مدرسة امباسادور
AMBASSADOR SCHOOL
INSPIRE INQUIRE INNOVATE

STEAM Newsletter
May 2022

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STEAM NEWSLETTER
May 2022

WEEK 2 / GRADE 1

HABITATS OF THE WORLD

An introduction to the Code Monkey educational computer coding environment, helped the students to learn computer programming concepts and languages. They were given the challenge to demonstrate their understanding of plant adaptations ,by creating four habitats. Through their models, they discussed and learnt about the various habitats and how the different features helps animals to survive in adverse environments.

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WEEK 3 / GRADE 1
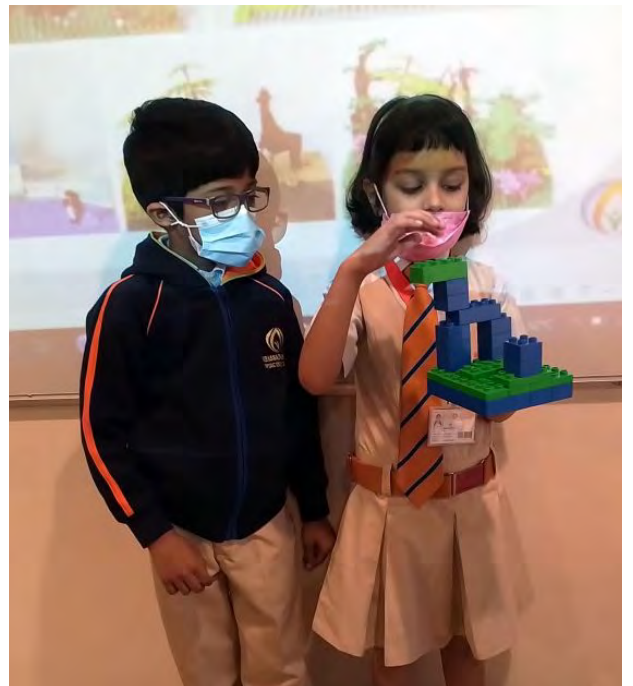
SAM'S NEW DOG

The "Sam's new dog" activity called upon the engineering design skill of the students. They created a model of a mechanical dog using Early simple machine set and manipulatives which applied the concept of pulley mechanism . It was delightful and fun to observe their imagination at work. STEM classes enhance confidence and develop leadership qualities.

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WEEK 4 / GRADE 1

WHO EATS WHOM

Students created various food chains to visually understand how a particular species in the food chain affects the entire ecosystem. They learnt the number of animals making the various links in the food chain ,as per the ascending order.
The students began by watching a very thought provoking video - "Food chain - What Do Animals Eat & How Does It Work?". They had to interconnect animals from different food chains, using Legos to form 'food webs' and learnt that the food chain was shaped like a pyramid. Students applied their subject knowledge in the best and most fun way possible!!

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WEEK 2 / GRADE 2

USES OF PLANTS

The students were made aware of the importance and uses of plants, with few examples such as: Food - (Apple, Orange), Wood furniture - (Chair, table, house, Boat), Cotton - dresses from plants ,using Lego community starter set. Later students researched and identified the various uses of plants using smart devices to complete the given live worksheets. This activity helped students learn the significance of plants in human life. It was a joy to watch the students multitask with ease!

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WEEK 3 / GRADE 2

WHAT'S IN THE SEED ?

The life cycle of a plant from a seed to the plant was the learning objective. They did a hands-on activity, involving real-life experience of planting seeds, understanding the role of different elements (sunlight, water, air, and soil) which are essential to sustain the growth of a plant. They also learnt the needs of a plant as well as various plant parts using the given Lego set.

Our stemmers also created plants from vegetables that are plant parts, analyzed seeds and grew the best plant!. This activity helped students to learn about germination of a seed for which they worked collaboratively.

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HOME SWEET HOME

In this activity, students explored different plant and animal adaptations and applied their knowledge to design and construct a model of habitat. Based on the particular animal, they added habitat details like Desert, Aquatic, Tundra and Rainforest .
Students worked collaboratively and identified the environmental conditions of plants and animals needed to survive in any given habitat. This activity helped students to learn how to plant the right tree in the right place. It was amazing to see how creative the kids could be!

