent, age-appropriate, and updated regularly.
5. Create and maintain an **internal resource bank** of lesson plans and classroom activities.
6. Foster a **whole-school conversation** that includes teachers, students, parents, and administrators. This could take the form of regular updates on AI policies, AI events, AI curriculum, and AI tools.
7. Build an **AI culture** by developing research grants for faculty, organizing conferences, inviting guest speakers, implementing AI in STEM events, and other social AI-related events.

ISB's approach is not a universal template and each school must shape its integration of AI according to its own context, values, and community. But, we hope this work will encourage and inspire other schools to adopt AI tools and develop their own philosophy of AI in education, and to join in a broader dialogue with other schools to identify shared principles and a common foundation for responsible integration.

Our plan for next year is to continue refining this model, measuring its impact, and sharing what we learn. Technology will change, but the foundations of teaching will remain: sound principles, coherent methods, and the ability to adapt. We aim to uphold these principles and our mission while responding to the rapid evolution of technology. For us, this means placing *AI Intuition* (experimental, hands-on, adaptable) alongside *AI Literacy* (conceptual, structured, principled). AI intuition equips students to adapt to new tools through an experimental, inductive approach, enabling them to read AI behavior, recognize its limits, and adjust their strategies. AI literacy provides a principled foundation, spanning technical proficiency to the ethical use of AI. Together, these dimensions prepare students to work effectively with today's AI tools and to approach the next generation of AI technologies with the technical background, discernment, adaptability, and curiosity they will need.

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References

AI4K12. *AI for K-12*, https://ai4k12.org. Accessed August 14, 2025.

"AI for Education." Google for Education, https://edu.google.com/intl/ALL_us/why-google/ai-for-education/. Accessed August 14, 2025.

"AI for Educators." Google, https://grow.google/ai-for-educators/. Accessed August 14, 2025.

AILit Framework, https://ailiteracyframework.org/. Accessed August 14, 2025.

Barana, Alice, et al. "Fostering Problem Solving and Critical Thinking in Mathematics through Generative Artificial Intelligence." Paper presented at the International Association for Development of the Information Society (IADIS) International Conference on Cognition and Exploratory Learning in the Digital Age (CELDA), Madeira Island, Portugal, 21-23 Oct. 2023. https://eric.ed.gov/?id=ED636445

Beau, M. "Enhancing Teaching with the Implementation of AI Technology." *AI and Education Summit 2024*, 26 July 2024, Cambridge MA. Conference paper, see https://raise.mit.edu/wp-content/uploads/2025/01/MIT_AIED_2024-Mathieu-Beau-Enhancing-Teaching-with-the-Implementation-of-AI-Technology.pdf .
Video of the presentation https://www.youtube.com/watch?v=7Q43UUn2Tho

Beau, M. "AI Literacy: A New Paradigm in Education", *The Global Classroom Blog*, February 18, 2025. https://www.isbos.org/about-us/the-global-classroom/post-details/~board/global-classroom/post/ai-literacy-a-new-paradigm-in-education

Beau, M. "Exploring New Frontiers in AI at ISB", *The Global Classroom Blog*, February 18, 2025. https://www.isbos.org/about-us/the-global-classroom/post-details/~board/global-classroom/post/exploring-new-frontiers-in-ai-at-isb

Chiu, Thomas K. F. and Ahmad, Zubair and Ismailov, Murod and Sanusi, Ismaila Temitayo. (2024). What are artificial intelligence literacy and competency? A comprehensive framework to support them. Computers and Education Open, Volume 6, 2024. https://doi.org/10.1016/j.caeo.2024.100171.

Code.org. https://studio.code.org/home. Accessed August 14, 2025.

Cooper, G. 2023. "Examining Science Education in ChatGPT: An Exploratory Study of Generative Artificial Intelligence." Journal of Science Education and Technology 32 (3): 444–452. https://doi.org/10.1007/s10956-023-10039-y.

Dao, Xuan-Quy, and Ngoc-Bich Le. "Investigating the Effectiveness of ChatGPT in Mathematical Reasoning and Problem Solving: Evidence from the Vietnamese National High School Graduation Examination." *arXiv*, 2023, arXiv:2306.06331, https://arxiv.org/abs/2306.06331.

Dobrin, S. I. 2023. Talking about Generative AI: A Guide for Educators. Peterborough, Canada: Broadview Press.

