



ARDUINO SPARK

Guidelines for Online Learning

Section-I Learner's General Point of Consideration

- ◆ The learner must get familiar with the Session's Interface and understand:
 - ▶ How Session is going on?
 - ▶ How to perform activities through the instructions provided
 - ▶ How to perform any Quizzes & Activities
- ◆ This is an instruction guideline so learners are required to perform the instructions simultaneously
- ◆ Resource folder contains the component lists

Section-II System Specification

A) Operating System

- ▶ Windows: Windows 7, Windows 8, Windows 8.1, Windows 10 or newer
- ▶ Mac: OS X - Lion or better
- ▶ Intel processors (i3, i5), AMD processors (A8, A10)
- ▶ 4 GB of RAM
- ▶ Integrated graphics card

B) Supported Browser

- ▶ Google Chrome
- ▶ Firefox
- ▶ Safari
- ▶ Microsoft Edge

Section-III Internet Connectivity

- ◆ The first and foremost requirement is a good network connectivity for the smooth running of the classes
- ◆ Lack of internet connectivity may cause:
 - ▶ Audio/Visual Disturbances
 - ▶ Some Quizzes may not work properly
 - ▶ Captions or Images may not be displayed
 - ▶ Activity's Instruction may not be clear
 - ▶ Software glitches may also occur

Section-IV Digital Equipment

- ◆ Laptop or Desktop
- ◆ Headphones (in-case of Requirements)
- ◆ USB cable to connect with Arduino

Section- V How to Perform “Arduino Spark Series Sessions”

- ◆ Once the session starts reloading and audio/video getting paused is due to bad internet connectivity, then refresh the page
- ◆ Our Arduino Maker series is designed in such a way that each session will give you the instructions to design a circuit and check how it is working
- ◆ Activity’s Instructions and Knowledge Check Quiz must not be skipped
- ◆ Performing Activities enables Learners to understand the logics and concepts applied in electronics.
- ◆ Number of Interactions performed under Knowledge Check Round reflects Day-wise Performance of Learner through Results
- ◆ For performing any activities, the toggling of a window between instructions and software must be followed as mentioned on the Activity slides
- ◆ Time Requirements may vary Day-wise or Activity wise depending upon the Topic Covered. However, the Estimated Time for the Session is 60 Mins.
- ◆ Each Day learning links are provided on the session itself for performing any Assignment.

Section- VI “Software Guidelines”

- ◆ Tinkercad Circuits allows anyone to virtually create and program Arduino projects without the need for physical hardware.
- ◆ This allows students to access their designs out of school and also to share their designs with the global Tinkercad community.
- ◆ TinkerCAD is a free online service for creating basic developing digital pro- to types of electronic components.
- ◆ This allows students to design circuits, program micro-controllers and incorporate the electronics directly.
- ◆ In order to perform any Arduino activity, you need to Login to the software and create your own account. To get create or login to your account you must require a valid E-mail ID.
- ◆ On the right side of your screen, you’ll see a group of drag-and-drop electronic components.
- ◆ On top, you can search and later through an impressive number of available components: There’s everything from LEDs to integrated circuits (ICs), and even a few instrument tools.
- ◆ The top toolbar starting on the left gives you the general operations to rotate, delete, and even make notes on your different components.
- ◆ Once you have a programmable component in your design, you can open the “Code” viewer by clicking on the button at the top right of the toolbar.
- ◆ Currently, the only two devices available are the Arduino Uno R3 and the ATTiny. (The ATTiny is a more limited and miniaturized Arduino.)
- ◆ The programming area is a simple integrated development environment (IDE) that makes programming the Arduino very straightforward.
- ◆ Once activities performed, saving of file is mandatory.

- ◆ Effort has been done to cater specific tools day-wise and construct the circuits based on dene tool and program libraries for building the Strong Concepts in electronic.
- ◆ For better clarity, in each session, all the steps from scratch have been incorporated.

Section- V “Hardware Guidelines”

- ◆ The activities are designed in real time using the components specified in the activity.
- ◆ Designing the circuits along with the steps provided will give you how it works.
- ◆ Ensure proper placements of the components.
- ◆ Ensure the components are connected properly and wired accordingly.
- ◆ Proper working of the Arduino needs to ensured.
- ◆ Proper port and board selection.
- ◆ Chassis bot is used and the manual for constructing the same as been provided in the resource folder. Ensure the wiring is done properly and the battery to be properly connected.
- ◆ Under the instructor supervision only wire the light bulb and connect it to the main power source

Note: Estimated Time Duration for Completion of Course is 3 Months