Mindspark
AI & Digital Thinking

Complete Curriculum Overview — Levels 1 through 8

8	8	~114	36
CORE STRANDS	LEARNING LEVELS	IN-SCHOOL HOURS	WEEKS / YEAR (L5–8)

Aligned with CBSE AI & Computational Thinking Curriculum · OECD AI Principles · DigComp 2.2 (EU) · AI4K12 / AI Literacy for All · ICILS · UNESCO AI Competency Framework

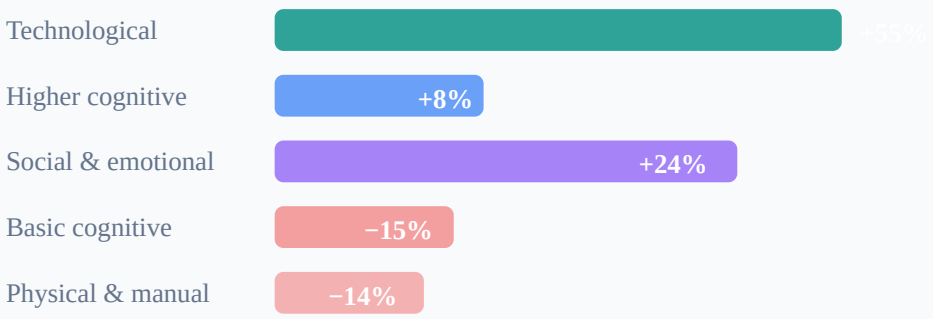
EDUCATIONAL INITIATIVES · MARCH 2026

THE OPPORTUNITY

It's Time to Reimagine the ICT Period

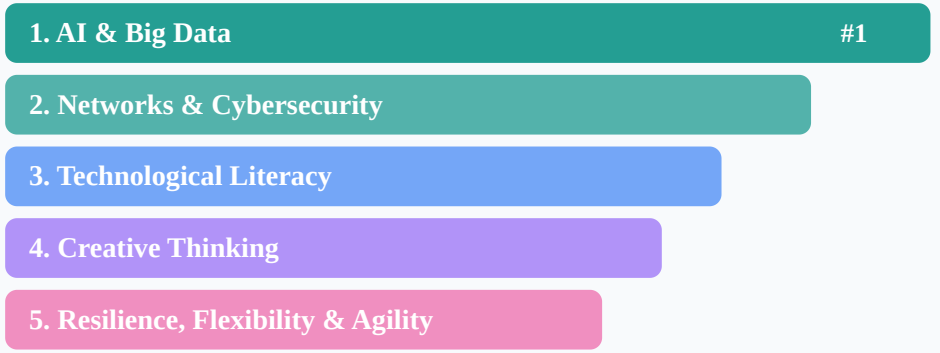
The world has changed. The ICT classroom hasn't kept pace — not because schools aren't trying, but because the purpose of this period has fundamentally shifted. Here's what the evidence says.

Skill demand shift by 2030



Source: McKinsey Global Institute, Skill Shift (2018)

Top 5 fastest-growing skills (2025–2030)



Source: WEF Future of Jobs Report 2025 (1,000+ employers surveyed)

39%

of core workplace skills will change by 2030

WEF Future of Jobs 2025

The world has moved from "learn to use computers" to "learn to think with computers"

When ICT was introduced in schools, the goal was digital access — teach children to type, use office tools, browse safely. That goal has been achieved. The new goal is digital fluency: understanding how technology thinks, decides, and shapes the world. Every major framework — OECD, UNESCO, CBSE, ISTE — now says the same thing: **AI literacy is non-negotiable for every child.**

Source: OECD-EC AILit Framework, 2025; PISA 2029 MAIL

India: AI & CT mandatory from Class 3 in 2026–27

CBSE has announced AI + Computational Thinking as mandatory from Class 3 onwards. Schools that start building this muscle today — with structured curriculum, not ad hoc experiments — will be ready when the mandate arrives. Schools that wait will be starting from scratch.

