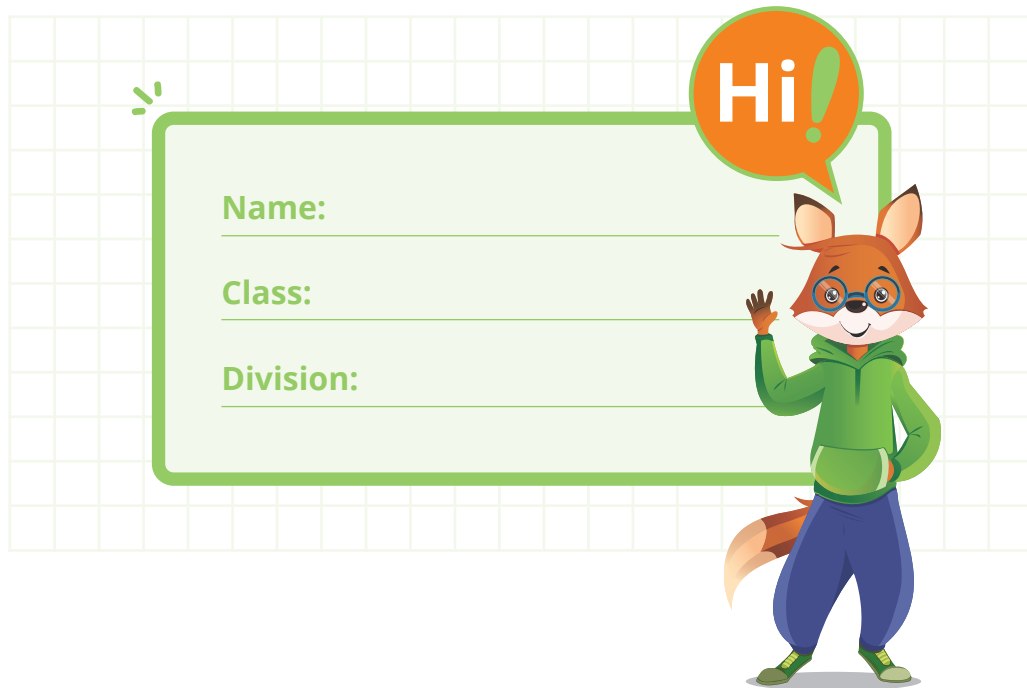


CLASS 7



CCS

PART 1



Head Office
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NOTE TO PARENTS

USE

THINK

BUILD

Coding and computational thinking are set to become core life skills for the future just as literacy and numeracy are today. Most advanced countries have included coding as part of the core curriculum and NEP 2020 clearly sets out the roadmap for the Indian education system as well.

The Coding and Computational Skills (CCS) program follows a unique USE-THINK-BUILD (UTB) pedagogical approach.

USE



The first step in the UTB approach is to take the students through an immersive experience that introduces them to their project. Students USE apps, games, websites, visualizations and engage with audio-visual content. This helps them obtain the perspective and user experience of what they would be creating through their project.

THINK



The second step in the UTB approach is to make students THINK. Through independent and group activities and routines, students learn to understand the computational thinking and logic that is required to build their project. This deeper understanding helps them develop skills like observation, visualisation, design, critical thinking, problem solving, and decision making.

BUILD



The third and final step in the UTB approach is to make students BUILD their projects - puzzles, artwork, publication, animations, apps, games or websites. Students use age-appropriate, easy to use software and applications to bring their ideas to life. The ability to build, code and showcase their projects is essential to nurturing their creativity and express their ideas.

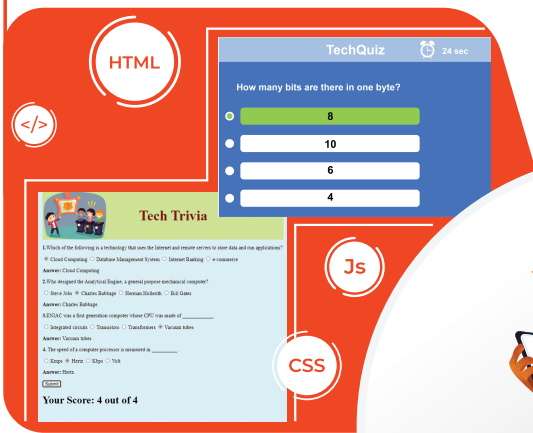
The LEAD CCS curriculum and progression is benchmarked against international standards and there is a clear skill progression through each grade, making the LEAD CCS program one of the most comprehensive programs available to schools and parents.