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WEEK 2 / GRADE 3

GLOWING SNAIL

Students were set on a challenge to build, program and test the model of a glowing snail. They connected a smart hub and motor to move and understand how the snail emitted fluorescent light which brightens and beautifies the place in the dark. The team collaborated to complete the tasks successfully.

Model helped enhance the learning related to the characteristics of living and non living things. This helped to amalgamate the concepts of comparing numbers by setting up the speed of the model. It was an excellent activity, designed to develop students teamwork, critical thinking, leadership, programming and creativity skills. It was an interactive session with lots of fun, keeping each learner happy and motivated.

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WEEK 3 / GRADE 3

LET'S GO SHOPPING

"A trip to the electronic store" and learn the in-store real life experience was the theme, wherein the students got an opportunity to purchase and sell the electronic devices, they had constructed. Each team got to choose a student to act as the cashier and rest of them took up the roles of shopper/customer. They used Lego blocks to pay for the items and learnt the use of currency by calculating the amount to be paid to the cashier or to be returned.
Students learnt and explored simple operations in math such as addition, subtraction.

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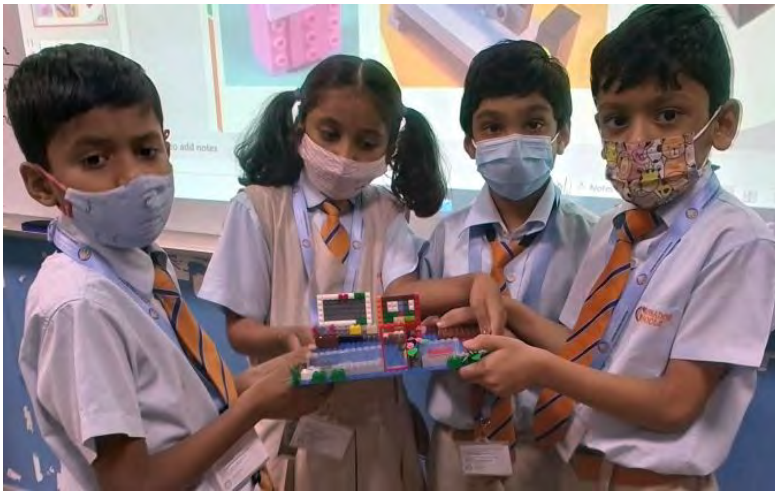
WHAT'S THE WEATHER UP THERE?

Designing a "Weather Wheel" and learning how weather affects the various aspects, was the activity.
Students pretended to be weather watchers and observed the variation in weather for the day. They analyzed the given temperature for the day and completed the given task in ascending order. It was overall a super cool activity!

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WEEK 2 / GRADE 4

DRIVERLESS SCHOOL BUS

It involved the designing and building of a driverless school bus which could be programmed to drive on its own and also apply brakes in case of any hurdles.

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WEEK 3 / GRADE 4

PLANT TREES SAVE AIR

Planting trees with the aid of a robotic machine, was the activity, in which the students built a Lego WeDo robot that could move and turn in different directions and code it to move. The robot was then tested using a small plant.

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WEEK 4 / GRADE 4

PLANT TREES SAVE AIR 2

The students teams competed with their pre build robot in a plant race, where the robot was to move the plant from one location to another and to return it back ,to the initial position.
They were 3 rounds for the students,involving 2 practice and 1 final round, to decide the winner.

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AQUA JOURNEY

Exploring the various uses of water at home or community and learning its journey from source to supply. For this, the students used the Lego community set to plan, design and build the journey of water for UAE right from the source to its purification, supply, transportation and use. They came up with innovative ideas to improve the overall process.

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SAVE STATES

Students were introduced to Pasco wireless temperature sensor and spakvue application. They learnt to use the sensors to measure the temperature changes and also its effect on the various phase changes in ice, warm and normal water.
Students were able to analyze the role of temperature in delaying the phase changes,

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TRAFFIC MULTIPLES

Distinguishing the colours of a traffic light signal and understanding their significance was done using SAM labs and community starter. They used code for light red, yellow and green, with multiples of 2, 3 and 4 and learnt the practical applications of the multiples and the traffic automation system.

