RoboticSchools

INTERMEDIATE LEVEL CURRICULUM

65+ CLASSES | 30+ PROJECTS | 8+ PLATFORMS | 20+ QUIZZES

#21ST CENTURY SKILLS

CODE

BUILD

RUN

www.roboticschools.com

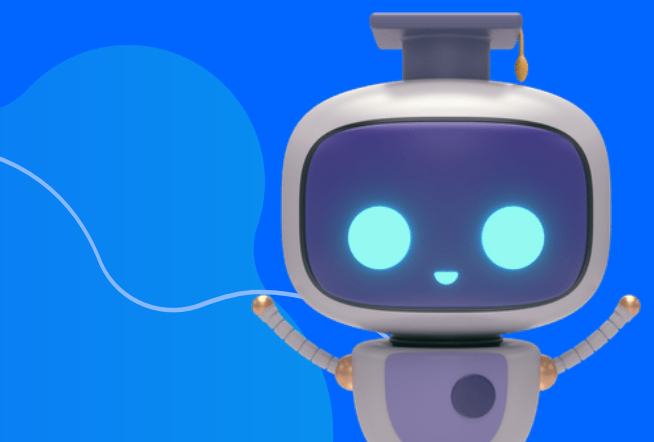
About RoboticSchools

Roboticschools is an e-learning platform intended for children. The company's platform provides live 1:1 and 1:2 learning sessions with qualified engineers and educators worldwide, enabling children to learn about engineering and coding from the comfort of their homes. And provides 21st-century skills to schools.

Our Vision

Best Provider of online & offline learning platforms intended to deliver high-quality, engaging, and accessible technology education (i.e., Robotics, Coding, Artificial Intelligence, Machine learning, Automation). The company's platform makes use of original content, watch-and-learn videos, rich animations, and interactive simulations that make learning contextual and visual, not just theoretical, enabling each learner to receive a personalized experience.

Our aim is to provide technology education (i.e., Robotics, Coding) accessible, affordable to all.



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Benefits for Kids

Improves Academics

Productive Ideas

Creativity Skills

Problem Solving Skills

Logical Thinking

Learning by Building

#21st Century Skills

Let's Start the Course in RoboticSchools

Select a Course

Learn with us

Code and Build for Future

www.roboticschools.com

INTERMEDIATE LEVEL

RoboticSchools

What Kids learn from this Level ?

MIT Scratch Blocks | MIT App Technology | Circuit Simulations | Sensors Integration | Math & Co-Ordinates | Python Turtle | HTML Basics | Machine Learning

65 Classes

14 Classes

Balloon Pop Up

- Video sensing Extension
- OpenCV blocks
- Adding popup Effects

Math Quiz

- Create Multiple Variables
- Merging Two strings
- Timer Logic

Soccer Champion

- Keyboad control Player
- Automate the opponent
- Adding Timer and score

Flappy Bird Game

- Appling Gravity to Bird
- Cloning Obstacles
- Touching Events

Spirograph

- Pen Extension
- Color switching blocks
- User Input

Project 3.0

- Adding Real time sprites
- Condition to spawning
- Adding keyboard shortcuts

14 Classes

Number Game

- Install MIT Ai2 App
- Random function
- Logical operators

Drawing App

- Color Switching Buttons
- Drawing and Animation
- Using Database option

Age Calculator

- Receiving Input
- Separators
- Screen Orientation

Calculator

- Multi Button functionality
- percentage operator
- Nested if Conditions

Rainbow Piano

- Intro to Forever block
- Sensing blocks
- Automate the sprites

Tic Tac Toe

- Define global variable
- Procedures
- List button events

13 Classes

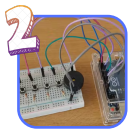
Vehicle Building

- Assemble the Car
- Connecting Motors
- Use of MotorShield

RC Car Control

- Basics of Arduino code
- ArduinoEditor features
- RC Car Libraries

Magical Piano



- Learn frequency, waves
- Sensing of pushbuttons
- Control of buzzer

Amazing Sensors

- What is a Sensor?
- Get Input from sensors
- Processing data in Arduino

Light Following Car

- Calibrating Sensors
- Use of Light sensors
- Conditions to track light

Mobile Control Car

- Build and Install App
- Connecting Bluetooth
- Arduino and Android code

12 Classes

Olympic Rings

- Basics of Python
- Importing Libraries
- Defining object

Draw a LOGO

- Math Geometry
- Degree of half circle
- Moving blocks

National Flag

- Defining variable
- Data types
- Learn to use loops

HTML Basic Webpage

- Basics of header, title, tag
- Setting up Title
- Text properties

Draw Kunfu Panda

- Adding sound tones
- Color switching effect
- Record all tones and

Portfolio Webpage

- Add paragraphs
- Embedd images
- Setting up menu

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INTERMEDIATE LEVEL

65 Classes

What Kids learn from this Level ?