Source: Ministry of Education, India; CBSE Governing Body, Oct 2025

AI has turned the ICT period into the most important room in the school

Five years ago, if a child missed ICT class, the consequence was minor. Today, AI literacy, data reasoning, and computational thinking are being called the fourth foundational skill alongside reading, writing, and arithmetic. The ICT period didn't change — the world around it did.

~50% of Gen Z can't critically evaluate AI outputs

Students use AI every day but without the skills to question, verify, or understand what it produces. They learn about AI from social media, not educators. The gap between AI usage and AI understanding is widening — and schools are the only place that can close it.

Source: OECD-EC AILit Framework Background Research, 2025

Advanced IT & programming skills: up to +90% demand by 2030

McKinsey projects demand for technological skills will grow 55% overall, with advanced IT and programming up to 90%. These aren't niche specialisations — they are the new baseline. The best ICT classrooms in the world don't teach software. They teach skills that survive software.

Source: McKinsey Global Institute, Skill Shift, 2018

The ICT period is the most underleveraged hour in your timetable.

It's time to change that.

Your school already teaches thinking in Maths and Science. You invest deeply in pedagogy, structured syllabi, and measurable outcomes for every core subject. The ICT period has the same potential — it just hasn't been given the same structure yet. Not because anyone is doing a bad job, but because the purpose of this period has evolved faster than any curriculum could keep up with.

You wouldn't teach Maths with only a calculator manual. The ICT period deserves the same rigour: not just teaching children to use tools, but developing the computational, analytical, and critical thinking that makes them powerful users of *any* tool — including ones that don't exist yet.

And your teachers don't need to become AI experts to make this happen. They need a platform that does the heavy lifting — structured, self-paced, interactive — so they can focus on facilitation, not content creation.

Ei Mindspark AI & Digital Thinking gives the ICT period the same structure, progression, and accountability that Maths and Science take for granted. Ten strands. Eight learning levels. Measurable outcomes at every stage. Every session is interactive, scaffolded, and purposeful — no filler, no busywork.

Same slot. Same teacher. Same timetable. A completely different level of learning.

OVERVIEW

Program Structure at a Glance

A skills-based curriculum for the ICT classroom. One dedicated period per week (~30 min), fully interactive, zero passive learning.

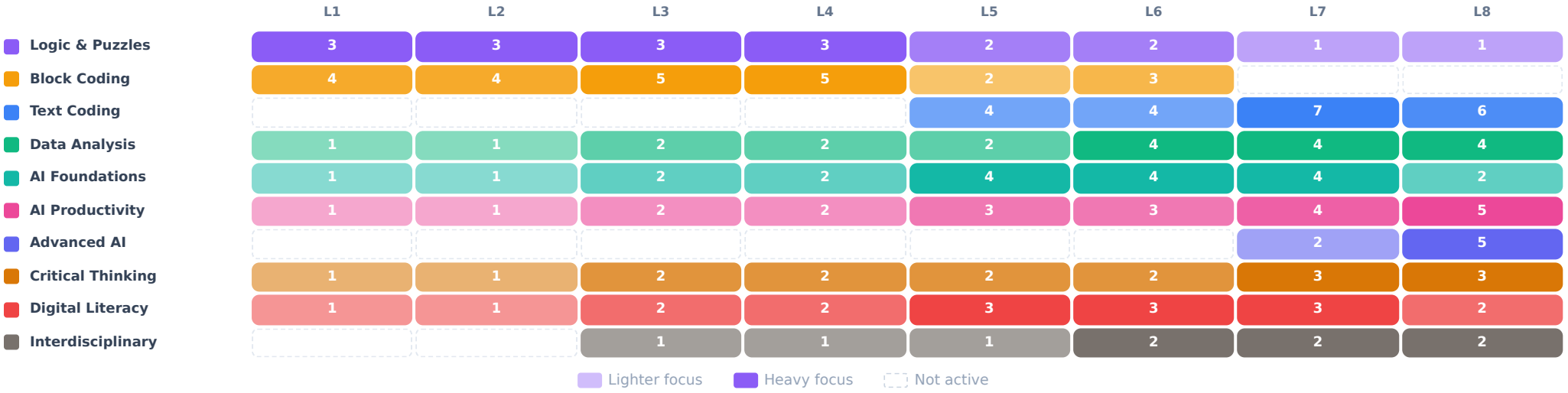
STRAND	WHAT STUDENTS LEARN	ACTIVE LEVELS	TOTAL WEEKS
Logical Thinking	Constraint satisfaction, deduction, elimination, spatial reasoning, and optimisation through interactive puzzles	1 – 8	23 weeks · ~11.5 hrs
Programming	Block coding (drag-and-drop) in Levels 1–6, transitioning to text coding in JavaScript (p5.js) and Python in Levels 5–8	1 – 8	42 weeks · ~21 hrs
Data Analysis	Reading, sorting, filtering, visualising, and arguing with real-world data — from tallies and bar charts to regression and A/B testing	1 – 8	22 weeks · ~11 hrs
AI Foundations	Demystifying AI: how it sees, learns, decides, and errs. Training data, neural networks, bias, ethics, encryption	1 – 8	22 weeks · ~11 hrs
Advanced AI	Transformers, GANs, large language models, AI safety & alignment, autonomous agents, model evaluation	7 – 8	7 weeks · ~3.5 hrs
AI Productivity	Hands-on AI use — prompting AI to create art, games, music, debate scripts, chatbots, and code	1 – 8	23 weeks · ~11.5 hrs
Critical Thinking	Fact vs. opinion, fallacies, probability, correlation vs. causation, game theory, Fermi estimation, statistical literacy	1 – 8	18 weeks · ~9 hrs
Digital Literacy	Online safety, passwords, privacy, cyberbullying, deepfakes, copyright, misinformation, digital identity	1 – 8	17 weeks · ~8.5 hrs
Interdisciplinary	Applying digital skills to Science, Social Science, and Maths — simulations, geographic data, historical analysis	3 – 8	10 weeks · ~5 hrs