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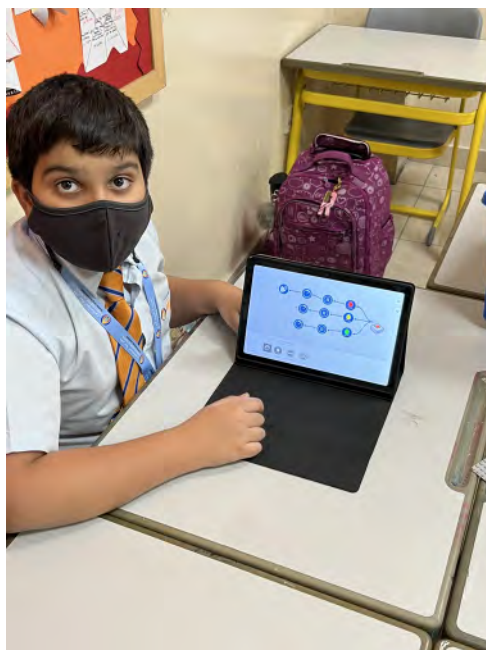
EV3 FRACTIONS 2

Throughout the course of our lives, many situations arise wherein we are faced with using decimals, fractions and percentages. Gaining a complete understanding of what they are and knowing how to convert between these number forms is imperative.
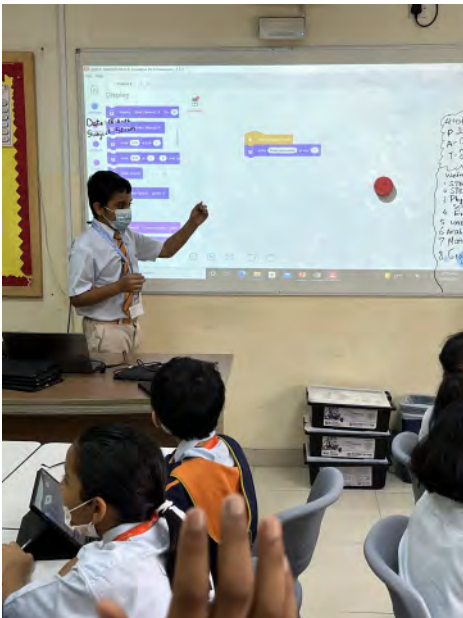
In this activity, students were challenged to code the pre build EV3 robot to move in fractions, decimals and percentage. Teams connected the touch sensor to the robot and programmed them to move a fraction of a distance based on the number of times the sensor touched.

Our young scientists loved how the robot moved using touch sensor and shared their learning with others and helped each other in solving the tasks.

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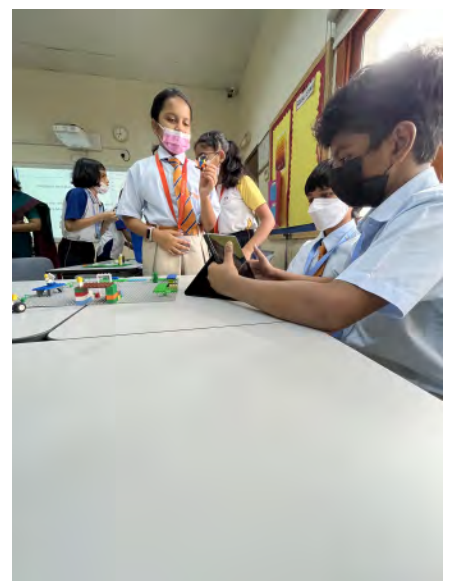**Ambassador School**
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EV3 FRACTION 3

In this activity students used their understanding of fraction, decimal and percentage from EV3 fraction 2 and coded the Lego EV3 robot to display the conversion of fraction into decimals and then percentage. Students not only coded the display block but they also learned the very important concept of defining and using the variable in EV3 which helped them in storing and retrieving data to display on the screen.