MIT Scratch Blocks | MIT App Technology | Circuit Simulations | Sensors Integration | Math & Co-Ordinates | Python Turtle | HTML Basics | Machine Learning

12 Classes

Make me Happy

- Switch Costume
- Use Input block
- Recognise Text

Face Lock

- Train a Model
- Upload Model into scratch
- Face Lock Blocks

Friendly Chatbot

- Creating Labels
- Export model
- confidance Level

Rock, Paper, Scissors

- Take Hand Gesture Pics
- Project Template
- Custom Image Blocks

Face Finder

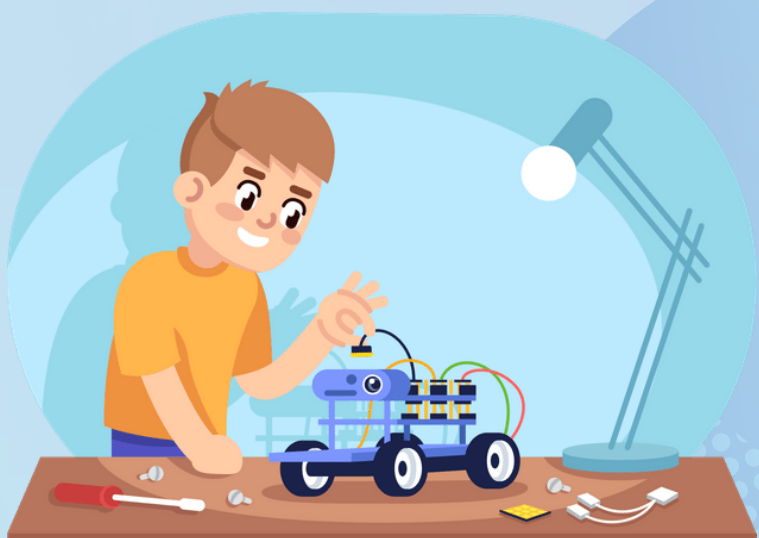
- Video sensing Extension
- Face detection
- Facial Co-ordinates

Hand Gestures

- x, y co-ordinates of fingers
- Define function blocks
- Key press Events

21st Century Skills

CODE BUILD RUN



14 Classes

Detailed MIT Scratch Curriculum

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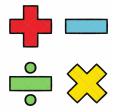
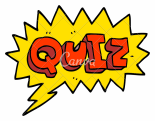
Balloon Pop-Up

- Importing Video Sensing Extension
- OpenCV block-based programming
- Touching virtual sprites
- Advantage of the video transparency feature
- Creating own sprites for obstacles
- Special Sprite effects for popup the balloon
- Creating first OpenCV project and share

Math Quiz



- Creating multiple variables
- Randomizing mathematical questions
- Adding score and sound effects
- Creating Timer using mathematical operators
- Merging more than two strings in one block
- Creating multiple user Interface options to User
- kid will learn - How to take Input from the Player?



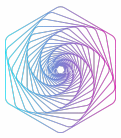
Soccer Champion

- Design of soccer ground in canvas
- Make the player move using arrows on the keyboard
- "Point in direction" for soccer ball
- Automate the opponent to track and follow the soccerball
- Logic to make the opponent move with the cursor
- Inspect football direction change

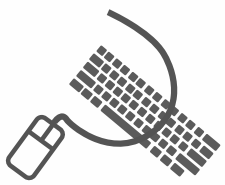
Flappy Bird Game

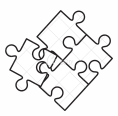
- Including physics Gravity concept in Game
- Creating own flappy bird and obstacles
- Clone the obstacles in random order
- Logic to increase/decrease the obstacle speed
- Condition to end the clone from the screen
- Switching sprite costumes of end tags in order
- Background Effects

Spirograph



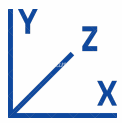
- Importing pen Extension
- How to take input from the user?
- Color switching using user input
- Sound Effects
- Pen turning blocks to create spiral
- Mod division and assignment operator
- Broadcast messaging





PROJECT 3.0

- Uploading real-time sprite characters
- Adding spinning Effects to opponents using mathematical degrees
- Condition for spawning in particular locations using co-ordinate system
- Adding keyboard shortcuts
- Simple logic to escape from Obstacles
- Player and opponent animations



