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Through the curriculum development journey, many colleagues at Central Square Foundation (CSF) have provided their valuable time and suggestions. We extend our heartfelt gratitude to all of them.

We hope this handbook will help stakeholders adopt and adapt the AI Samarth AI Literacy Curriculum Framework for Students, which provides a robust, scalable and flexible framework for embedding AI literacy within India's school system.

In deep gratitude, Central Square Foundation

Messages from Ecosystem Leaders



Preparing young minds for the future means preparing them for a world shaped by Artificial Intelligence. As AI rapidly redefines industries, communication and decision-making, our education systems must respond with urgency and intent. It's not enough for students to simply use AI, they must understand how it works, reflect on its implications and engage with it responsibly.

Today, even in India's most remote corners, children interact with AI-powered tools, often without realising it. This creates

an urgent need to build foundational AI literacy across all levels of learning. Not as a niche subject, but as a core life skill.

Recognising this, Central Square Foundation's **AI Samarth** initiative is timely and visionary. The AI Samarth curriculum, built in partnership with IIT Madras, provides a robust framework for building AI awareness and competence among students, while also engaging teachers and parents as critical enablers in the learning journey.

I congratulate the team at CSF for leading this effort with clarity and purpose. This is more than a curriculum, it is a call to action.

As leaders, educators and parents, we must come together to ensure that this important initiative is adopted widely, integrated meaningfully and scaled with commitment. The choices we make today will determine whether the next generation enters the AI era as passive users, or as empowered, informed creators of the future.

Ashish Dhawan Founder and Chairperson Central Square Foundation



The integration of Artificial Intelligence into our daily lives has made it imperative that we reimagine education—not just to include digital access, but to build foundational AI awareness and readiness among all learners and educators. The **AI Samarth AI Literacy Curriculum Framework** for Students is a timely and meaningful step in this direction.

By introducing AI literacy at the middle school level, the framework ensures that students, teachers, and parents are not only familiar with emerging technologies, but are

equipped to use them **safely, ethically, and meaningfully**. It complements the Ministry of Education's vision of fostering **future-ready learners** who are empowered to participate in an AI-enabled knowledge society.

I commend this collaborative effort between Central Square Foundation and IIT Madras and urge all education stakeholders—especially school systems and teacher education institutions—to adopt and scale this important work. Together, we can prepare our classrooms for the age of blended intelligence - Human & AI - and ensure every child and teacher is AI-aware, confident, and capable.

Dr. Amarendra P. Behera

Head - Planning and Research Division, Central Institute of Educational Technology (CIET), NCERT Ministry of Education, Government of India





I am delighted to see the launch of the AI Samarth AI Literacy Curriculum Framework for Students, a timely and transformative step toward preparing India's young learners and educators for a future marked by artificial intelligence.

As AI becomes a defining force in our lives, it is vital that students and educators learn not just to use it confidently, but to engage with it ethically and responsibly. AI Samarth's goal is to introduce this awareness at an early stage, helping students develop the skills and perspective needed to thrive

in an AI-driven world, while also equipping teachers with tools to guide them in the changing landscape.

I encourage all education stakeholders to embrace and champion this initiative as this is more than a curriculum, it's a foundation for a future where young minds grow up not just using AI, but shaping it. I look forward to seeing this initiative take root across classrooms in India.

Neerja Birla

Founder and Chairperson Aditya Birla Education Trust



Artificial Intelligence is reshaping India and the world at an unprecedented pace, transforming how we learn, work and interact. As AI becomes increasingly embedded in our daily lives, equipping the next generation of Indians with AI literacy is no longer optional, it is essential. At IIT Madras, we believe that AI awareness must begin early. Students need the knowledge and skills to understand, engage with and use AI responsibly. Equally important is building the capacities of teachers and parents, who play a pivotal role in guiding

students in navigating the evolving world of AI. The AI Samarth initiative, in collaboration with Central Square Foundation represents a significant step toward this vision, aspiring to empower millions of learners across India with a foundational understanding of AI and its real-world applications.