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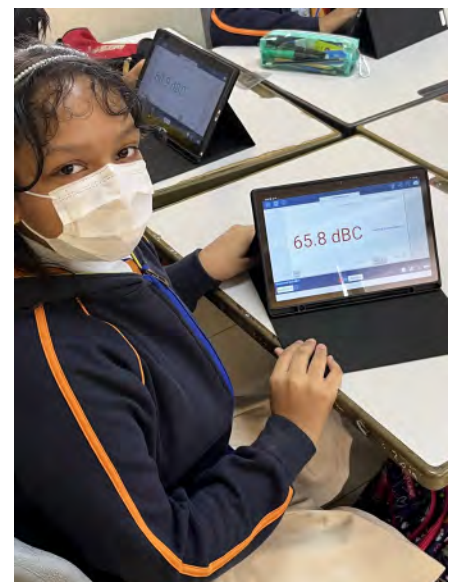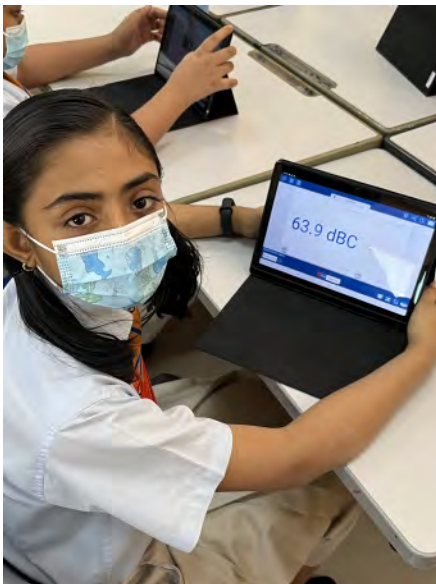WEEK 4 / GRADE 6

ILLNESS_STOP MOTION ANIMATION

A communicable disease is one that is spread from one person to another through a variety of ways that include: contact with blood and bodily fluids; breathing in an airborne virus; or by being bitten by an insect. Students as researchers, movie makers, directors, camera men, script writers picked a communicable disease and researched about it to create an animated movie. There was fun and learning in the movie making process. Students shared their finished products online that was later projected in class. and were overjoyed to see each others creative ideas.

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WEEK 2 / GRADE 7

SOUND METER

A sound level meter is used for acoustic measurements. It is commonly a hand-held instrument with a microphone.
Students as sound engineers, created a sound meter using Pasco Spakvue application and an in built microphone. Students tested and recorded the level of sound in the classroom when it was quiet, normal, loud and noisy. They then created the code to measure, compare and show the result of level of sound on the screen.

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WEEK 3 / GRADE 7

HEALTH AND HYGIENE_EV3

Hygiene refers to good practices that prevent disease and lead to good health, especially cleanliness, proper disposal of wastewater and drinking water supply.

During Covid times, we took lot of precautions specially Hand Sanitizing but even touching the hand sanitizer container was not very safe. Keeping this in mind, the student teams were challenged to design their own, automated hand sanitizer machine using Lego EV3 set.

Engineers make machines using an engineering design process. In this activity also students as engineers, planned and designed their own hand sanitizer machine. In this activity students felt proud, motivated, courageous not only in accomplishing their goal but also learned about health and hygiene and learned to analyze their mistakes.

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HEALTH AND HYGIENE 2

This was an activity in continuation with the theme of Health and Hygiene. In this activity, student teams tested and modified their automated hand sanitizer machine. They programmed and tested the working and then added an ultrasonic sensor to sense the hand and then dispense the sanitizer.

Student teams dedicatedly worked on troubleshooting of the machine and designed solutions to make it work and finally shared their learnings, failures, success stories with other teams.