NOTE TO PARENTS

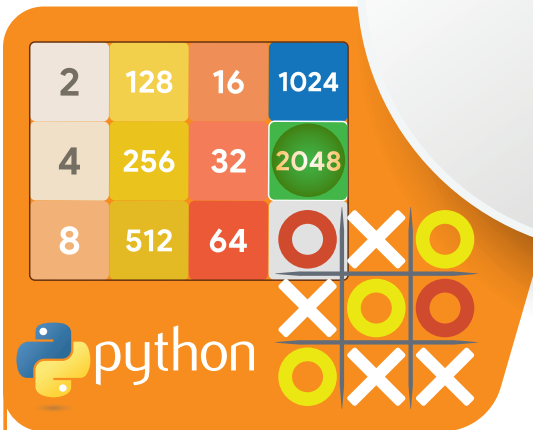
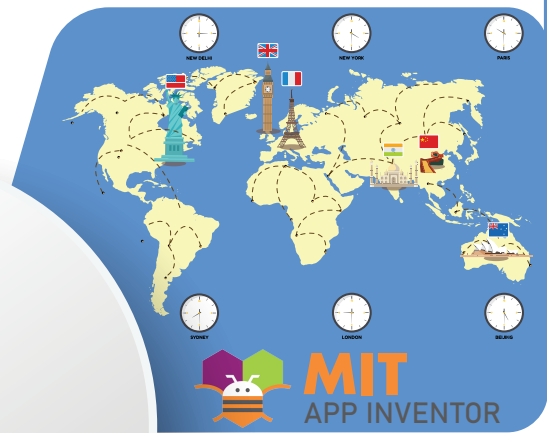
Your child has an exciting year of learning ahead! While learning to code, children need to develop computational thinking. To help them acquire the skills without being discouraged by the technicality of the subject, we take them through simple yet exciting App creation using MIT App Inventor in Class 7. Since MIT App Inventor is an intuitive, visual programming environment, they will find it interesting and entertaining and thus be comfortable with coding from the beginning. Eventually, the students advance to text-based coding with Python to build on their coding and computational skills.

Given below are some highlights of their learning path in CCS in this school year. By the end of this year, your child will be able to:

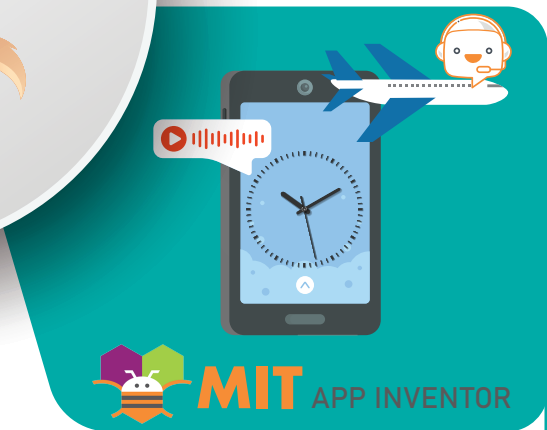
Visualise and use their creativity and coding skills to create a quiz-based responsive website using HTML, CSS, and JS



Use their design and sequencing skills to create an AudioNotes app, an AroundTheWorld app, and a FlagQuiz app using the MIT App Inventor software



Visualise, analyse, and use their abstraction, critical-thinking and coding skills to create games such as Treasure Trove, Hangman, 2048, and Tic-Tac-Toe using Python








Use their design, sequencing, and coding skills to create a VoiceClock app and a TravelBot app using the MIT App Inventor software

This curriculum will not only improve the coding skills of children, but will also make them good problem-solvers, decision makers, and critical thinkers by developing their analytical and higher-order thinking.

HOW TO USE THE BOOK

The book is an integral part of the Coding and Computational Skills (CCS) program. Each class has a CCS book that covers the important skills for learners. Specific learning outcomes for each unit can be found at the start of each unit. There are various activities that build computational thinking and cover the requisite skills to be learnt through that unit.