14 Classes

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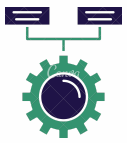
Detailed APP Building Curriculum

Guess the Number

- Learn to use MIT Ai2 Companion App
- Bundle APK for Android App
- Layout vertical arrangements
- Random function
- Timer event to change numbers
- Logical comparison operators



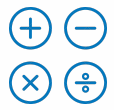
Drawing App

- Color Switching Buttons
- Adding Canvas from Drawing and Animation section
- Special button for changing the pen's thickness
- Knowledge about computer pixels
- Using Database option to save the drawing

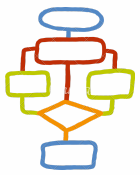
Age calculator

- Receive Input from the user
- Separators for Text
- UI to display start and present date selections
- Layout sections
- Switching from one screen to another
- Screen Orientation permissions
- use of math subtraction operator

Calculator

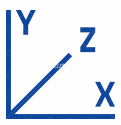


- Multi Button functionality
- Button Color and orientation effects
- Use of all math operators
- Learn to use the percentage operator
- Design UI of apple IOS calculator App
- Switching colors of all Buttons Option
- Basics of Nested if Conditions

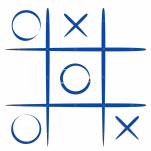


Rainbow Piano

- Adding sound tones for each button
- Include multiple buttons in one horizontal arrangement
- Color switcher effect when clicking the buttons
- Displaying all sound tones in the Text label
- Record all tones and save them in one file



Calculator



- Defining a Global variable
- Creating multiple Procedures
- Table arrangement Layouts
- Procedures conditionals
- Logical and assignment operators
- Calling functions
- Creating a List

13 Classes

Detailed Robotics Curriculum

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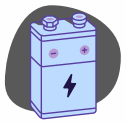
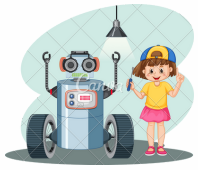
vehicle Building

- Assemble the car on their own with the help of the instructor
- Handling of screwdriver, bolts, and nuts
- Knowing - What is the use of Motorshield and its uses in Arduino car?
- Mounting Motorshield on Arduino
- Motors Connections
- Powering the Arduino Car

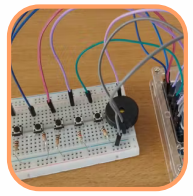




RC Car Control

- Basics of Text-based Arduino Code
- Experience cloud-based Arduino code Editor
- Adding Adafruit RC Car Libraries
- Learn uploading code into Arduino
- Move the car using Arduino commands
- Know- how to charge rechargeable batteries?
- Finding bugs in the code

Magical Piano



- Creating a replica of the Piano using pushbuttons
- Sensing pushbutton click using code
- Learn- why do we need to use resistors in this project?
- Learn physics concepts (frequency, soundwaves...)
- Using Tone function in the code
- Sending output to the buzzer for the sound
- Simulation, Physical connection and testing

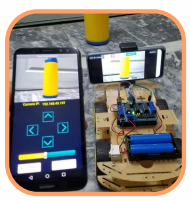
Amazing Sensors

- What is a Sensor and how does it work?
- Receiving data from sensors
- Connecting multiple sensors to Arduino
- Introduction to LDR (Light) and sound sensors
- Calibrating sensors
- Simulation of the sensors in Tinkercad
- Mini Project - Automatic LED switcher based on Day/Night

Light Following Car

- Assemble and connect light sensors on Car
- Learn to calibrate both sensors to detect Dark/Bright
- Arduino code logic to Track the light
- Arduino car library functions
- Manual adjustments on sensors using a screwdriver
- Testing the car using torchlight
- If and else conditions to stop the car

Mobile Control Car



- Adding Buttons, Icons, and Background Images on Mobile App User Interface
- Mobile App button events
- Learn - how Arduino receives data from mobile?
- Add new functions in Arduino code to process the data
- HC05 Bluetooth Connection with MotorShied
- code to turn the car in different directions

12 Classes

Detailed Python Turtle Curriculum

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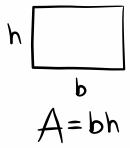
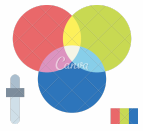
Draw Olympic Rings

- Basics of Python and functions
- Importing Python turtle
- Defining a turtle object
- Learn what is a circle, radius, and draw it?
- Change of turtle-pen shape using block
- Switching pen colors
- Maths Co-ordinate System

National Flag

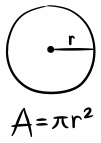
- Defining variable in python
- Types of variables
- Learn to use loops concept in python
- Area and perimeter of the rectangle
- using RGB color code in function
- Changing pen shapes using functions





