



# St. Kabeer Academy-Dehradun (CBSE)

## ATL Syllabus for Class 6<sup>th</sup>

### 1. ABOUT ROBOTICS LAB

- Introduction about ATL.
- About Computational Thinking

### 2. BLOCK PROGRAMMING AND GAME DEVELOPMENT -SCRATCH

- Introduction to the Scratch Software
  - About Programming and its importance
  - About Scratch
  - Software Setup
  - Getting Familiar With Tools
- Introduction to the Sprite and Costumes
- Introduction to the Backdrop
- Introduction to Scratch Programming Blocks
  - Fish Changing
- Introduction to Position and Direction Blocks
- Make your Second Project – Fish Changing
- Assignment 1 - Arrow Project
- Touching Color
- Introduction to Sensing Blocks
- Introduction to Condition Blocks
- Introduction of Paint Section
- Make your Third Project – Touching Color

### 2. INTRODUCTION OF ELECTRONICS

Electronics Components.

- Led
- Transistor
- Capacitor
- Jumper Wire
- Electronic Switch

Current and Voltage

Battery

Basic Circuit Building

Project based on LED blinking

### **3. MECHANICAL (MODULAR) CONSTRUCTION KIT**

- Introduction To Mechanical Parts In Robotics
- Robotic Sweeper Mechanical Assembling
- Mechanical Speedster Assembling
- Wheeled Robot Rider

### **4. INTRODUCTION TO ARDUINO**

- About Arduino
- Arduino IDE Software Setup
- Arduino On Board
- Program the Board

### **5. TINKERCAD –VIRTUAL CIRCUIT ASSEMBLING**

- About TenkerCad
- Software login and setup
- Getting Familiar With Tools
- GUI Based LED Pattern &Running Light
- GUI Based RGB LED Programming

### **6. ROBOTICS & 3D DESIGNING**

- **Introduction of Robotics**
  - **Importance of Robotics**
  - **Applications**
  - **Software Details**
- **Construction of Wheels**
  - **Construction**
  - **Different Type of Wheels**
  - **Science of different size of Wheels**
- **Day 3: First Simple Machine – Wheel and Axle**
  - **Construction of Skate Board**
  - **Introduction to First Simple Machine**
  - **Importance of Wheel and Axle**

### **7. PROJECTS**

- LED And RGB LED Based-Wrist Band, Head Band
- Paper Circuit Based- Cards, Smiley, Trees
- Mechanics Based-Helicopter, Racing Car, Tower
- Scratch Based- Small Games