Key sections of this book:

<p>Learning Outcomes list the expected measurable learning outcomes achieved by the student that will be covered through the unit.</p>	<div><div>Learning Outcomes</div><ul style="list-style-type: none">Identify and use components in the App Inventor Development Environment.Design and build an app — AudioNotes — using a speech recogniser.Create an app — AroundTheWorld — using lists.Create an app — FlagQuiz — using variables, conditionals, and operators.</div>			
<p>Introduction gives a brief of the skills and the projects that the students are going to cover in the unit.</p>	<div><div><div>Introduction</div><div><p>Welcome to Explore the World with Apps!</p><p>In this unit, we will go on an interesting journey around the world by learning to build apps using the MIT App Inventor tool.</p></div></div></div>			
<p>Observations table is used to list the recordings from the videos/apps reviewed in class.</p>	<div><div></div><div><div>Observations</div><table><tr><td></td></tr><tr><td></td></tr><tr><td></td></tr></table></div></div>			
<p>Skill Time contains the Use-Think-Build approach to enable learning. It contains activities that are to be done in the class.</p>	<div><div><div>Skill Time 1</div><div><p>App Inventor Development Environment</p><p>As we explore some travel apps, it is interesting to observe how these apps are created. Creating your own app is very easy with the help of software tools such as App Inventor. Let us learn how to use App Inventor.</p></div></div></div>			
<p>Activity is essentially for building skills through which students can identify the extent to which they have attained the learning outcomes of the unit.</p>	<div><div><div><div>Activity</div><div><p>2.1 How would you like to design a similar app using a button, a label, three textboxes, and a screen from the images given below?</p><div><div><div></div><div></div><div></div><div></div><div></div></div><div></div></div></div></div></div></div>			

HOW TO USE THE BOOK

QR Codes are available at various points in the workbook to enhance learning through content and to enable rewards (badges and certificates) on completing specific levels.



SCAN ME

For Videos



SCAN ME

For Certificates
and Badges



SCAN ME

For Documents

Diary Entry is used to keep a check on the skills that students have learned through the Skill Time.










Diary Entry	I can
Identify different sections of Designer and Blocks View.	<input type="checkbox"/>
Use Mutator Blocks.	<input type="checkbox"/>
Create AudioNotes App.	<input type="checkbox"/>

Practice Questions are primarily for home practice and for students to identify the extent to which they have attained the learning outcomes of the unit.

Practice Questions

- Which of the following tabs is used to change the background image of a button in App Inventor? Tick the correct answer.

ANNUAL LEARNING PLAN

PART 1	Unit Name	USE	THINK	BUILD	Unit No.
	Explore the World with Apps — I	MIT App Inventor with emulator/ AI2 companion	Imagine, Design and Sequencing	Create an AudioNotes app, an AroundTheWorld app, and a FlagQuiz app using operators, variables.	1
	Explore the World with Apps — II	MIT App Inventor with emulator/ AI2 companion	Develop, Design and Sequencing, Coding	Create a VoiceClock app and a TravelBot app using sensors and procedures.	2
	Treasure Trove	Python (Introduction)	Abstraction, Sequencing, Coding	Create a text-based adventure game — Treasure Trove.	3
	Hanging by a Thread	Python (Basic)	Abstraction, Visualisation, Sequencing, Coding	Create a shape-drawing game, a Turtle Competition, and a text-based interactive game — Hangman.	4
PART 2	Unit Name	USE	THINK	BUILD	Unit No.
	2048 to Tic-Tac-Toe	Python (Advanced)	Visualisation, Creativity, Critical Thinking, Analysis, Abstraction, Coding	Create popular logic-based games like 2048 and Tic-Tac-Toe.	5
	Cupcake Snake	Python (Projects)	Visualisation, Creativity, Critical Thinking, Analysis, Abstraction, Coding	Design screen games like Cupcake Snake using Python libraries.	6
	Tech Trivia	HTML CSS JS	Creativity, Visualisation, Coding	Create an interactive web page.	7

Contents		Page No.
Annual Learning Plan		07
Unit 1	 Explore the World with Apps — I	09
Unit 2	 Explore the World with Apps — II	22
Unit 3	 Treasure Trove	33
Unit 4	 Hanging by a Thread	45

The CCS book contains important skills that students learn in class. Each unit comprises of a few skill times and a final project. A Skill Time includes many plugged and unplugged activities. Students should complete the activities in the book after seeing a video or demonstration by the teacher in class as per the LEAD learning plan.

Students should read the CCS book at home for revising the concepts taught at school. They can scan the QR codes at home to watch the videos, read the documents, and download the badges and certificates. Students should also refer to it while preparing for assessments.