

WINTER CAMP 2020

Advanced Robotics and STEM - Week 3

Day	Robotics (EV3) 9:00 am to 10:30 am	STEM Activity 10:45 am to 12 pm
Sunday 27/12/2020	Ice-breaker activity (15 minutes) Roundabout double Build a basic robot and code it to go in two circles of different radii. Learn about steering and smart blocks	Saltwater density tower What happens when water mixed with different quantities of salt are poured one after the other? Find out with this cool density experiment.
Monday 28/12/2020	Smart fan Design and build a fan that rotates when one of the sensors is activated. Modify the fan to increase the speed of the rotation of the blades	Electroscope Design a device that can visually detect if there is static electricity stored in an object, either positive or negative.
Tuesday 29/12/2020	Pentagon Build the basic robot with a gyro sensor and program it to make accurate turns to create a geometrical shape of a pentagon	Build a grabber Design and build a device that acts as an extended arm and can grab objects. Can you pick all kinds of objects with this? Maybe a ball?
Wednesday 30/12/2020	Automatic sanitizer dispenser Design and build an automatic sanitizer dispenser using ultrasonic sensor.	Heron's fountain Design and build a hydraulic device that causes a fountain to form due to increased pressure on the inside of the system. Explore factors contributing to this.
Thursday 31/12/2020	Automatic sanitizer dispenser (contd.) Code the automatic sanitizer dispenser so that when the dispenser senses a hand, it dispenses the sanitizer	Trebuchet Design a miniature version of trebuchet to investigate how gravitational potential energy is converted to kinetic energy. Play with it to get better accuracy and precision.

BREAK (10:30 am to 10:45 am)