This AI Literacy Curriculum marks the beginning of a movement to democratise AI literacy for Bharat. It fosters critical thinking, ethical awareness and a human-centered mindset that positions AI as a collaborative tool, supporting both teaching and learning. I hope this resource sparks curiosity and equips our young minds to thrive in an AI-enabled future.

I urge education departments and school boards across India to adopt and mainstream AI literacy in the formal education system. Every student, regardless of background, deserves access to foundational AI knowledge and opportunities to explore its practical applications. By integrating AI Samarth's curriculum into classrooms, we can build a generation that is not only future-ready but also thoughtful, responsible and innovative.

Together, let us build a strong foundation for an AI Samarth Bharat from inside our schools and position India as a global leader in cultivating an AI-ready workforce.

Prof. B. Ravindran

Head, Wadhwani School of Data Science & AI Indian Institute of Technology, Madras



Coverview of the Al Samarth Initiative

I.I Context

Artificial Intelligence (AI) has emerged as a defining force of the present era, increasingly embedded within the systems and technologies that shape everyday life. From navigation tools and content recommendations to virtual assistants and automated workflows, AI functions as an often invisible infrastructure influencing interaction, decision-making and behaviour across personal and professional domains¹.

Beyond routine applications, AI is catalysing transformative shifts across key sectors such as agriculture, healthcare and education. In education, AI holds the potential to redefine teaching and learning by enabling hyper-personalised pathways, providing real-time feedback through intelligent assessments, supporting lesson planning and curriculum design and streamlining administrative tasks. These capabilities offer a pathway toward more responsive and efficient educational systems².

¹ Elliott, A. (2019). *The Culture of Al: Everyday Life and the Digital Revolution (1st ed.)*. Routledge.

² Kaledio, P., Robert, A., & Frank, L.(2024). The impact of artificial intelligence on students' learning experience. SSRN Electronic Journal.



India is experiencing a dramatic rise in smartphone usage, particularly among young people. The Comprehensive Annual Modular Survey (CAMS) 2022–23 by the Ministry of Statistics and Programme Implementation (MoSPI) found that over 95% of youth in both rural and urban areas are able to use mobile phones³.



The Annual Status of Education Report (ASER) 2024 reports that 82% of children aged 14–16 are proficient in smartphone use, primarily for learning and recreation⁴. Further, the Bharat Survey on EdTech (BaSE) 2023 found that 85% of Indian households have at least one smartphone⁵.

With the widespread use of smartphones, many users are passively interacting with AI-powered technologies, whether through algorithmic recommendations, AI-enhanced search results, or automated chat features⁶. Given the emerging applications of AI for teaching and learning, this evolution presents a pivotal opportunity to leverage AI meaningfully and responsibly to enhance understanding, encourage curiosity and support learner-centred education at scale. Yet, the true promise of AI lies not in its capabilities alone but in its thoughtful and effective integration into educational systems.

The growing interaction with AI also raises some critical questions about the current levels of AI awareness, literacy and the ability to engage with AI responsibly:



Can users identify and question AI's influence in digital spaces?

Are users equipped with the tools to harness AI's potential meaningfully?

Is there an adequate understanding of associated risks, such as algorithmic bias, misinformation, or data privacy threats?

These questions highlight the pressing need for structured AI literacy among users, one that equips young learners to engage with AI ethically, safely and effectively in a technology-driven world.

According to Digital Promise, "AI literacy is the knowledge and skills that enable humans to critically understand, evaluate and use AI systems and tools to safely and ethically participate in an increasingly digital world."⁷ While AI offers exciting opportunities to enrich education, this promise comes with a responsibility: to ensure its integration is ethical, safe and human-centred. Developing AI awareness is key to empowering students and educators to engage with these tools purposefully, while also addressing critical concerns related to privacy, bias and ethics. When combined with critical thinking and meaningful human interaction, AI can become a catalyst for responsible and transformative learning⁸.

Recognised globally as an emerging need, AI literacy is being actively embedded into school systems around the world. China has mandated AI education from 2025 in the city of Beijing⁹; Singapore's EdTech Masterplan 2030 includes structured AI learning¹⁰; in the U.S., initiatives like AI4K12 are shaping curricula and teacher training¹¹; and Kenya places ethical, inclusive and innovation-driven AI adoption at the core of its national strategy¹². These global efforts reflect a shared understanding: AI literacy is essential for preparing learners for the future.