Doshi, A. R. and Hauser, O. (2024). Generative ai enhances individual creativity but reduces the collective diversity of novel content. Science Advances, 10(28). https://doi.org/10.1126/sciadv.adn5290

Experience AI., https://experience-ai.org/en. Accessed August 14, 2025.

Flechtner, R., & Stankowski, A. (2023, April). *AI is not a wildcard: Challenges for integrating AI into the design curriculum*. In Proceedings of the 5th Conference on Creativity and Cognition (pp. 1–8). ACM. https://doi.org/10.1145/3587399.3587410

Flechtner, R., and Kilian, J. (2024). *Making (Non-)Sense-A Playful and Explorative Approach to Teaching AI Intuition for the Design of Sensor-Based Interactions*. In *Proceedings of the 6th Annual Symposium on HCI Education (EduCHI '24)*, New York, NY, USA. ACM. https://doi.org/10.1145/3658619.3658643

Fullan, M. (2025, May 14). Michael Fullan and Kaleb Rashad on Leading in a Culture of Change. [Audio podcast episode]. In T. Vander Ark (Host), Getting Smart Podcast. https://www.gettingsmart.com/podcast/michael-fullan-on-leading-in-a-culture-of-change-2/

Fullan, M., Azorín, C., Harris, A., & Jones, M. (2023). Artificial intelligence and school leadership: challenges, opportunities and implications. School Leadership & Management, 44(4), 339–346. https://doi.org/10.1080/13632434.2023.2246856

Google DeepMind, https://deepmind.google/. Accessed August 14, 2025.

Grover, S. (2024). Teaching AI to K-12 Learners: Lessons, Issues, and Guidance. In Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 1 (SIGCSE 2024). Association for Computing Machinery, New York, NY, USA, 422–428. https://doi.org/10.1145/3626252.3630937 . See also: https://www.shuchigrover.com/wp-content/uploads/2024/02/Grover_Teaching_AI_In_K_12-Final-1.pdf

"Guide to AI and Machine Learning." Google, https://grow.google/intl/en_pk/guide-ai-machine-learning/. Accessed 22 July 2025.

Hargreaves, S. 2023. "'Words Are Flowing Out Like Endless Rain Into a Paper Cup': ChatGPT & Law School Assessments." The Chinese University of Hong Kong Faculty of Law Research Paper (2023-03).

Klopfer, Eric, Justin Reich, Hal Abelson, and Cynthia Breazeal. "Generative AI and K-12 Education: An MIT Perspective." *An MIT Exploration of Generative AI*, Mar. 2024, https://doi.org/10.21428/e4baedd9.81164b06.

Kong, S.-C, Yang, Y. (2024). "A Human-Centered Learning and Teaching Framework Using Generative Artificial Intelligence for Self-Regulated Learning Development Through Domain Knowledge Learning in K–12 Settings," in IEEE Transactions on Learning Technologies, vol. 17, pp. 1562-1573, 2024. Retrieved from https://ieeexplore.ieee.org/document/10507034

Lee, I., & Perret, B. (2022). Preparing High School Teachers to Integrate AI Methods into STEM Classrooms. Proceedings of the AAAI Conference on Artificial Intelligence, 36(11), 12783-12791. https://doi.org/10.1609/aaai.v36i11.21557

Lee, S. J., Kwon, K.. (2024). A systematic review of AI education in K-12 classrooms from 2018 to 2023: Topics, strategies, and learning outcomes. Computers and Education: Artificial Intelligence, Volume 6, 2024. https://doi.org/10.1016/j.caeai.2024.100211.

Liu, R. (2025). The impact of generative pre-trained transformers on creative writing instruction: enhancing student engagement and expressive competence. Journal of Computational Methods in Sciences and Engineering. https://doi.org/10.1177/14727978251337961

Lo, Chih-Kai. "What Is the Impact of ChatGPT on Education? A Rapid Review of the Literature." *Education Sciences*, vol. 13, no. 4, 2023, article 410, https://doi.org/10.3390/educsci13040410.

Long, Duri, and Brian Magerko. "What is AI Literacy? Competencies and Design Considerations." *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, Association for Computing Machinery, 2020, pp. 1-16, https://doi.org/10.1145/3313831.3376727.

Mineo, Liz. (2025, June 3). What good is writing, anyway? *Harvard Gazette.* https://news.harvard.edu/gazette/story/2025/06/what-good-is-writing-anyway/

MIT App Inventor, https://appinventor.mit.edu/explore/teach. Accessed August 14, 2025.