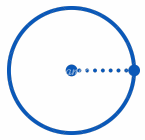
Draw Kunfu Panda

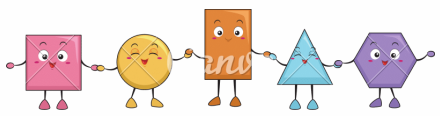
- Area of the circle
- Changing angles using variables
- Filling shapes with different colors
- Clockwise and anti-clockwise directions
- Turtle positional function
- Co-ordinative system moves



Draw a LOGO

- Radius of Half circle
- Drawing rectangles, circles, and Half Circles
- Moving blocks
- Turtle pen Properties
- Shape Filling Functions
- Math Geometry

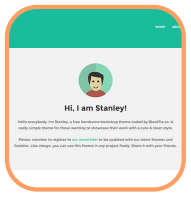




HTML Basic Webpage

- Basics of Header, Title, Body
- Setting up the Title of the Webpage
- HTML Text Properties
- Attribute
- Structure of the webpage
- Series of elements

Portfolio Webpage



- HTML Blocks
- Adding Paragraphs
- Embed Images into a webpage
- Setting up the Menu
- HTML Colors
- HTML Styles, Formating and Comments

12 Classes

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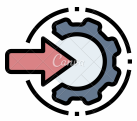
Detailed Machine Learning Curriculum

Make me Happy

- Switching Costume
- Use Input block
- Recognise Text
- Draw the Emotions in the editing section
- Import Trained model
- Check the Input using condition blocks

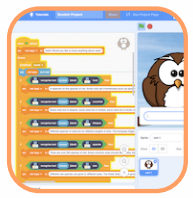


Face Lock

UPLOAD

- Train a Model
- Learn and Test the model
- Upload Model into scratch
- Face Lock Blocks
- Broadcast Events
- Custom backdrop switching

Friendly Chatbot

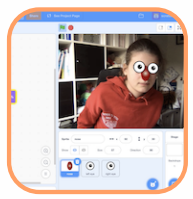


- Creating Multiple Labels
- Export model into scratch
- Check the confidence Level of each label
- Set variable to show the chatbot Text
- Check answer with the Label

Rock, Paper, Scissors

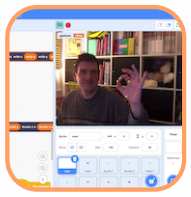
- Capture Hand Gesture Pics
- Train New machine learning model
- Importing Project Template
- Custom Image Blocks
- Assigning Labels to Variables
- Random switching Hand signs with computer player

Face Filters

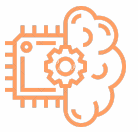


- Importing Video sensing Extension
- Face detection blocks
- Facial Co-ordinates
- Creating custom mask in editing
- Setting video transparency
- Eyes detection

Hand Gestures



- x, y coordinates of fingers
- Define function blocks
- Keypress Events
- Train the multiple labels with data
- Finger detection points
- Gesture Recognition



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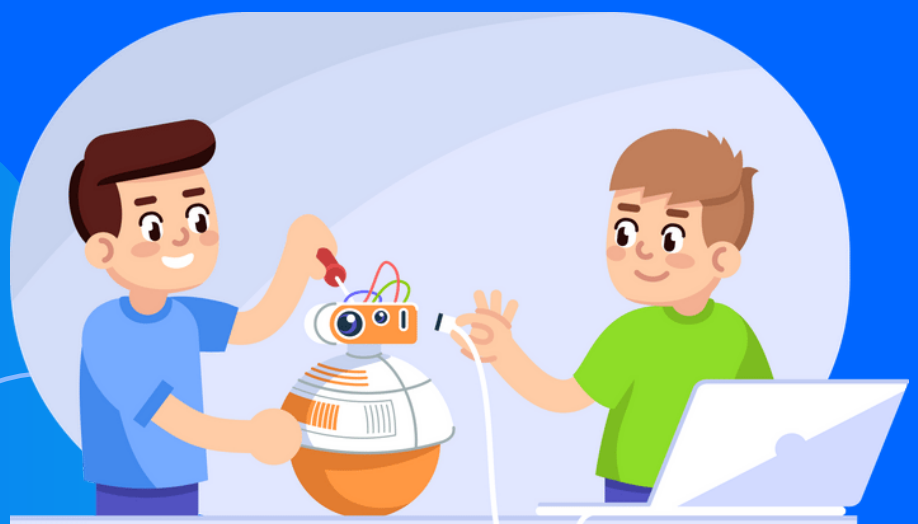
To Experience the Fun of Building Robots

BOOK A FREE CLASS



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