³ Ministry of Statistics and Programme Implementation, Government of India. (2024). <u>Comprehensive Annual Modular Survey 2022-23</u>

⁴ Annual Status of Education Report (ASER). (2024). ASER 2024 National Findings

⁵ Central Square Foundation. (2023). *Bharat Survey for EdTech (BaSE) Report 2023*

⁶ Passive AI use: Involves indirect exposure to AI, often without explicit awareness. AI systems operate in the background influencing aspects of daily life. Active AI use: Involves conscious awareness about AI and engagement with AI technologies

⁷ Mills, K., Ruiz, P., Lee, K., Coenraad, M., Fusco, J., Roschelle, J. & Weisgrau, J. (2024, May). *Al Literacy: A Framework to Understand. Evaluate and Use Emerging*. *Technology*.

⁸ Kaledio, P., Robert, A., & Frank, L. (2024). The impact of artificial intelligence on students' learning experience. SSRN Electronic Journal.

⁹ India Today (2024). <u>China mandates AI education for primary students to build future skills</u>.

¹⁰ Ministry of Education, Government of Singapore. (2023). *Transforming Education through Technology Masterplan 2030*.

¹¹ Crawford, A and Wu, C. (2024). Riding the AI Wave: What's Happening in K-12 Education?. Center for Security and Emerging Technology.

¹² Dan Cooper, Benjamin Haley, Deon Govender, Ahmed Mokdad & Mosa Mkhize. (2025). <u>Kenya's AI Strategy 2025–2030: Signals for Global Companies</u> Operating in Africa. *Global Policy Watch*.

India is also witnessing rapid advancements in AI, driven by strategic national initiatives. The IndiaAI Mission, approved by the Union Cabinet under the leadership of Hon'ble Prime Minister Shri Narendra Modi in March 2024, aims to create a robust AI ecosystem¹³. Further, the Union Budget 2025–26 allocated ₹500 crore to establish a Centre of Excellence in AI for Education focused on personalised learning, skilling and workforce readiness¹⁴. While initiatives like 'AI for All' and 'Responsible AI for Youth' have introduced foundational AI concepts, the current context calls for a comprehensive and structured AI literacy curriculum tailored to Bharat's diverse realities, one that focuses on safe and meaningful AI adoption.

AI Samarth is a pioneering initiative launched by Central Square Foundation, focused on empowering the students, teachers and parents of Bharat with AI literacy at scale. CSF has partnered with the Wadhwani School of Data Science and Artificial Intelligence (WSAI) at the Indian Institute of Technology (IIT), Madras to develop a robust AI Literacy curriculum framework that fosters awareness, deepens understanding and builds the capacity required to engage with AI ethically and responsibly.

The purpose of this handbook is to outline the design process and dive into the AI Literacy Curriculum Framework for students.

AI Samarth - Approach and Vision 1.2

AI Samarth is an AI literacy initiative aimed at equipping students, parents and educators in government and affordable private schools in India with the essential knowledge and practices to engage with AI meaningfully, safely and responsibly.

Target Audience and Envisioned Outcomes

The target audience for the initiative includes middle and high school students from government and affordable private schools (APS), parents of students attending K-12 schools in these segments and educators teaching in middle and high schools in government and affordable private schools.

The outcomes of the initiative are designed to equip students and teachers with the necessary knowledge and practices to foster meaningful, safe and responsible interaction with AI:





Ministry of Electronics and IT, Government of India. (2024). Cabinet Approves Over Rs 10.300 Crore for IndiaAl Mission, will Empower Al Startups and Expand. 13 Compute Infrastructure Access.

