St. Kabeer Academy-Dehradun (CBSE)

ATL Syllabus for Class 7th

1. ABOUT ROBOTICS LAB

- Introduction about ATL.
- About Physical Computing(https://www.youtube.com/watch?v=TAlsEZEcSis)

2. BLOCK PROGRAMMING AND GAME DEVELOPMENT -SCRATCH

- Introduction to Game Designing
  - Adding Multiple Sprite, Making Variable
  - Make Ping Pong Game
  - Assignment – Gliding Project
  - Adding Sound in Animations
  - Make Birthday Animation
  - Introduction to Operators
  - Make your Sixth Project – Monkey Game
  - Upload new sprites to scratch from laptop/PC
  - Introduction of Scratch Clone
  - Project – Dino Game

3. PYTHON PROGRAMMING

- Conditional Statements
  - Introduction to If-Else Statement
  - Introduction to Else-if Statement
  - Introduction to multiple conditions
  - Mini Project-to make the Exam Paper and Result Declaration, Calculator
- Introduction to Loops-while loop, for loop
- Introduction to Lists
  - Understanding and Making Of list
  - Access list items
  - Insert list items
  - How to deal with Two lists
  - How to arrange items in list

4. ANDROID APP DEVELOPMENT

- Introduction to Button, Text Box and Accelerometer
- Design the user interface and make the code
- Introduction to Image Component and Text to speech
- Introduction to Logic Blocks
- Introduction to Design Layouts and Password Text Box
- Adding Multiple Screens
- Develop app- Talk to Me, Surprise your Mother, Secret Message App

5. INTRODUCTION OF ELECTRONICS

- Bread Boarding Techniques
  - Connecting Different Components on bread board
  - Interfacing of 10 LEDs with the Arduino Uno
  - Interfacing of LDR Sensor
  - Controlling LED using Sensor
  - If-Else Coding Technique
  - Printing Sensor Values on Serial Monitor
- Switches and Buttons
  - Interfacing various Switches with Arduino
  - If-Else Coding Technique
  - Controlling LEDs with Buttons
- Introduction to Motors
  - Diff. types of motors
  - Use of motors
  - Interfacing motors
  - Controlling motor with LDR sensor
  - Using LDR values to control the motor
  - Final Challenge for Certification

6. DIGITAL MULTIMETER MEASURING TOOL

- How to use Digital Multimeter.
- Application of digital Multimeter.

7. DIGITAL VERNIER CALIPER MEASURING TOOL

- How to use Vernier Caliper.
- Application of Vernier Caliper.

8. SPIRIT LEVEL MEASURING TOOL

- How to use Spirit Level.
- Application of Spirit Level.

9. ROBOTICS

- Fidget Spinner.
  - Concept of Angles
  - Angular Momentum and Concept of Gravity
- Basic Electronics.
  - Introduction to Basic Components and Circuitry
  - Introduction to Current, Voltage and Resistors
- Introduction to Breadboard.
  - Building of Basic Non-Programmed Circuits
  - Concept of Unipolar and Bipolar Devices
  - Concept of Series and Parallel Circuits

10. ANNUAL PROJECT BASED ON COVCERED TOPICS