

## Pushpa Gujral Science City, kapurthala

### List of Scientific Programmes, (For 5<sup>th</sup> to 12<sup>th</sup> class students)

- 1. Fun with Robots:** Students will assemble their own robotic car using LEGO kits and power the motors . Using LEGO kits the students can design any model and shape as per their creativity and do their own programming using EV3 brick
- 2. Make a Line follower Robot :** Good for students who have attended above session . Using LEGO kits the students will assemble line follower robot and develop their own software programme using EV3 brick.
- 3. Test Adulteration in Food:** A special workshop on Food adulteration with simple techniques to test adulteration. Around 28 tests on different food items will be conducted without usage of any chemical,
- 4. Peep inside Cells :** Microscopic observation of different prokaryotic and eukaryotic cells like bacteria, live paramecium, animal cells etc, identification of cell organelles, staining and identifying bacteria from cell shape, size measurement of cells and organelles using microscope, use of stereomicroscope
- 5. Make your own Beam Bridge :** Participants will design their own beam bridge using given material and will test its load bearing capacity as applying external vibrations. This model provides a prototype how the building structures bears the earthquakes. The aim of the session is to acquaint with various type of bridge's structure and other parameter involved.
- 6. Science behind miracles:** Hands-on-activity session to demonstrate the science behind miracles for understanding of scientific principles.
- 7. Make your own Tesla Coil:** Student will make their own tesla coil using transistor, resistance copper wire etc. Tesla coil is an electrical resonant transformer circuit used to produce high-voltage.
- 8. Simple Electric motor:** Student will make simple electric motor and will learn about law of electromagnetic induction.
- 9. Fun with Mathematics:** Basic activities to clear concepts of area, volume calculations will be organized. Students will be given mathematical puzzle to develop problem solving skills.
- 10. Origami:** Fun based skill development activity using paper. Students will learn to make Paper bag , Flower, animals etc
- 11. Reaction car:** Will make a small car out of waste bottle which runs on the principle of Newton third law.
- 12. Design your Rocket:** A Special Workshop to promote the enthusiasm of the students towards the field of rocketry. A live prototype for Rocket will be designed by the students under this activity. The workshop will demonstrate the basic principle behind the working of rockets.
- 13. Electronics Circuits Design:** A Workshop specially for the students to clear the concepts of Soldering, circuits designing Measuring Resistance through color coding , Use of multi-meter, LDR, Water Level Indicator, circuit designing etc. will also be covered.
- 14. Fun with Hydraulics:** This workshop will focus on the concepts of hydro power and its applications, Pascal's Law. The students will also learn to develop live working models based on hydraulics.