The Economic Times. (2025). Union Budget 2025: Centre of excellence for AI to be set up with Rs 500 crore outlay. 14

Over the next three years, AI Samarth aims to achieve its objectives through a holistic approach:

1.2.1	Developing a comprehensive AI literacy curriculum framework tailored for both students and teachers
1.2.2	Building a high-quality, open-source content stack accessible to students, teachers and parents in English and at least 4 Indian languages
1.2.3	Enabling large-scale dissemination of AI Samarth's AI Literacy content stack through both online channels and cascaded training modules to build AI awareness and capacity for practical application among students, parents and educators
1.2.4	Building salience for AI literacy across the education ecosystem to support its mainstreaming in school systems across India

Each component of the approach is summarised below:

1.2.1 Developing a comprehensive AI literacy curriculum framework

The AI Samarth curriculum framework was developed through a rigorous, collaborative process involving educators, academics and education sector experts. School immersions conducted across diverse settings helped capture onground insights, gauging AI awareness, perceptions and usage among students, teachers and parents. A curriculum landscaping exercise was conducted to review existing frameworks and derive learnings. The curriculum has been informed by global AI content and curricula such as, Day of AI¹⁵, Experience AI¹⁶, Hour of Code¹⁷, AIEdu¹⁸, K-12 UNESCO AI curricula¹⁹, UNESCO's AI Competency Framework for Students²⁰ and Digital Promise's AI Literacy Framework²¹. This process helped derive the guiding principles and overarching learning outcomes for AI Samarth's AI Literacy curriculum framework. The curriculum framework was reviewed with K–12 teachers to ensure it is practical, relevant and ready for classroom use.

1.2.2 Building a high-quality, open-source content stack

Based on the AI Samarth AI Literacy curriculum framework, the AI Samarth content stack will be designed as an open-source multilingual repository of contextually relevant learning materials to make AI literacy accessible, engaging and comprehensible for students, teachers and parents across India. The content will be available in English, Hindi, Bengali, Odia and Marathi in the first year, with the potential to introduce other regional Indian languages in subsequent years. It will include curriculum-aligned videos, in-class teaching materials, lesson plans, teacher guides and assessments tailored to the diverse learning environments in India. Learnings from global courses such as, Day of AI, Experience AI, Hour of Code, AIEdu will be incorporated to ensure the content is engaging and interactive for the audiences. This content stack, comprising videos and teaching-learning materials (TLMs), will be available as an open-source public good and will be designed for flexible integration within existing school routines and subject areas. Details regarding guidance on using the curriculum are outlined in Section 4.

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¹⁵ Massachusetts Institute of Technology. *Day of AI*.

¹⁶ DeepMind & The Raspberry Pi Foundation. Experience AI

¹⁷ Code.org. *Hour of Code*.

¹⁸ The AI Education Project. Intro to AI.

¹⁹ United Nations Educational, Scientific and Cultural Organization. (2022). K-12 Al Curricula.

²⁰ United Nations Educational, Scientific and Cultural Organization. (2024). Al Competency Framework for Students.

²¹ Mills, K., Ruiz, P., Lee, K., Coenraad, M., Fusco, J., Roschelle, J. & Weisgrau, J. (2024, May). Al Literacy: A Framework to Understand, Evaluate and Use Emerging Technology.

The content stack being built for different audiences and formats is shared below:

Table 1: Content Stack for AI Samarth's Target Audience

Audience	Delivery Pathway	Course Duration
	Engaging self-learning modules to be disseminated through online platforms	~3 hours
Educators	Hybrid training programmes to enhance educators' AI knowledge and capacity while enabling them to cascade this knowledge to students effectively	~6 hours
Students	In-person cascaded training programmes to be delivered by trained educators	3-3.5 hours
Students and Parents	Engaging, easy-to-consume self-learning modules to be disseminated through online platforms	2-2.5 hours

I.2.3 Enabling large-scale dissemination of AI Samarth's AI Literacy content

AI Samarth aims to equip over 5 million (50 lakh+) students, parents and educators in government and affordable private schools with the essential knowledge and practices to engage with AI meaningfully, safely and responsibly. This will be achieved through the widespread dissemination of the content stack both through online platforms and cascaded training modules, in collaboration with local implementation partners and state governments across diverse learning contexts in India.

1.2.4 Building salience for AI literacy

Finally, the initiative seeks to mainstream AI literacy into the education landscape by building wider salience for its integration into school curricula at both the state and national levels. Through this effort, the initiative aims to build sustained AI awareness across the education ecosystem, enabling students, educators and parents to engage with AI responsibly and effectively in teaching, learning and everyday life.