The full program includes five content types: LEARN — structured interactive weekly sessions (~30 min each, in school) · **CREATE** — open-ended projects done at home · **Hackathons** — timed in-school challenge sessions · **Unplugged** — offline collaborative worksheets (~1 hr each) · **Assessments** — formal term-wise evaluations, 3 per level per year.

AT A GLANCE

How Every Strand Evolves Across Levels

Darker shading = heavier focus at that level. Numbers show weekly session count. Dashed = strand not active.



Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
17 sessions · ~8 hrs · 7 strands	17 sessions · ~8 hrs · 7 strands	26 sessions · ~13 hrs · 8 strands	26 sessions · ~13 hrs · 8 strands	36 sessions · ~18 hrs · 8 strands	36 sessions · ~18 hrs · 8 strands	36 sessions · ~18 hrs · 9 strands	36 sessions · ~18 hrs · 9 strands

Key transitions: **Block → Text coding** — Block coding ends at Level 6. Text coding (p5.js, then Python) takes over from Level 5. · **Advanced AI unlocks** — The 9th strand appears at Levels 7–8 with deep neural nets, LLMs, and AI ethics. · **Data gets serious** — From counting charts at Level 1 to SQL, regression, and A/B testing by Level 8.

How to read the following pages: The curriculum is detailed in four tables — two levels per table. For each level, you will see what skills and concepts are taught, the kinds of activities students engage with, and the learning outcomes expected by year-end.

PHASE 1 · FOUNDATION

Levels 1 & 2 — Learning to Think

Students encounter computational thinking for the first time through playful, visual, and hands-on activities. The focus is on building foundational habits: following instructions, recognising patterns, reading simple data, and developing awareness of the digital world and AI.

