

Young Innovators Summer Camp

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SSIP – Parul University

Date: 17th – 29th April, 2023

Report

- **About Young Innovators Summer Camp**

The workshop was organised as an initiative under the SSIP 2.0. In this workshop the school students were made aware about the SSIP and what type of benefit as a school student they can avail from this opportunity. In this Summer Camp were train to develop their skills on Design tools like 3D printing, laser cutting, vinyl cutter, wooden modelling, IoT, Electronics & Automation. In the Camp students will be able to convert their creative and innovative ideas into reality with the help of Makerspace prototyping technology.

What students get?

- Get expertise and hands-on experience on all the digital fabrication machines.
- Added relevant skills to student's curriculum
- An extended support on your future projects and ideas from Lab Experts
- Students get Live Project Experience

- **Event Details**

Duration:

2 weeks 12 days

Who can Apply:

Students from 06th to 9th Standard

Workshop Timings: 04:30 PM to 06:30 PM

Telescope Session Timing: 06:00 PM to 08:00 PM

Course Outline

- **Design Thinking**

Design thinking is a process to solve real life problems. It is a process that use creative thinking, process, empathy, teamwork, concept creation, prototyping and testing. Design thinking is a highly collaborative, hands-on activity that allows students to learn by doing.

- **3D Printing Technology**

The session has been organised in such manner that help students to experience the wider curriculum and introduce the students to 3D printing technology and 3D modelling software.

Students learn how 3D printers work and explore various a 3D Shape can be developed

- **Laser cutting**

This workshop covered the basics on how to use the laser cutter including design process, operation, and safety. Student has operated the machine to design simple prototype. Then they get into slightly more complex designs. And finally, by the end, they learn how to create projects with multiple interlocking parts, using different types of joints. They also learn the different ways a laser can affect the material cutting, like scoring and engraving. We also cover non-design things, like material selection, preventing burn marks, finishing your projects, and more.

- **Wooden Modelling**

This workshop has included the basic concepts in carpentry and how to use basic carpentry tools. Students had learnt the enjoyment of woodworking from our experts. Skills learned here can then be used to build further projects at homes as well as for future projects.

- **Vinyl Cutter**

Students have been in an educative session regarding vinyl cutter, which is an entry level machine for making signs, it is majorly used to make signs, banners and advertisements. Students learn regarding computer designed vector files with patterns and letters which are directly cut on the roll of vinyl which is mounted and fed into the vinyl cutter through USB or serial cable.

- **Electronics & Automation**

This workshop has also allowed students to acquire skills related to embedded systems. The hands-on training using microcontrollers like Arduino and other equipment enables the students to apply and enhance their creativity. During the workshop student has learned the networking of physical devices, vehicles, buildings, and other items, embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data. By learning the inter-connection and data exchange, Students can create their own IoT Networks with connected devices and can access it from anywhere in the world. This course has provided the participants knowledge and experience on the fast-growing field of IoT. During the workshop, the students also learn to control their electronics projects through programming. This ensures programming does not look like a tough nut to crack. It also paves the way for complicated projects like home automation systems and robotic cars.

- **Live Project**

The students embark on an exhilarating journey into the world of robotics. Today students explore the fundamental robotics concept, key principles of robotics and engage in a live project. Each student received a robotic kit, which includes all necessary components, such as a servo motor, potentiometer, breadboard, Arduino nano, and other components which enable them to actively participate in hands-on learning and gain practical experience in building robots.

- **Telescope Session**

It will be a 2-hour evening session where students learn the operation of Telescope and will have night sky view experience.

- **Key Takeaway**

- Certificate of course completion
- The participants get 3D printed models that they design.
- The students get the kit with them
- Assignment based training
- Implementation: Theory & Practical

Schedule

Sr. No.	Particular	Days	Date
1	Design Thinking	1	17/04/ 2023
2	3D Printing Technology	2	18/04/23 to 19/04/23
3	Laser Cutting and Engraving	1	20/04/23
4	Carpentry Work	2	21/04/23 to 22/04/23
5	Vinyl Cutter	1	24/04/23
6	Electronic & Automation	2	25/04/23 to 26/04/23
8	Live Project	2	27/04/23 to 28/04/23
9	Telescope Session & Valedictory	1	29/04/23

Day 1: Design Thinking



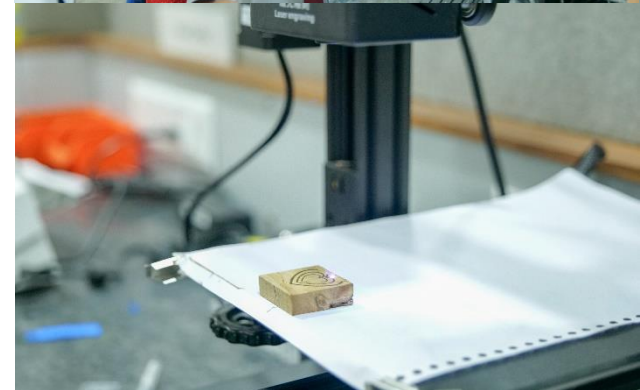
Day 2: 3D Printing



Day 3: 3D Printing



Day 4: Laser Technology



Day 5 & 6: Carpentry



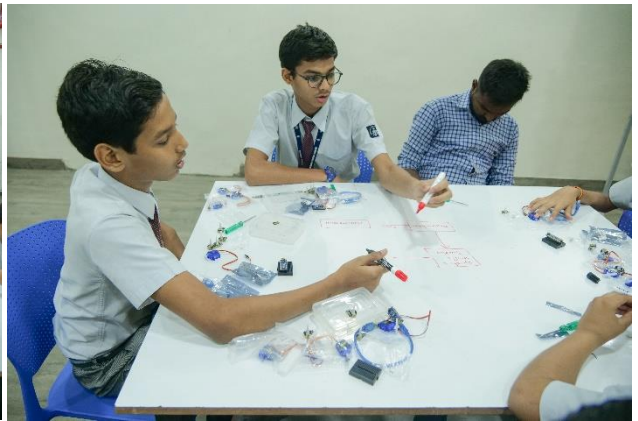
Day 7: Vinyl Cutter



Day 8 & 9: Electronic & Automation



Day 10 & 11: Live Project



Day 12: Telescope session and Velidictory