2 Design Process of the AI Literacy Curriculum Framework

The process followed for the build of the curriculum is described below:



2.1 School Immersions

School immersions were conducted as a key part of the curriculum framework design process to gain first-hand insights into the current levels of AI awareness and engagement across diverse educational settings in India. These immersions involved conducting field visits to interact and observe within classrooms to understand how students, teachers and parents perceive AI, their familiarity with its concepts and the ways, if any, it is currently being used in teaching and learning. The process helped highlight opportunities to make the curriculum framework more relevant, relatable and accessible to suit the needs of the diverse learners of Bharat.

2.2 Curriculum Landscaping

An in-depth curriculum and content landscaping exercise was conducted, informed by extensive secondary research on AI Literacy curriculum and courses such as, Day of AI, Experience AI, Hour of Code, AIEdu, K-12 UNESCO AI curricula, UNESCO's AI Competency Framework for Students and Digital Promise's AI Literacy Framework, which incorporated aspects of both AI literacy and technical skill development. This exercise was driven by a two-fold objective:

- a. How can an AI literacy curriculum be clearly defined and distinguished from one focused on technical skills?
- **b.** Which elements from existing frameworks can be meaningfully adopted to shape a holistic AI literacy curriculum for the AI Samarth target audience?

To address question (a), global curricula were analysed at both the topic and subtopic levels. The research revealed that AI literacy frameworks focus on conceptual understanding, ethical awareness and critical thinking. At the same time, these frameworks also include certain advanced components such as programming, coding and system design, which fall under the umbrella of technical AI skills or comprehensive engineering skills²² aimed at enabling learners to build or engineer AI solutions to address real-world problems.

As the primary objective of AI Samarth's AI Literacy Curriculum Framework for Students is to build foundational AI knowledge and foster meaningful and responsible AI use, therefore, building awareness and practical capacity to use AI effectively and safely has been prioritised over technical skill development at this stage. Concurrently, the framework is designed to spark curiosity among learners about AI and its potential career opportunities for those wishing to pursue opportunities in both STEM (Science, Technology, Engineering and Mathematics) and non-STEM fields.

To address question (b), the curriculum mapping process drew valuable insights from the frameworks mentioned in section 2.1; the competencies outlined in these frameworks helped shape the guiding principles and define the overall learning outcomes, which were further tailored to AI Samarth's target audience. The insights gained from these frameworks also informed the development of the core pillars, topics and subtopics of the AI Samarth AI Literacy Curriculum Framework for Students, as detailed in Section 3.

2.3 Defining AI Literacy for Bharat

Based on the learnings gained from the AI curricula mentioned in section 2.1, AI Samarth developed a contextualised AI Literacy definition tailored to its target audience, ensuring accessibility and relevance for the Indian context.

AI Samarth's Definition of AI Literacy

AI literacy refers to the knowledge and practices that help students, teachers and parents understand what Artificial Intelligence is, how it impacts our increasingly digital lives and how to use it meaningfully, safely and responsibly.

This definition aims to spark curiosity, raise awareness and cultivate safe, responsible AI use among learners in government and affordable private schools. More importantly, this definition draws a clear distinction between AI Literacy and technical skill-building, as explained in section 2.2.

2.4 Developing Guiding Principles

The guiding principles²³ of the AI Samarth AI Literacy curriculum framework was developed based on key insights from the comprehensive curriculum landscaping analysis. These five principles aim to inform the development of knowledge, skills and practices essential for developing holistic AI literacy among learners:

²² United Nations Educational, Scientific and Cultural Organization. (2024). <u>Al Competency Framework for Students</u>.

²³ According to Ornstein, A. C., & Hunkins, F. P. (2017) "To develop a well-rounded curriculum, guiding principles are key elements that shape its purpose, structure and implementation, ensuring it is coherent, relevant and meets learners' needs and educational goals".