STRAND	LEVEL 1 — 12 WEEKS OF LEARNING · 17 SESSIONS · ~8 HRS	LEVEL 2 — 12 WEEKS OF LEARNING · 17 SESSIONS · ~8 HRS
Logical Thinking 4 WKS → 3 WKS	Simple constraint puzzles using **colours, patterns, and elimination**. Students learn to test possibilities systematically. *e.g. cracking passcodes, balancing colour equations*	Multi-step deduction puzzles involving **letter sequences and advanced pattern-matching**. Ordered thinking with more constraints. *e.g. unscrambling letter sequences, multi-clue passcodes*
Programming 3 WEEKS EACH	**Sequencing** — guiding a character through mazes using drag-and-drop commands. Students learn that computers follow instructions in exact order and practise debugging. *e.g. navigating a robot through maze grids*	**Conditionals (if/else)** — navigating a character through courses requiring decisions. Code can branch: "if the path is blocked, try another way." *e.g. conditional golf courses*
Data Analysis 1 WEEK EACH	**Counting, tallying, and reading pictorial charts** in contexts like transport modes. Students notice that data can tell stories.	**Spotting patterns** in simple data sets and making predictions. Moving from "what happened" to "what might happen next."
AI Foundations 1 WEEK EACH	Exploring how **computers represent images as grids of coloured pixels**. A first encounter with how machines "see" differently.	**Labelling and tagging** images to understand how AI learns from human-provided data. Experiencing training data firsthand.
AI Productivity 1 WEEK EACH	Giving **simple instructions to an AI to create drawings**. Experiencing AI as a creative tool and seeing how words shape output.	**Prompting AI to help create stories**. How the quality of instructions directly affects AI output — a first taste of prompt design.
Critical Thinking 1 WEEK EACH	Distinguishing between **statements that make sense and those that are silly or impossible**. Building the reflex of questioning.	Evaluating **who is making a claim and whether the source matters**. Introducing credibility and authority.
Digital Literacy 1 WEEK EACH	Understanding that **online actions leave traces** (digital footprints). A first lesson in being responsible in digital spaces.	Learning what makes a **strong password** and why protecting personal accounts matters. Practical cybersecurity awareness.

Each level also includes: 1 open-ended CREATE project (at home) · 2 Unplugged offline worksheets · 3 term-wise Assessments

LEARNING OUTCOMES

Levels 1 & 2

LEVEL 1 — LEARNING OUTCOMES

1. Follow and create simple step-by-step instructions (sequences)
2. Solve basic puzzles using elimination and pattern matching
3. Read and interpret simple pictorial charts and tallies
4. Understand that computers see images as tiny coloured squares (pixels)
5. Give simple instructions to an AI tool and observe the result
6. Distinguish sensible claims from silly or impossible ones
7. Explain what a digital footprint is and why it matters

LEVEL 2 — LEARNING OUTCOMES

1. Use conditional logic (if/else) to make decisions in code
2. Solve multi-step deduction puzzles requiring ordered thinking
3. Identify patterns in data and make simple predictions
4. Understand that AI learns from labelled data provided by humans
5. Use prompts to direct AI tools for creative output
6. Evaluate whether the source of a claim affects its credibility
7. Create strong passwords and understand basic account safety

PHASE 2 · BUILDING BLOCKS

Levels 3 & 4 — Thinking Gets Deeper

Complexity increases significantly. Puzzles become spatial, coding becomes story-driven and creative, AI concepts move into how machines decide, and the Interdisciplinary strand begins.

STRAND	LEVEL 3 — 20 WEEKS OF LEARNING · 26 SESSIONS · ~13 HRS	LEVEL 4 — 20 WEEKS OF LEARNING · 26 SESSIONS · ~13 HRS
Logical Thinking 4 WEEKS EACH	**Spatial reasoning and grid logic** — rotation puzzles, Sudoku-style grids, and pixel-art pattern creation. Systematic strategies for complex constraints.	**Strategic and optimisation puzzles** — balancing budgets, grid-based naval deduction, height-constraint towers, and packing problems.
Programming 5 WEEKS EACH	**Story-based block coding** — interactive stories with characters, dialogue, and scene changes. Introduces coordinates, positioning, events, and variables.	**Geometric art through loops** — complex patterns using repeat loops, nested loops, and parameters. Code efficiency through abstraction.
Data Analysis 2 WEEKS EACH	Working with **real-world weather and sales data**. Reading bar charts, comparing categories, and drawing conclusions.	Creating and interpreting **line graphs**. Filtering and sorting data sets to answer questions and spot trends.
AI Foundations 2 WEEKS EACH	How **decision trees classify objects** using yes/no questions, and the difference between **rule-based and learning-based AI**.	How **search engines rank results** using algorithms, and how **AI sensors collect data** from the physical world.
AI Productivity 2 WEEKS EACH	**Prompting AI to generate images and illustrations**. Clear instructions produce better output; vague prompts produce unpredictable results.	Using AI for **design (posters) and planning (schedules)**. Structured prompting and the habit of verifying AI output.
Critical Thinking 2 WEEKS EACH	Distinguishing **observation from inference**, and reasoned answers from guesses. Asking "how do I know this?"	**Estimation challenges** to build number sense, plus the distinction between **correlation and causation**.
Digital Literacy 2 WEEKS EACH	Learning to **refuse suspicious online requests** and evaluate whether links and pop-ups are safe to click.	Understanding how **social media feeds** are curated, and what **cyberbullying** looks like and how to respond.
Interdisciplinary 1 WEEK EACH	Exploring the **journey from farming to food** using data and simulations. Digital thinking meets Science and Social Science.	**Simulating plant growth** under different environmental conditions. Variable-testing and data analysis in Biology.

