EduPi Learning

#1 Koshur online platform for kids

Coding Junior Programme

Grade 4 and 5

CLASS 1-20 — Animation and Flow of Control

Students will learn basic programming concepts and animation with the help of block based coding

- ☑ Drawing Sprites
- ☑ Events
- ☑ Loops
- ☑ Sprite Lab

CLASS 40-60 — Basic Game Development

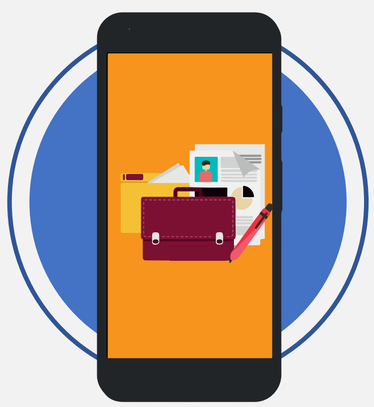
Students will learn more about programming and will to introduced to game development and will learn about commands and sequence

- ☑ Drawing Backdrops
- ☑ Conditions
- ☑ Nested Loops
- ☑ Controls

CLASS 20-40 — Basic App Development

Students will learn basic fundamentals of programming concepts and create basic single screen apps with help of block based programming

- ☑ User interface
- ☑ Variables
- ☑ UI:Buttons
- ☑ App lab



CLASS 60-80 — Basic App Development

Students will learn about app development where they will bring their imagination to the digital screen

- ☑ Multi screen apps
- ☑ Sensors
- ☑ Functions
- ☑ UI Controls

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CJP – Term 1

Class 1 to 20

Animation and IO - Logic

In this term students will be introduced to the basic concepts of programming and coding. The course will take the students through a series of simple activities designed to channel the attention of students towards programming. The essentialities and necessities of programming are discussed through the creation of animations that intrigue a child's mind. This enhances the passion for programming in the child.

Module	Key Theme	What will the student learn
M1 (Classes 1 to 5)	**Block Based Programming**	Students begin their journey with coding from simple interfaces of drag and drop programming. They will learn about programming fundamentals and animation. They will create a 'Disco Party' animation project.
M2 (Classes 6 to 10)	**Design Thinking**	Students will start to create designs, backdrops and characters for animations. This will enhance their CQ and develop design thinking skills inside them. They will create an animated postcard and a story.
M3 (Classes 11 to 15)	**Events**	Students will learn about the essentials of how some input is causes an output action. Events that trigger actions is coding will be taught. Students will create a 'Piano' interface.
M4 (Classes 15 to 20)	**Sensors and Geometry**	Students will learn how the hardware of computers interacts with the software via a simple activity. Flow of control will be taught using simple lines of drag and drop coding. Students will learn the construction of simple geometric shapes via coding.

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CJP – Term 2

Class 21 to 40

Basic App Development

This term will take children into the basics of app development. They will create apps via coding on drag and drop platforms. Creating applications that can actually be materialized on a mobile device leads gives a child a sense of achievement and this leads to increase in interest in programming activities. Students will understand the steps involved in the development of applications viz. Design, Coding, Debugging, Testing and Publishing.

Module	Key Theme	What will the student learn
M1 (Classes 21 to 25)	**Basic App Development**	Students will be introduced to app development. They will learn about the basic interface of Thunkable. Basic programming concepts will be taught and students will create a 'Color Switch App'.
M2 (Classes 26 to 30)	**UI Design**	Students will learn about the basics of User Interface of applications and the elements on an app screen. They will about the interaction of various elements and create a 'Mood Counter App'.
M3 (Classes 31 to 35)	**Thunkable I**	Students will integrate the previously learnt concepts into two new apps. They will learn the concepts of logic and Machine Learning via a 'Calculator App' and a simple 'Translator App'.
M4 (Classes 36 to 40)	**AI Apps I**	Based on the knowledge gathered, students will be able to create applications that integrate trained Machine Learning models into their apps. They will also learn about the sensory devices that are integrated inside mobile devices. They will create a 'Speech Recognizer App'.

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CJP – Term 3

Class 41 to 60

Basic Game Development

In this term students will be introduced to the basics of Game Development. The term will take the students through drag and drop game development. Students will learn about planning and designing exciting games via coding. Students will learn about basic programming concepts while creating fun games. This increases the interest and the IQ of the student. Students will also work on a group project which will encourage peer learning.

Module	Key Theme	What will the student learn
M1 (Classes 41 to 45)	**Scratch I**	Students begin their journey in Game Development. They will learn about game plan, elements of a game, game design and basic logics of games. They will create sprites, backdrops and scenes. They will also understand the basis of win lose scenarios.
M2 (Classes 46 to 50)	**Game Dev I**	Students will learn about games and logic. They will learn and use concepts of loops, events, variables, win lose scenarios and coordinate axis. They will also learn about simulating physics of gravity in games.
M3 (Classes 51 to 55)	**Game Dev II**	Students will learn more about game development and develop an understanding of shooting games and learn about the sensing block and sensing instructions. Students will also create a very basic 'Shooting Game'.
M4 (Classes 56 to 60)	**Game Group Project**	Students will be divided into groups by the teacher and all the groups will be assigned a game to develop on their own. This will teach them the essence of team work and help them apply and revise the concepts learnt in the previous classes.

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CJP – Term 4

Class 61 to 80

Basic App Development

In this term students will take on intermediate level of app development. The term will further elaborate on understanding the steps involved in the development of applications viz. Design, Coding, Debugging, Testing and Publishing. They will also elaborate on introductory concepts of Machine Learning and Artificial Intelligence. Students will also work on a group project which will encourage peer learning.

Module	Key Theme	What will the student learn
M1 (Classes 61 to 65)	**Speech Recognizer**	Students will revisit their knowledge of app development and start creating a new project 'Speech Recognizer'. They will learn about microphone sensor, Speech recognizer api and Machine Learning concepts will be revisited.
M2 (Classes 66 to 70)	**Multi - Screen UI**	Students will learn about the basic interaction of multiple screens on an application. They will create a 'Multiplication Table app' which will use multiple screens for different tables. They will also create an app called 'Shake Your Phone' which will cover basics of the gyroscopic sensor.
M3 (Classes 71 to 75)	**AI Apps II**	Students will create an application that recognizes images taken from the camera of the phone. They will learn about invisible components in an application that work on the backend without being visible to the user. They will also create an app 'Pdf Reader'.
M4 (Classes 76 to 80)	**Application Group Project**	Students will be divided into groups by the teacher and all the groups will be assigned the task of developing an application on their own. This will teach them the essence of team work and help them apply and revise the concepts learnt in the previous classes.