MIT, "Day of AI Curriculum.", https://dayofai.org/curriculum/.

MIT Open Learning. https://openlearning.mit.edu/. Accessed August 14, 2025.

MIT Raise Initiative. "Raise Playground." https://playground.raise.mit.edu/. Accessed August 14, 2025.

MIT Raise Initiative. "Research Projects", https://raise.mit.edu/research-projects/. Accessed August 14, 2025.

MIT Science and Engineering Program for Teachers, https://sept.mit.edu/. Accessed August 14, 2025.

MIT Scheller Teacher Education Program. "Curriculum." https://education.mit.edu/project-type/curriculum/. Accessed August 14, 2025.

MIT “AI and Education Summit”. https://raise.mit.edu/events/ai-education-summit/. Accessed August 14, 2025.

National Council of Teachers of Mathematics (February 14, 2024), Artificial Intelligence and Mathematics Teaching - A Position of the National Council of Teachers of Mathematics. Retrieved June 9, 2025, from https://www.nctm.org/News-and-Calendar/News/NCTM-News-Releases/NCTM-Releases-New-Position-Statement-on-Artificial-Intelligence-and-Mathematics-Teaching/ . See also: https://www.nctm.org/standards-and-positions/Position-Statements/Artificial-Intelligence-and-Mathematics-Teaching/

Papert, Seymour. "Teaching Children Thinking." *Contemporary Issues in Technology and Teacher Education (CITE Journal)*, vol. 5, no. 3-4, 2005, pp. 353-365.Note: This article was reprinted from Taylor, R., Ed., *The Computer in School: Tutor, Tool, Tutee* (New York: Teachers College Press, 1980), pp. 161-176. The article originally appeared in: World Conference on Computer Education, IFIPS, Amsterdam, 1970.

Piaget, Jean. *The Development of Thought: Equilibration of Cognitive Structures*. Viking Press, 1977.

Rane, Nitin. "Enhancing Mathematical Capabilities through ChatGPT and Similar Generative Artificial Intelligence: Roles and Challenges in Solving Mathematical Problems." SSRN, 20 Aug. 2023, https://ssrn.com/abstract=4603237 or http://dx.doi.org/10.2139/ssrn.4603237.

Raspberry Pi Foundation, https://www.raspberrypi.org/. Accessed August 14, 2025.

Relmasira, S. C., Lai, Y. C., & Donaldson, J. P. (2023). Fostering AI literacy in elementary science, technology, engineering, art, and mathematics (STEAM) education in the age of generative AI. Sustainability, 15, 13595. https://doi.org/10.3390/su151813595

Sánchez-Ruiz, Luis M., et al. "ChatGPT Challenges Blended Learning Methodologies in Engineering Education: A Case Study in Mathematics." *Applied Sciences*, vol. 13, no. 10, 2023, article 6039, https://doi.org/10.3390/app13106039.

Semwaiko, G. S., Chao, W.-H. ., & Yang, C.-Y. . (2024). Transforming K-12 education: A systematic review of AI integration. International Journal of Educational Technology and Learning, 17(2), 43–63. https://doi.org/10.55217/101.v17i2.847

"Teachable Machine." Google, https://teachablemachine.withgoogle.com/. Accessed August 14, 2025.

Touretzky, D., C. Gardner-McCune, F. Martin, and D. Seehorn. “Envisioning AI for K-12: What Should Every Child Know about AI?”. Proceedings of the AAAI Conference on Artificial Intelligence, vol. 33, no. 01, July 2019, pp. 9795-9, doi:10.1609/aaai.v33i01.33019795.

Touretzky, D.S., Gardner-McCune, C. “Artificial intelligence thinking in k-12. Computational Thinking Education in K-12”. Artificial Intelligence Literacy and Physical Computing pp. 153–180 (2022).

UNESCO. Recommendation on Open Educational Resources (OER). UNESCO's General Conference at its 40th session in November 2019. Retrieved August 6, 2025 from https://www.unesco.org/en/legal-affairs/recommendation-open-educational-resources-oer.

UNESCO. Guidance for generative AI in education and research. September 8, 2023. Retrieved April 10, 2024, from https://www.unesco.org/en/articles/guidance-generative-ai-education-and-research

UNESCO. AI competency framework for students (2023). https://unesdoc.unesco.org/ark:/48223/pf0000391105. Accessed August 14, 2025.