Each level also includes: 2 open-ended CREATE projects (at home) · 1 Hackathon · 2 Unplugged offline worksheets · 3 term-wise Assessments

LEARNING OUTCOMES

Levels 3 & 4

LEVEL 3 — LEARNING OUTCOMES

1. Solve spatial puzzles involving rotation, grids, and multi-step logic
2. Build multi-scene interactive stories using block code with coordinates and events
3. Read bar charts, compare categories, and draw simple data-driven conclusions
4. Explain how decision trees work and how rule-based AI differs from learning-based AI
5. Write clear prompts to generate AI images and evaluate the results critically
6. Distinguish observation from inference; demand evidence before accepting claims
7. Identify and refuse suspicious requests and unsafe links online
8. Apply digital skills to a real-world topic from another school subject

LEVEL 4 — LEARNING OUTCOMES

1. Solve multi-constraint optimisation and strategic deduction puzzles
2. Use loops, nested loops, and parameters to create efficient block code
3. Create line graphs; filter and sort data to find trends
4. Explain how search engines rank results and how sensors feed data to AI
5. Use structured prompts for AI design tasks and verify AI output before trusting it
6. Distinguish correlation from causation in everyday scenarios
7. Recognise how social media feeds are curated; respond appropriately to cyberbullying
8. Use simulations to test variables and draw scientific conclusions

PHASE 3 · THE LEAP

Levels 5 & 6 — From Users to Builders

Text-based coding begins (JavaScript via p5.js), neural networks are introduced, and AI productivity shifts from novelty to genuine skill. Students move from consuming technology to understanding how it works.

STRAND	LEVEL 5 — 30 WEEKS OF LEARNING · 36 SESSIONS · ~18 HRS	LEVEL 6 — 30 WEEKS OF LEARNING · 36 SESSIONS · ~18 HRS
Logical Thinking 2 WEEKS EACH	Advanced constraint puzzles — **inequality-based grids, pathfinding, sorting visualisation**. Links between puzzle strategies and computational algorithms.	Complex **deduction puzzles involving colour codes and spatial recreation from verbal instructions**. Capstone-level logic.
Programming 7 WEEKS EACH	**Text coding begins** — real JavaScript (p5.js): canvas, shapes, variables, loops, mouse input, conditionals, animation. Block coding wraps up with nested conditionals and Boolean logic.	Text coding advances: **functions with parameters, arrays, objects, event-driven programming**. Block coding capstone — composing music through code.
Data Analysis 2 WKS → 4 WKS	**Sorting, filtering, and arguing with real-world sports and science data**. Evaluating claims using data evidence.	**Cleaning messy data, sampling methods, data compression**, and building **interactive dashboards**.
AI Foundations 4 WKS → 4 WKS	The big AI concepts: **training vs. testing data, accuracy, bias in AI, recommendation algorithms, internet infrastructure, feedback loops**.	**Neural networks** — how neurons fire, multi-layer networks, the "black box" problem. Plus: **algorithmic feed curation** and AI ethics.
AI Productivity 3 WKS EACH	AI as a serious tool: **building debate scripts, prompt experimentation, creating games step-by-step with AI, debugging code with AI**.	Fluent AI-assisted creation: **building games, solving maths challenges, exploring AI-generated music**.
Critical Thinking 2 WKS → 2 WKS	**Evaluating advertisements** for facts vs. opinions, understanding **probability**, and detecting **bias in survey design**.	Identifying **logical fallacies**, exploring **paradoxes**, and **systems thinking** — interconnected systems where one change affects everything.
Digital Literacy 3 WEEKS EACH	Responsible **sharing online, identifying AI-generated deepfakes**, and using **advanced search techniques**.	Configuring **privacy settings**, understanding **copyright**, and analysing personal **screen time data** scientifically.
Interdisciplinary 1 WK → 2 WKS	Exploring **earthquake data, magnitude scales, and geographic patterns**. Data analysis applied to Earth Science.	**Population data visualisation** and modelling **how diseases spread**. Data meets Social Science and Biology.

