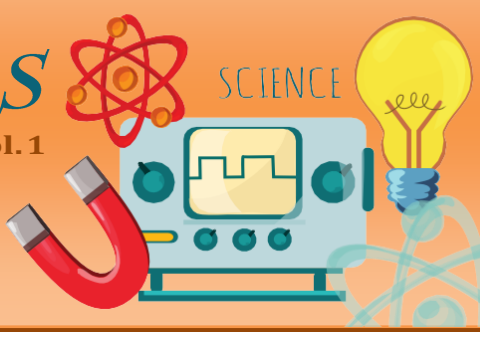
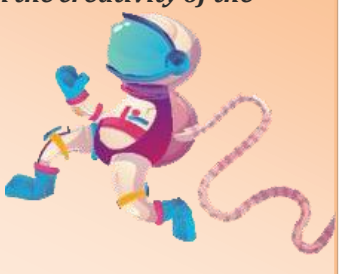
TINKER TIMES

Issue-October2018-Vol.1



SRI SRI ACADAMY, Kolkata in its policy to encourage creativity & innovation among its student.

The Atal Tinkering Lab, an initiative by the Govt. of India scheme Niti Aayog, has set up a lab at SRI SRI ACADEMY to promote STEM education. STEM or Science Technology Engineering and Mathematics involve the implementation of all these branches where the motto says "to unleash the creativity of the young minds". Here at SRI SRI ACADEMY, the ATAL Lab has been equipped with all the electronics and circuitry components with which the students of middle school (classes 6, 7, 8) have started tinkering. The lab got inaugurated by Dr. Deviprasad Duari, Director of Birla Planetarium Kolkata, on the 26th of March, 2018. SRI SRI ACADEMY in collaboration with RABVIK EDUCATION has setup a curriculum for the STEM education. , the students have been introduced to the basic circuitry connections, the idea of current flow, energy harvesting and then the circuit building components were introduced by stating alongside their use, configuration and calculations. They also did some hands on activities like small animations and games on Scratch so as to have a concept of computer programming that will be an essential as well as integral part of the curriculum. Apart from this, students were also shown some science concept based experiments like "Conductivity of water – in distilled and acidulated", "conductivity of insulators, graphite" and the science behind it.



#Students working on the basic circuitry making- series/parallel circuits at SRI SRI ACADEMY, Kolkata.

STUDENT SPEAK

"I as a participant of ATL summer fest am trying my best with my group partner to show our thinking skills. We have been provided every component from the lab and we are designing it in our school. It's a learning competition with friends too!" – Hansrudh Gupta 7E.

"The ATL lab is very exciting for us and we are enjoying it! The lab is equipped with everything that we need. Here we are allowed to test our models and express our abilities." Manvik Shah and Tanish Agrawal, class 6

Automatic Sketching Machine Project

Drawing perfect sketch by hand can now be done by machines too. Here we propose an automated image sketching machine that sketches drawings similar to a real human but with a lot more accuracy. The proposed system makes use of an Arduino based circuitry that is interfaced with motors and belt based setup that is used to provide the mechanism needed by a pen to draw the sketch. The Arduino based circuit is interfaced with 2 stepper motors and one servo motor in order to transmit the movement commands as per the image fed to it. It then controls the sketching process through a well- controlled mechanism in order to achieve this task. The pen only touches the paper where a dot is to be placed is raised above the paper by the motor where not needed. This motion coupled with the x and y axis movement of the motors allows for a 2D sketching mechanism on the paper using this mechanism.

Do It Yourself

The Home-made conductivity Tester:

Current electricity needs a completed circuit for electrons to flow continuously. Conductivity tester uses the same principle to visually demonstrate the relative conductivity of different material. When a conductor is placed between the ends of testing wires, the circuit is completed and the light (LED) goes on. When an insulator is placed between the ends, the circuit is still broken, because electrons cannot flow through insulators, and the light stays off. Pencil 'lead' (graphite) conducts electric current but provides lots of resistance. The longer the path that the electric current must take through a conductor, the greater the resistance. The effect of changing the length of the path the current takes through graphite can be seen by watching the brightness of the bulb.

MATERIALS:

1) A wire cutters. 2) A 3V Coin battery. 3) A (Light Emitting Diode). LED. 4) Few insulated wires for making connections. 5) A pair of pins (for making test leads). 6) A variety of Testing materials.

PREPARATION:

1) Cut enough lengths of insulated wire. 2) Strip both ends of every wire. Create the connections as shown in the figure. Wow it is done. Now you can touch the test leads on anything and test its conductivity.

Happenings @ School

On 14th April, 2018 the ATL Community Daywas celebrated here at Sri Sri Academy, where around 20 students from the neighboring school St. Joseph and Mary participated along with their science teacher. Teachers of Sri Sri Academy, Mr. Ahmed Raza, Mr. Mushtaque Gani and the ATL in Charge Mr. Abhishek Biswas from Rabvik Education presented a demo about the different circuits, explained the working of different sensors that we have in our lab and the students gave demonstration of the projects they prepared. Hands on activities for the visiting school was arranged where they tried small simple animations and made small circuits.

Currently, the students who are accessing the ATL lab are the middle school students. Some of the students who undergo trainings outside they do the assembling of the Lego kits without a proper comprehension of the circuitry components they have been using. Here, in the ATL lab they are taught the functioning of each part and they develop and implement their ideas themselves. It's indeed a true satisfaction to the eyes when you see class 6 children making a remote controlled floor cleaning system, themselves! We wish to assemble the ideas of these young kids and nurture them to unleash something new and innovative. Currently, 1hour SUPW period has been allotted for the ATL activities, though students are too excited to have it for one more day in a week."

– Abhishek Biswas, ATL-in-charge and Mentor from Rabvik Education at SRI SRI ACADEMY

From the Principal Desk