Building conceptual knowledge of AI - This principle aims to establish a clear understanding of fundamental AI concepts, including how AI functions and its inherent limitations.
Emphasising human agency and critical thinking - This principle highlights the importance of human judgment in using AI, ensuring prevention of over-reliance on technology. This principle also focuses on encouraging learners to think critically while engaging with AI tools and keeping human agency at the centre of the interaction.
Awareness of real-world applications of AI - This principle focuses on broadening the understanding of AI's potential by illustrating its practical uses in everyday contexts and its role in addressing real-world challenges.
Encouraging ethical and responsible use - This principle underscores the importance of recognising both the benefits and risks associated with AI, encouraging responsible and ethical engagement with the technology.
Leveraging AI tools meaningfully - This principle focuses on imparting practical skills for the effective use of AI tools, such as crafting thoughtful prompts, while also emphasising the need for principal evaluation and human independent in accessing AI generated evaluates

2.5 Establishing Learning Outcomes

The overarching learning outcomes of AI Samarth's AI Literacy Curriculum articulate the knowledge, understanding and competencies learners are expected to acquire by the end of their learning journey²⁴. Through these outcomes, students, parents and teachers gain awareness of AI and its relevance in everyday life, develop a clear understanding of essential AI concepts and learn to use AI tools safely, ethically and responsibly. Learners also strengthen critical thinking skills while engaging with AI and begin to explore its potential to address real-world challenges. Collectively, these outcomes lay the foundation for a future-ready, AI-literate society:

critical evaluation and human judgment in assessing AI-generated outputs.

Table 3: Overarching Learning Outcomes of the AI Literacy Curriculum Framework for Students



Conceptual Understanding

Learners will be able to demonstrate foundational knowledge of key AI concepts, including how AI systems function and the principles that underpin them. They will be able to identify and describe core domains within AI and articulate broader ethical considerations, such as bias, fairness, accountability, transparency, cybersecurity and digital identity.



Critical Thinking

Learners will be able to apply critical thinking and reasoning to determine when and how AI should be used, challenge misconceptions and critically evaluate AI outputs. Learners will also be able to engage with AI tools in ways that promote independent and creative thinking.



Using AI Safely and Responsibly

Learners will be able to develop the capability to use AI tools thoughtfully and ethically, maintaining human agency and exercising independent judgment. Learners will also be able to recognise the risks of over-reliance on AI tools and build an understanding of safety, responsibility and accountability when interacting with AI technologies.

Harnessing AI's Potential

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Learners will identify practical applications of AI across various sectors and explore its potential to address real-world challenges. They will be equipped to apply diverse use cases of AI while considering the ethical, social and environmental impact of using AI, hence applying a balanced approach rooted in fairness, accountability and human-centered values.





2.6 Review by K-12 teachers

Teacher reviews were a core component of the AI Samarth curriculum design process, conducted at every stage to ensure the framework remained practical, relevant and ready for classroom use. K–12 educators from government and affordable private schools provided feedback on draft frameworks, topic selection and guidance for further content development. Their insights into on-ground classroom conditions informed the curriculum's design, ensuring appropriateness, conceptual clarity and ease of implementation. This ongoing engagement helped align the curriculum framework with the needs of students from the target segments, making it adaptable and effective across diverse educational settings.

Al Literacy Curriculum Framework for Students

The AI Samarth AI Literacy Curriculum Framework builds on the curriculum landscaping, guiding principles and overarching learning outcomes outlined in the previous sections. This framework will provide a holistic, structured and relevant learning pathway for middle and high school students in India. The framework aims to achieve a balanced integration of conceptual understanding, ethical awareness, critical thinking and practical application to equip students to be informed and responsible contributors in an AI-powered world. The adoption strategy of the curriculum is further detailed in Section 4, providing a guiding pathway for curriculum integration into educational systems.

3.1 Curriculum Pillars

To ensure comprehensive coverage, the curriculum is structured around four interconnected pillars that together provide a holistic foundation for AI literacy:



Pillar I: Understanding AI



This pillar aims to develop learners' awareness of what AI is, introduce how AI works and explain why it matters in their everyday lives. The pillar also helps learners distinguish between human and machine intelligence by highlighting the unique capabilities of both, fostering a deeper understanding of their respective roles. AI is introduced through familiar, real-world examples such as voice assistants, recommendation engines and navigation apps to help students recognise AI in their surroundings.