Each level also includes: 2 open-ended CREATE projects (at home) · 1 Hackathon · 2 Unplugged offline worksheets · 3 term-wise Assessments

LEARNING OUTCOMES

Levels 5 & 6

LEVEL 5 — LEARNING OUTCOMES

1. Write text-based code using variables, loops, conditionals, and animation
2. Apply block coding skills including Boolean logic (AND/OR) and nested conditionals
3. Sort, filter, and argue with real-world data; evaluate claims using evidence
4. Explain how AI is trained, tested for accuracy, and can develop bias
5. Describe how recommendation algorithms and feedback loops shape experiences
6. Prompt AI effectively to build games, debug code, and create content
7. Distinguish facts from opinions; detect bias in surveys and media
8. Identify deepfakes and practise responsible online sharing

LEVEL 6 — LEARNING OUTCOMES

1. Write text code using functions, arrays, objects, and event listeners
2. Explain how neural networks process information (neurons, layers, thresholds)
3. Clean messy data, understand sampling bias, and build dashboards
4. Understand and critique how algorithms curate social media feeds
5. Navigate ethical dilemmas in AI deployment with reasoned arguments
6. Use AI fluently to build games, solve problems, and create music
7. Identify logical fallacies and think in terms of interconnected systems
8. Configure privacy settings and understand copyright basics

PHASE 4 · ADVANCED MASTERY

Levels 7 & 8 — Ready for the Real World

Block coding ends; Python begins. Advanced AI covers transformers, GANs, and the alignment problem. Students build with APIs, query databases, design chatbots, and tackle real-world dilemmas with nuance.

STRAND	LEVEL 7 — 30 WEEKS OF LEARNING · 36 SESSIONS · ~18 HRS (9 STRANDS)	LEVEL 8 — 30 WEEKS OF LEARNING · 36 SESSIONS · ~18 HRS (9 STRANDS)
Logical Thinking 2 WKS → 1 WK	**Advanced grid-based deduction** requiring multi-directional constraint analysis. Capstone-level puzzle mastery.	**Multi-constraint optimisation** — designing optimal layouts under competing requirements. The ultimate reasoning challenge.
Programming 6 WEEKS EACH	Advanced text coding: **DOM manipulation, APIs, data structures (stacks, queues, trees), search/sort algorithms, recursion**, and a **capstone interactive dashboard**.	**Python programming**: variables, control flow, functions, data structures, file I/O, and a **capstone data analysis tool**. A transferable language.
Data Analysis 4 WEEKS EACH	**Network/graph analysis, pivot tables, identifying bias in datasets**, and working with **geographic/mapping data**. Professional-grade data skills.	Introduction to **SQL for querying databases**, ethical data-use debates, **regression analysis**, and **controlled A/B experiments**.
AI Foundations 4 WKS → 2 WKS	How AI sees (**computer vision**), reads (**NLP**), secures data (**encryption**), and a survey of **AI across industries**.	Understanding **binary representation** and a comprehensive look at **real-world AI capabilities and limitations**.
Advanced AI 2 WKS → 5 WKS	**Deep neural network architectures** and **how large language models work** — training, text generation, capabilities and limits.	How **transformer attention** works, **GANs**, the **AI safety/alignment problem**, **autonomous agents**, and **model evaluation** (precision, recall, accuracy).
AI Productivity 4 WKS → 5 WKS	Professional-grade: **AI-assisted research, pair-programming with AI, translation tools**, and **designing simulations**.	Creating **generative art, chatbots, workflow automation, AI ethics auditing**, and **AI-powered accessibility tools**.
Critical Thinking 3 WEEKS EACH	**Formal logic operators** (AND, OR, NOT), **game theory**, and a deep dive into **cognitive biases**.	**Fermi estimation**, interpreting **statistical claims** in media, and structured **ethical reasoning** about complex dilemmas.
Digital Literacy 3 WKS → 2 WKS	Understanding **wireless technology**, decoding **terms and conditions**, and building a **digital wellbeing dashboard**.	Crafting a **positive digital identity** and systematically **dissecting how misinformation spreads**.
Interdisciplinary 2 WEEKS EACH	Analysing **climate datasets** and **simulating election outcomes** using polling data and statistical models.	Simulating **ecosystem dynamics** and analysing **historical events through data**. Capstone interdisciplinary thinking.

