

# Codingal

Codingal curriculum is tailored for K-12 children and complements their learnings at school by allowing them to use coding to develop a deeper understanding various subjects and concepts. This makes coding a learning-aid and makes the learning process fun and interactive.

Our curriculum is designed to inspire children to create through code. A practice that has been proven to develop a child's creativity, logical thinking and problem-solving skills.

Our curriculum combines the power of code with STEAM (Science, Technology, Engineering, Arts and Maths) education. This unique pedagogic approach encourages children to apply their learnings at school and their coding skills to solve real-world problems.

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## Kids and parents love us



Codingal's demo class helped me develop a keen interest in coding. So I decided to learn app and web development. Coding is now super fun for me, and it has improved my thinking and logical skills.

Dishita Karkare

Grade 5 | Bengaluru, India



My journey with Codingal started a few weeks ago. My teacher is very nice and understanding. She even gives me assignments to help me understand the concepts. I'm really excited about learning more about coding with Codingal.

Abdul Hannan

Grade 3 | Nigeria



The teachers are friendly and my son is able to understand the concepts easily. In just three classes, he was able to create basic steps in a program used to make animations. I think Codingal can help him grow and understand how to progress in a field which is much-needed nowadays and will be even more so in the future.

Mr. Samar Shareef

Abuja Nigeria



### What your kid will learn | Grade 6-8

#### 20 classes

### **Rising Coding Star**

An ideal course to help kids quicky grasp the basics of coding and start writing code using blocks.

60+ Activities 3 Quizzes

per class

- Scratch programming
- ✓ Loops, variables, conditionals
- Application development
- Game development
- Algorithms
- JavaScript
- Sprite Lab
- App Lab

- $\Psi$  Lifetime community access

44 classes

### **Coding Champion**

A course to advance your coding skills and build a deeper understanding of complex coding concepts.

100+ Activities 7 Quizzes

per class

- All Rising Coding Star learnings +
- Basic and advanced loops
- Artificial intelligence
- Machine learning
- Deep learning
- Neural networks
- Advanced game development
- Shapes and patterns

- Coding Champion Certificate
- The Game development certificate
- Lifetime community access

92 classes

### **Coding Prodigy**

A perfect course for kids who want to excel at coding and build complex games and applications.

**184+ Activities** 15 Quizzes

per class

- All Coding Champion learnings +
- Advanced web development
- Advanced app development
- Portfolio creation
- Artificial intelligence
- Andriod app development
- ✓ API, databases
- Wordpress, Firebase
- **Y** Game, app development certificate
- Scholarships for top five performers
- ♀ Lifetime community access

152 classes

### **Coding Grandmaster**

A course for those who want to master the art of coding and create a better future through code.

450+ Activities 25 Quizzes

per class

- All Coding Prodigy learnings +
- Bootstrap
- Advanced JavaScript
- Advanced Python
- Object-oriented programming
- ✓ Data structures
- Data science, data analysis
- ✓ NumPy, Pandas
- Coding Grandmaster Certificate
- Python development certificate
- ♀ Al game developer certificate
- Scholarships for top five performers
- ♀ Lifetime community access



### **Rising Coding Star**

3+

Classes
Skill level
Price

20
Advanced
₹ 800

Activities
Age group
per class

60+
Grade 6-8



### Key learnings

- Sprite Lab (code.org)
- Play Lab (code.org)
- App Lab (code.org)
- Minecraft (code.org)



#### **Benefits**

- Foundation of coding
- Game development
- Logic building
- Code flow and methodology



- Rising Coding Star Certificate
- Lifetime community access

Module	Theme	Topics Covered	Outcome
M1 (8 Classes)	Game Development - I	Introduction to Game Lab, sprite interactions, shape drawing, randomization, introduction to JavaScript, and more	In this module, students will be introduced to Game Lab and will become familiarized with JavaScript programming by creating animations and games. They will also learn sprite control, theme development, and conceptualization.
M2 (6 Classes)	Game Development - II	Draw loops, pattern creation and sprite movements, conditionals and predictionals	In this module, students will learn functional programming in games and use complex modules such as velocity detection, collision detection, sprite interaction, etc.
M3 (6 Classes)	Basic Scratch	Introduction to Scratch, events, coordinate, creating sprites	Students will learn Scratch programming and will build various games using the basic concepts of coding such as loops and conditionals. Through this module, they will also develop their problem solving skills and logical development.