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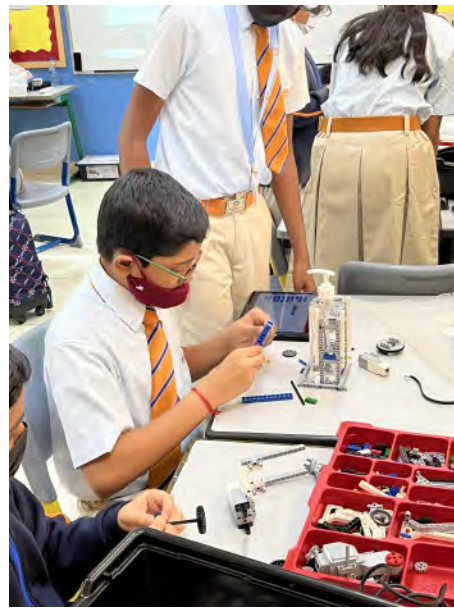
SCISSOR'S LIFT

Pressure is a force over a given area. It is an important part of our lives right from the body pressure, gas pressure in tyres of vehicles to cooking gas pressure etc. It's very important for children to understand this concept in order to avoid any accident.

In this activity, student teams built a device called scissor's lift using the principle of air pressure. Students learned and understood the working of air hydraulics by using piston, pipes, valves, cylinders, manometer etc. and the working principle of scissor lift that helps in our day to day life to keep, remove or fix things at a certain height from the ground.

SCISSOR LIFT 2

Testing a machine is crucial before it launched in the market to use to avoid any accident or getting a bad name to the company.
In this activity, student teams tested the pre build scissor lift by varying applying pressure to it using piston and the cylinder. Students also tried and found the relation between the pressure and the height of the lift.
At last they got chance to share their learning before the class and learn from others.

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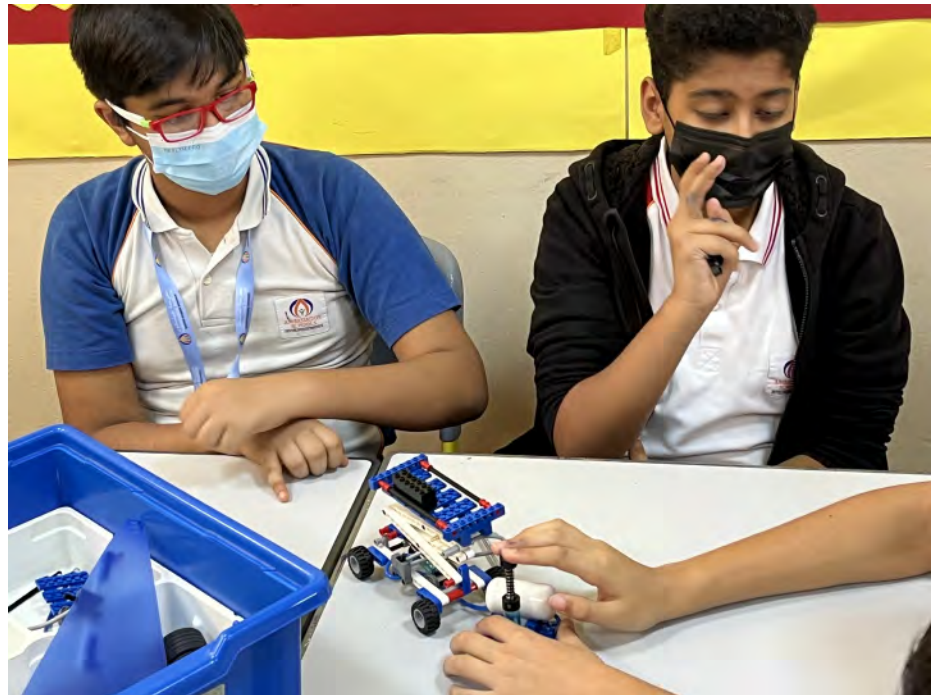
EV3 POLYGON

In geometry, a polygon is a plane figure that is described by a finite number of straight line segments connected to form a closed polygonal chain. The bounded plane region, the bounding circuit, or the two together, may be called a polygon.

Drawing polygon is easy for humans, but if the same task will be given to robot then you need to apply a whole process to make that happen. In this activity, students were challenged to design the robot that can draw polygons on surfaces. Teams used the pre build Lego EV3 robot to connect the arm mechanism that can hold and keep the pen movement up and down based on the requirement.

Students researched the different mechanism that can be used and finalized one for their robot and build it to connect to the robot. They also planned to program the robot to move to draw the polygon.