Each level also includes: 2 open-ended CREATE projects (at home) · 1 Hackathon · 2 Unplugged offline worksheets · 3 term-wise Assessments

LEARNING OUTCOMES

Levels 7 & 8

LEVEL 7 — LEARNING OUTCOMES

1. Build web applications using DOM manipulation and API integration
2. Implement and reason about data structures and classic search/sort algorithms
3. Explain how computer vision and natural language processing work conceptually
4. Describe how large language models are trained and generate text
5. Use AI as a research assistant, coding partner, and simulation tool
6. Apply formal logic and game theory to analyse strategic decisions
7. Identify cognitive biases and their effects on reasoning
8. Analyse geospatial and network data using pivot tables and maps

LEVEL 8 — LEARNING OUTCOMES

1. Write Python programs using functions, data structures, and file I/O
2. Query databases using SQL and design controlled A/B experiments
3. Explain transformer attention, GANs, and AI agent architectures
4. Evaluate AI models using precision, recall, accuracy, and F1 score
5. Articulate the AI alignment problem and propose safety considerations
6. Build chatbots, automate workflows, and audit AI systems for ethics
7. Use Fermi estimation and statistical literacy to evaluate real-world claims
8. Manage a positive digital identity and counter misinformation systematically

APPENDIX

How It's Taught — Pedagogy & Delivery

Every session follows consistent principles designed around one belief: no passive learning.

Delivery Model

One dedicated period per week (~30 min) in the school's ICT lab. Self-paced, fully interactive. Teachers facilitate via a real-time dashboard.

Weekly Session Structure

Introduction → Staged progression → Hands-on challenge → Observation questions → Connection summary → Synthesis. Fits one class period.

Zero Passive Learning

No long videos. No long reading. Every concept taught through interaction: puzzles, coding, data manipulation, AI prompting, simulations.

Scaffolded Wrong Answers

Incorrect answers trigger 3–4 intent-based follow-up questions guiding students from misconception toward understanding. Never just shows the answer.

Assessment & Reporting COMING SOON

3 formal assessments per level per year. Continuous formative assessment. Teacher dashboards show real-time per-student progress.

Balanced Progression COMING SOON

Soft-gating ensures balanced growth across strands — students cannot race ahead in one area while neglecting others.

CREATE Projects & Hackathons

Open-ended creation spaces (at home) and timed in-school challenges. Both build creative confidence alongside structured learning.

Unplugged Activities COMING SOON

2 offline worksheets per level per year for collaborative, physical, discussion-based activities that complement on-screen learning.

Teacher Autonomy COMING SOON

Teachers can activate any topic for the whole class — overriding individual progression for group instruction. Real-time completion tracking.

Vernacular & Accessibility

Audio + text content. Multiple languages supported. Largest deployment: 70,000 students in Telugu across Telangana government schools.

Framework Alignment: CBSE AI & CT · OECD AI Principles · DigComp 2.2 · AI4K12 · ICILS · UNESCO AI Competency Framework