By offering a general overview of AI's capabilities, history and use cases, this pillar builds a conceptual foundation for informed engagement with AI technologies.

Pillar 2: Essential AI Concepts



This pillar aims to develop learners' understanding of key technical domains that underpin AI systems, such as data literacy, machine learning (ML), natural language processing (NLP) and computer vision (CV). While the curriculum remains focused on AI literacy, this pillar aims to ensure students can grasp how AI tools function and understand the training and development process of AI tools at a broad level.

Pillar 3: Social Impact and Ethics of AI



This pillar aims to raise learners' awareness of AI's profound impact on society and its applications across various sectors while highlighting potential risks and key ethical considerations. This includes understanding concepts of bias, fairness, accountability, privacy, cybersecurity, digital identity and transparency and their role in AI systems. Through this pillar, learners will build values, beliefs and ethical reasoning capabilities to assess when and how to engage with AI tools purposefully, responsibly and safely.

Pillar 4: Practical Applications of AI



This pillar aims to develop learners' ability to use AI tools effectively and responsibly in real-life contexts, such as for learning and school project work, communication and creative expression. It emphasises the importance of critical thinking, encouraging learners to evaluate AI-generated content thoughtfully and to avoid over-reliance on AI. Learners will be introduced to methods for verifying information, recognising AI's limitations and understanding the importance of questioning sources. This pillar ensures that learners are equipped to engage with AI in ways that preserve human accountability and agency, emphasising the importance of keeping human agency at the center of decision-making.

Together, these pillars ensure that students develop the knowledge, capacity, values and practices needed for safe, ethical and meaningful interaction with AI.

3.2 Curriculum Topics, Subtopics and Learning Outcomes

The four pillars of the AI Samarth Curriculum Framework are further broken down into specific topics and subtopics, each aligned with clearly defined learning outcomes. These outcomes articulate what students are expected to know, understand and be able to do by the end of their learning experience. The table below provides a detailed overview of how each pillar is translated into corresponding topics and subtopics:

AI Samarth's AI Literacy Curriculum Framework for Students			
Торіс	Sub-topic	Learning Outcomes	
Pillar 1: Understanding AI			
AI Around Us	Applications of AI in daily life	• Students identifies how AI is present around them and connects it with usage in daily life	
	Applications of AI around the world	• Students develops awareness about the applications or use cases of AI in various fields and its impact across the world	
	History of AI	 Students develops curiosity about the history of AI Students will develop the ability to describe how and why AI was developed 	
What is AI?/ Introduction to AI	Foundations of AI	• Students will develop the ability to describe what AI is and its basic concepts	
	Types of AI	• Students will develop the ability to describe the difference between the types of AI (Classic AI & Generative AI)	
AI and Human Intelligence	Machine's Capabilities & Human's Capabilities	• Students will develop the ability to describe the distinguishing factors between AI and human intelligence	

Table 4:AI Samarth's AI Literacy Curriculum Framework for Students

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Pillar 2: Essential Concepts of AI			
	Data Literacy	• Students will develop the ability to describe what data is and identify how machines receive and gather data	
	Machine Learning (ML)	• Students will develop the ability to describe what machine learning is and how it works	
Fundamentals of AI		• Students will develop awareness about the widespread applications of ML in real-life	
	Deep Learning (DL) and Neural Networks (NN)	• Students will develop the ability to describe the basic concept of neural networks and deep learning as a field in AI	
		• Students will develop awareness about the widespread applications of neural networks and DL in real-life	
	Natural Language Processing (NLP)	• Students will develop the ability to describe the basic concept of NLP as a field in AI	
		• Students will develop awareness about the widespread applications of NLP in real-life	
Domains of AI	Computer Vision (CV)	• Students will develop the ability to describe the basic concept of CV as a field in AI	
		• Students will develop awareness about the widespread applications of CV in real-life	
	Physical AI	• Students develop awareness about the concepts of physical AI such as autonomous vehicles, robotics, industrial AI and agentic AI	
	Pillar 3: So	cial Impact and Ethics of AI	
Social Impact of	Potential benefits of AI	• Students will develop a general awareness about the potential benefits of AI in society and the environment	
Society	AI for Good	• Students will develop the ability to describe and analyse the potential of AI in certain sectors	
	Potential risks of AI	• Students will explore the potential risks of AI in society and the environment	
	Bias and Fairness in AI	• Students will develop the ability to describe what ethical terms such as 'bias' and 'fairness' mean concerning AI	
		• Students will explore real-life examples of bias and fairness in AI systems	
Ethical & Risk	Data Privacy and Security in AI	• Students will develop the ability to describe and critically analyse the ethical issues around data privacy and security	
Considerations of AI	Cyber Security & Digital Identity	 Students will develop awareness about cybersecurity & digital identity 	
	Accountability, Responsibility, Inclusivity and Transparency around AI	• Students will develop the ability to describe the meaning and role of Accountability, Responsibility, Inclusivity and Transparency when interacting with AI tools	
	Impact of AI on the	• Students will be able to demonstrate curiosity and explore the environmental and societal impacts of AI, such as energy	