UNESCO. AI competency framework for teachers (2023). https://unesdoc.unesco.org/ark:/48223/pf0000391104. Accessed August 14, 2025.

Zhang, H., I. Lee, S. Ali, et al. "Integrating Ethics and Career Futures with Technical Learning to Promote AI Literacy for Middle School Students: An Exploratory Study." *International Journal of Artificial Intelligence in Education*, vol. 33, 2023, pp. 290-324, https://doi.org/10.1007/s40593-022-00293-3.

Appendix A: *AI Intuition* in K-12 Education: Implementation Framework

Table A1: Definition of *AI Intuition* and operational description of the concept

Component	Description	Examples for K–12
Core Definition	An experimental, inductive understanding of AI systems developed through exploration, trial and error, and reflective engagement, enabling learners to anticipate AI behaviors, adapt strategies, and make context-dependent decisions.	Students iteratively test AI tools, observe how inputs affect outputs, and adjust their approach based on patterns they detect. After multiple trials, students can reflect on the use of AI and can formulate rules adapted to the tool (e.g., Chat GPT, Midjourney) and the context (e.g., generating prompt, images, codes).
Learning Outcomes	• Recognize patterns and limitations in AI outputs. • Adapt prompts and strategies to achieve desired results. • Make informed judgments about when and how to use AI tools. • Critically evaluate AI-generated content for accuracy, bias, and appropriateness.	A student refines multiple drafts of an essay using AI, evaluates each version for factual accuracy, and selects the best while explaining their choice.
Pedagogical Principles	• Treat AI as an object of inquiry. • Encourage iterative experimentation. • Foster reflection after each interaction. • Blend hands-on exploration with guided discussion of underlying concepts.	Class project where students "interview" an AI to explore a historical topic, then compare the AI's responses to textbook sources.

Instructional Strategies	1. **Exploratory Play:** Unstructured sessions for testing AI capabilities. 2. **Prompt Variation:** Systematic changes in input to study output differences. 3. **Error Analysis:** Identify and discuss mistakes AI makes. 4. **Reflection Journals:** Record observations and evolving strategies.	In AI/Tech class, students can learn how to prompt efficiently by testing the Gen-AI tool and identifying patterns in outcomes (type of responses, hallucination, etc..). In science class, students use an AI to generate hypotheses for an experiment, then evaluate which are testable.
Assessment Approaches	● Performance tasks that require adapting AI use to a novel problem. ● Portfolios of AI interaction examples with reflections. ● Peer review of AI-assisted work. ● Observation of strategic adjustments in real time.	Teachers grade a portfolio showing how a student improved image generation results over multiple attempts, including explanations of changes.
Ethical Awareness	Integrate discussions of bias, fairness, intellectual property, and appropriate use into hands-on activities, reinforcing that AI intuition includes recognizing limitations and risks.	Students debate whether an AI-generated image can be used in a school project, considering copyright and representation issues.
Cross-Disciplinary Links	Embed AI intuition development across subjects, language arts, science, social studies and arts, so students see AI as a versatile but context-dependent tool.	● In art class, students could use AI to create sketches. ● In history, they could use AI to simulate debates between historical figures and check validity of arguments. ● In math, students could solve problems or build proof and check the validity of solutions proposed.

Table A2: Dual-Level Model of *AI Intuition*

Dimension	Level 1 – General AI Intuition (Cognitive–Reflective Layer)	Level 2 – Domain-Specific AI Intuition (Technical Layer)
Definition	Broad, transferable heuristics for understanding and interacting with AI across contexts, built through exploration, trial-and-error, and reflective discussion.	Deep, tactile understanding of AI as a "design material" within a specific domain, gained through technical, hands-on work and iterative prototyping.
Core Goal	Demystify AI; develop the ability to anticipate, evaluate, and adapt AI outputs, and to recognize limits and opportunities.	Enable technically competent, creative, and context-sensitive design, adaptation, or deployment of AI systems in a chosen application area.
Pedagogical Mode	Open-ended experiments; guided questioning; peer discussion; reflective journaling; prompt variation and response analysis.	Domain-relevant projects; embodied role play; iterative prototyping; direct manipulation of AI models and data; integration into real-world systems. Project-based approach. Could be integrated in the Design or Robotic curriculum if AI tools are necessary (this has to be evaluated by the student and is part of AI Intuition).
Knowledge Emphasis	Intuitive "feeling" for AI behavior; basic pattern recognition; judgment under uncertainty; complements formal AI literacy instruction (ethics, theory, technical background).	Technical literacy (coding, data handling, model training); domain vocabulary; feasibility analysis; application-focused design principles.
Typical Activities	● Prompt-response exploration in generative AI. ● Output comparison across varied inputs. ● Group challenges to "break" the AI or find edge cases. ● Reflective debriefs on trust, bias, and error.	● Training image/sound classifiers on sensor data. ● Building AI-enabled prototypes. ● Iterative testing of AI components within a design. ● Deploying AI in context-specific workflows.