### **Coding Champion**

Classes

Skill level

Price

Advanced

Age group

<sup>₹</sup>750 per class

**Activities** 

Grade 6-8 100+

Quizzes

7+

44



### Key learnings

- JavaScript (code.org)
- Scratch
- Artificial intelligence
- Natural language processing



#### **Benefits**

- Improved aptitude
- Critical thinking
- Creativity
- Advance coding concepts



- Coding Champion Certificate
- Lifetime community access
- Internship opportunity
- Publish your app to the Playstore\*

Modules	Themes	Topics Covered	Outcome
All Rising Coding Star modules +			
M4 (6 Classes)	Advanced Scratch	Loops, conditionals, algorithms, coordinate systems, and game building	Students will understand interlinking concept with the help of broadcast, cloning in game, conditionals statements, etc.
M5 (6 Classes)	Scratch Specialization - I	Broadcast, cloning, if and else functions, number systems	In this module, students will create an Al-based advanced animation effects project. They will learn how they can use Al in day-to-day life with the help of mathematical concepts. This module will help the child develop problem solving skills in a creative way.
M6 (6 Classes)	Scratch Specialization - II	Custom block making, science-based activity, text to speech, advanced games, advanced animation effects	In this module, students will learn about artificial intelligence and types of AI, i.e. machine learning and deep learning. They will understand text and vision training and making a facial recognition application. They will also train models and make various games which are AI-powered.
M7 (6 Classes)	Artificial Intelligence - I	Face recognition app, text-based basic chatbots, basics of machine learning, deep learning, neural networks	Students will make a customized Alexa-like personal assistant which can control the devices at home. They will also be introduced to Natural Language Processing (NLP).



### **Coding Prodigy**

Classes

**Activities** 

92

Skill level

<u>Price</u>

Advanced

₹**700** per class

Age group

Grade 6-8

Quizzes

184+

15+



### Key learnings

- Scratch
- Aritificial intelligence
- Machine Learning for Kids
- Thunkable



#### **Benefits**

- Conceptual clarity
- Analytical skills
- Creative boost
- Course project



- Coding Prodigy Certificate
- Lifetime community access
- Scholarship opportunities
- Goodies

Modules	Themes	Topics Covered	Outcome
All Coding Champion modules +			
M8 (6 Classes)	Advanced Artificial Intelligence	Speech recognition, neural networks, Supervised learning, Face detection, overfitting	In this module, students will understand interlinking concept with the help of broadcast, cloning, conditionals statements in games.
M9 (6 Classes)	Thunkable - Basic	UI, buttons, webviewer, canvas, labels, basic components of the palette, layout, sensors, PDF reader, translator	Students will develop a deeper understanding of app development in this module. They will be introduced to the basic components in the palette. They will be making simple apps with color switching, mood counter, and touch-me-not functionalities. They will also learn how to upload PDF documents in apps.
M10 (6 Classes)	Thunkable - Intermediate I	List viewer, local storage, location sensor, maps, speech recognition, drawer, navigator	Students will learn Android and iOS game development. They will learn how to use local storage, location sensors and maps. They will create their own app which can make calls, send texts, emails, and much more.
M11 (6 Classes)	Thunkable - Intermediate II	Audio recording, video recording, local storage, barcode scanner, web API, MediaDb	Students will learn how to record audio and video, and how to use the barcode scanner component. They will be introduced to advanced concepts in Thunkable including web API and MediaDb. They will create an app that can store their photos.