Pillar 4: Practical Applications of AI in Daily Lives		
	What are prompts?	• Students will develop the ability to describe what prompts are and where they are applicable
Prompting Strategies for AI	Developing effective prompts for daily life	 Students will develop the ability to describe certain components of prompts such as clarity, specificity and context of well-structured prompts while interacting with AI tools Students will develop the ability to think critically and design effective prompts and distinguish between clear and ambiguous prompts
	Guidance for using AI for Learning	 Students will develop the ability to identify when and how to use AI for learning Students will have the ability to engage with AI tools critically and use it meaningfully to support their learning journey
Practical Application of AI in	AI for Creative Projects	 Students will explore how AI tools can support creative expression and innovation in areas such as art, writing and music Students will develop the ability to engage with AI tools critically and understand that these tools are used to aid the creative journey and not replace their cognitive abilities
Daily Activities	AI for Schoolwork and Problem-Solving	 Students will develop awareness on how AI can assist in gathering, organising and summarising information for school work Students will develop the ability to critically engage and apply AI tools to produce solutions for real-world problems in their community
	Challenges in the Application of AI	• Students will develop the ability to critically assess AI- generated outputs, recognise potential errors or inaccuracies and cross-verify the information generated by AI
	Users of AI: Adoption of AI in various sectors	• Students will develop awareness about potential career opportunities in AI in the Science, technology, engineering and mathematics (STEM) field
Careers with AI	Builders of AI: Creation of new AI systems to solve real-world problems	• Students will develop awareness about potential career opportunities in the non-STEM field

As the field of AI is rapidly evolving, the curriculum is updated and relevant to the extent possible up to May 2025

4 Guidance on using Al Samarth's Al Literacy Curriculum Framework

The AI Samarth AI Literacy Curriculum Framework serves as a flexible and adaptable blueprint for integrating AI literacy into India's school ecosystem. The curriculum framework supports the development of a flexible, holistic curriculum designed to cater to diverse learning levels, allowing institutions to customise its depth and breadth based on local contexts, grade levels, institutional goals and the varying readiness of students and teachers in terms of their awareness, understanding and use of AI. Topic selection and instructional approaches can be tailored to align with classroom time, student competencies and regional AI readiness, ensuring accessibility and relevance across diverse settings.

How Different Stakeholders Can Adopt the Curriculum Framework:



5 Conclusion

As AI continues to reshape industries, economies and our everyday lives, it is essential to build a strong foundation in AI literacy early on to create an AI-literate society that can fully harness its potential. Initiatives like the IndiaAI Mission reflect India's commitment to embracing this technological shift and establishing itself as a global leader in the AI ecosystem.

AI Samarth envisions a future where AI literacy is embedded across all schools in India, enabling students, teachers and parents to engage with AI meaningfully, safely and responsibly. AI Samarth aims to collaborate with government bodies, education departments, school leaders and civil society organisations to raise awareness and promote the strategic integration of AI literacy into the national and state education fabric.

As we move toward an increasingly AI-driven world, it is essential to equip every student with the knowledge, skills and mindset to engage with AI safely, ethically and effectively. Building an inclusive foundation for AI literacy today will ensure that learners across the country are prepared to lead, adapt and thrive in the world of tomorrow.

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