Skill Outcomes	• Recognize AI strengths and weaknesses. • Adapt strategies dynamically. • Make informed decisions about AI use. • Communicate observations clearly. • Formulate general principle for the use of AI based on observation (inductive approach).	• Build and refine functional AI applications. • Translate design intent into technical requirements. • Integrate AI tools into larger systems. • Address feasibility, performance, and ethical constraints in implementation.
Example Contexts	Language arts (AI-assisted writing, fact-checking); science (AI-generated hypotheses); mathematics (proof, problem solving); social studies (AI-simulated debates); art (AI-based idea generation).	Design and technology (sensor-based ML, interactive installations); STEM labs (robotics, data analysis); engineering challenges (AI-assisted control systems).
Alignment	Supports **AI literacy** by building intuitive foundations for critical and informed AI use before or alongside formal instruction.	Aligns with **design education** models like Flechtner (2023, 2024), where AI is engaged as a material for creative, embodied, and technical work.
Progression	Entry point into AI intuition; establishes generalizable skills that can transfer across domains.	Specialization phase; applies and deepens general intuition within a technical or creative field.

Appendix B: Implementing AI from K-12: ressources

MIT research education institutes developed a lot of resources for teachers, including teachers' programs, curricula, lesson plans, applications, and student projects. In our experience, it is not always easy to find resources as several research institutes have their own websites, even if they sometimes work together or have researchers working across these institutes. For this reason, we would like to share our current understanding of the various platforms available online:

a) Dayofai curriculum from K-12 is readily available. There are a lot of resources, slide decks for teachers, and lesson plans.

b) Teachers can also find a list of interesting projects developed by the MIT Raise Initiative. Raise Playground is a good and easy platform to use where you can find a curriculum and activities for students. For example:

   i) RAICA is a team that develops curriculum for Middle School students. They emphasize Inclusion and Literacy.

   ii) Dancing with AI is a students' project introducing concepts of Machine Learning.

   iii) How to train your robot is a mixed project between robotics and AI.

c) Other projects (sometimes related to MIT Raise Initiative) as well as teachers' training developed by the MIT Scheller Teacher Education Program

d) MIT App Inventor is an excellent platform where students can learn coding and design to build applications for their phones. The MIT App Inventor is user-friendly, serves as a great pedagogical tool for teaching coding (using block coding similar to Scratch), and provides students with a practical way to learn coding through hands-on projects.

e) CoolTinking is an age 9-12 program with a well-structured project-based curriculum aiming to teach programming and AI (from Scratch to MIT App Inventor). Schools or teachers who are interested in implementing this program can create a partnership with the organizers of the program and with other schools and teachers participating in this program.

f) There are many other online resources to explore. For example, Experience AI, which is a curriculum program developed by (Google DeepMind) and (Raspberry Pi Foundation) provides a very thorough curriculum for students aged 11-14. Another interesting online resource is Code.org which provides thorough material, such as slide decks, lesson plans, videos, and student activities.

Appendix C: Teacher training resources

To effectively integrate AI into education, educators must pursue relevant training and resources. Several platforms offer valuable opportunities for professional development in this area:

- Raspberry Pie Foundation offers a lot of free online courses (you can also get a certificate if you pay a fee). For example, the Introduction to Machine Learning and AI course teaches you AI and Machine Learning but offers teaching strategies and student activities that can be readily implemented in the classroom.
- Google has a lot of resources to learn how to use AI in education. This platform Google Advancing Education with AI offers a bunch of training courses for teachers, including Google AI Essential and Generative AI for Educator. Generative AI for Educator is an excellent starting point for those with a limited background in AI who wish to explore various ways to implement AI in their classrooms.
- MIT Open Learning is a great resource for free online courses at different levels, most of them at the advanced College level. The Introduction to Machine Learning course offers a more advanced knowledge and understanding of the field.