## **Coding Prodigy**

Modules	Themes	Topics Covered	Outcome
M12 (6 Classes)	Thunkable Advanced	Application programming interface (API), local databases, animations	Students will learn how to make use of APIs and create quiz applications. They will also learn about local databases in smartphones and use them in various applications.
M13 (6 Classes)	Thunkable Advanced	Sign-in features, media databases, Firebase setup	Students will learn about AdMob, sign-in features and create a login application using Thunkable. They will also learn how to setup Firebase and use it in Thunkable.
M14 (6 Classes)	Web Development	Introduction to HTML elements, debugging, styling	In this module, students will learn about the Internet and the World Wide Web. They will also learn programming languages including HTML and Cascading Style Sheets (CSS) which are used for building websites. They will create web pages using CSS and will link multiple web pages to create a detailed website of their own.
M15 (6 Classes)	Website Development Specialization	Wordpress introduction, themes, plug-ins, customizer, blog writing, creating pages on Wordpress, launching own website	Students will learn about Wordpress, a professional tool for making websites, and other important aspects of websites such as blog writing and posts. They will also learn how to use Wordpress plugins on their website. Finally, they will launch a website which will be live on the internet for all to see.



### **Coding Grandmaster**

Skill level	<u>Price</u>
Advanced	<b>₹650</b>
Age group	per class
Grade 6-8	
	Advanced  Age group



Key learnings

Thunkable

Wordpress

• HTML

• CSS

Repl







- Conceptual clarity
- Analytical skills
- Confidence boost
- Capstone project
- Student project



- Coding Grandmaster Certificate
- Lifetime community access
- Scholarship opportunities
- Goodies

Modules	Themes	Topics Covered	Outcome
		All Coding Prodigy modules +	
M16 (6 Classes)	Bootstrap	Get started with Bootstrap, containers, grid basics, typography, colors, badges, progress bars, spinners, pagination, carousel, scrollspy, Bootstrap 4 grids, grid system, stacked/horizontal grids, grid XSmall, Grid Small, Grid Medium, Grid Large, Grid XLarge	In this module, students will learn about the Bootstrap framework. This framework will help the students make their websites responsive to different screen sizes.
M17 (6 Classes)	JavaScript Introduction - I	Syntax guide and commenting, variables, value and type, operators, objects and properties, array properties and method, call stack, methods, loops and switches, functions, parameters and scope of functions	In this module, students will be introduced to JavaScript programming. Javascript will help them create animations for their websites and make their websites more interactive.
M18 (6 Classes)	JavaScript Introduction - II	Data types, keywords, conditional statements, while loops, map method, eval method, class, class inheritance, array sorting and iteration, type conversions, regular expression, error handling, arrow function, JSON, call back, async/await, promises, forms, APIs, prototypes, cookies.	In this module, students will take a deep dive into JavaScript programming and learn about the many features and functionalities of Javascript they can use to make websites engaging and interactive.
M19 (6 Classes)	Capstone Project on Website Development	Hands-on HTML, CSS, and JavaScript	Students will develop a complex website using all their learnings on HTML, CSS and JavaScript.



### **Coding Grandmaster**

Modules	Themes	Topics Covered	Outcome
M20 (6 Classes)	Introduction to Python	Animations and basics of Python using block-based and text programming	In this module, students will learn how block-based languages they have learnt till now are created and will be introduced to the Python programming language. They will make different animations and learn basic concepts of Python.
M21 (6 Classes)	Advanced Python	Advanced Python, menu-driven programming, functional programming	Students will be introduced to the advanced tools which are used in Python programming. They will learn concepts such as loops, conditional statements, and will create menu-driven programs.
M22 (6 Classes)	Specialization in Python	Complex games using functions, modules, and libraries	In this module, students will be specialize in Python programming. They will make complex games using functions and different modules and libraries in Python.
M23 (6 Classes)	Data Structures - I	Asymptotic notation, time and space complexities, calculation of time complexity	In this module, students will develop a deeper understanding of linear data structures.
M24 (6 Classes)	Welcome to Data Science	Introduction to data science, NumPy, Pandas, Dataframe, Matplotlib, Seaborn	Students will learn about basic Python libraries for data science including NumPy, Pandas, Matplotlib and Seaborn, and will be able to plot graphs using these libraries.
M25 (6 Classes)	Data Analysis - I	Introduction to excel, editing worksheet, formatting cells, formatting worksheets, working with formulas, advanced operations 1 and 2	In this module, students will learn the basics of data analysis and discover basic concepts including tabs and ribbons, formatting numbers, and managing worksheets.

