



مدرسة امباسادور
AMBASSADOR SCHOOL
INSPIRE INQUIRE INNOVATE



**STREAMING
FORWARD**
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MATH IS FUN WITH PLUGO!

Math is fun with PLUGO was extended for another week. Students reinforced their number counting, number comparison, greater than and lesser than ,with understanding using a computer vision technology through a product name PLUGO by SHIFU. Students adapted to this unique approach to learning by integrating technology with traditional play, making math an enjoyable learning experience for them.

Overall, a math activity using PLUGO lead to multifaceted outcomes that contributed to children's mathematical development, cognitive growth, social-emotional skills, and enjoyment of learning.



MY FIRST COMIC STRIP

Comic strip is a series of adjacent drawn images, usually arranged horizontally, that are designed to be read as a narrative or a chronological sequence.

Students constructed a story in a structured manner. They were introduced to the basic elements of storytelling such as character/s building, plot setting and conclusion. Students used LEGO Story Tales elements to build the story and later there was transition to the digital poster creation using Story Visualizer App. They were instructed to use the app to illustrate their story by incorporating images, text, and narration to the same. Storytelling in a kindergarten setting encompasses a range of developmental goals, including language and literacy skills, cognitive development, social-emotional learning, and creativity. Students develop essential academic skills, also cultivate a love for literature and storytelling that can last a lifetime.



MTINY I SPY

Emotions play a crucial role during the learning process. It is important to create a positive and supportive environment where they feel comfortable expressing their feelings.

Students were given different situations and had to build an algorithm using move forward and demonstrate appropriate emotion after reaching the destination. Concept of simple algorithm for the first time was introduced. Students complimented the emotion code block with input and move forward code block to reach the destination.

This activity provided the students with a basic understanding of algorithms through interactive and hands-on activity. It helped in creating a foundation for further exploration of algorithms and problem-solving skills and creative thinking in future lessons.



TOY FACTORY

The learning objective of the activity was to cultivate fine motor skills as young learners manipulate small parts, handle tools, and assemble components, enhancing their dexterity and coordination.

Reinforcement of engineering and designing skills to build a toy using gear mechanism. The toy can move and launch the stopper on the called out number. They learnt to use vocabulary words associated with gears, such as "teeth," "rotation," "axle," and "meshing." The principles of mechanical motion is strengthened by assembling the toy. Students manipulated the gears and observed the interaction with one another.

It set a deeper understanding of cause-and-effect relationships and spatial reasoning. Additionally, critical thinking and problem-solving abilities of the children were also tested during the construction process, encouraging them to experiment, adapt, and find solutions. Moreover, building using different parts from the kit stimulates creativity and imagination as kids design and personalize their toys, fostering self-expression and innovation. Furthermore, incorporating launching on called out number promoted engagement and motivation while reinforcing number identification and numerical fluency.



TECHBOT

Coding tells a machine which actions to perform and how to complete tasks. Programming languages provide the rules for building websites, and apps. MTINY bot which integrates computer programming into real life without a screen was coded by students. They constructed an algorithm to program the bot in the correct sequence enabling it to reach its destination. They learnt about the concept of algorithm and its importance for precise instructions/coding to accomplish a given task. They tried Expanded and unit form of a number while completing the task.

This learning objective, developed a deep understanding of place value and proficiency in representing numbers in expanded and unit form while honing their coding skills and problem-solving abilities.



AM I ALIVE?

Objective - It is collaborative work in small groups to design and construct mechanical hockey players using motors, controller and a switch. They experimented with gear to simulate shooting movements. Tested their working model to shoot and land the puck on the number name that was displayed on the screen.

Later part students participated in a discussion about living and non-living things. They explored the characteristics and functions that distinguish living organisms, from non-living objects. By comparing the model with humans and animals, students identified similarities such as the need for energy, interactions with the environment, as well as differences including growth and sustainability.

Through these activities, students developed a deeper understanding of both engineering concepts and fundamental principles of biology. They applied their knowledge of simple machines to solve real-world challenges, while also gaining insight into the diverse characteristics of living and non-living things. This integrated approach to learning fostered critical thinking, collaboration, and interdisciplinary connections, preparing students for future exploration in science, engineering, and beyond.



PLACE VALUE AND FACE VALUE WITH PLUGO

Students reinforced their counting, number identification, place value, face value and expanded form of number understanding using a computer vision technology through a product name PLUGO by SHIFU. They enjoyed hands-on mathematical solving activities using this AR powered platform which motivated them to interact with the virtual interface to enhance their learning experience.

By integrating PLUGO into lessons on face value and place value, lesson was very engaging and developed interactive learning experience that helped students gain a deeper understanding of these fundamental math concepts.



EXPLORE THE CAFE

Teaching the importance of food for sustenance to first-grade students is crucial for their understanding of nutrition and overall well-being.

Students designed and constructed variety of food models. They explained the nutritional facts about the food model created and also how food is essential for providing energy and nutrients to the body to grow, stay healthy, and function properly. Later they created a digital menu for the food models they created.

The math was integrated in the lesson by encouraging the students to explore the mathematical concepts such as counting, sorting, and pattern recognition as they assemble LEGO bricks to represent different types of food items.

By instilling these foundational concepts early on, educators empower first-grade students to make informed decisions about their diet and set the stage for a lifetime of healthy eating habits.



PLANT STORY

Students unleashed their creativity in this activity by constructing a story explaining about different types of plants, their characteristics, and their adaptations. Students used LEGO Community Starter to build the story and later there was transition to the digital aspect of the activity by creating a comic strip using Story Visualizer App. They were instructed to use the app that represents their story by incorporating images, text, and narration to the same.

Storytelling holds immense importance for this age group students, as it plays a pivotal role in their cognitive, emotional, social, literacy and linguistic development.



MTINY : REPEAT ONCE AGAIN!!

Students utilized their programming skills to code MTINY's movements, incorporating commands such as forward, backward, left, and right along with repeat code block to navigate through a simulated environment. Students exercised creativity and imagination as they designed and customized their plant-based food items such as a fruit salad or vegetable burger.

Overall, the combination of programming MTINY and constructing plant-based food items using the Lego Math Cafe set provided students with a multifaceted learning experience. They not only honed their coding and mathematical skills but also explored concepts related to nutrition, sustainability, and creative expression. This integrated approach promoted critical thinking, collaboration, and hands-on learning, equipping students with valuable skills and knowledge applicable across various academic disciplines and real-world contexts.



PLANT MYSTERY

The objective was to build mechanical plant and compare it to a real growing plant involving complex ideas into understandable terms. Use of vocabulary like photosynthesis, germination and adaptation was introduced. They then discussed the importance of Photosynthesis and requirements for the germination process. Also discussed about the plants varying in shapes and sizes to adapt to different habitat. Task was to design and build a working model of a mechanical plant replicating the parts similar to a real plant. After completing the building, they were asked to use the sensors (infrared sensor, light sensor and sound sensor) and program their model. Every team was then asked to demonstrate the working principle of their mechanical plant.

The lesson concluded by discussing how plants provide a myriad of ecosystem services that sustain life on earth and contribute to the well-being of both natural and human-made environments.



ADDITION WITH PLUGO

Students reinforced their number identification, counting and 2-digit addition understanding using a computer vision technology through a product name PLUGO by SHIFU. Teaching two-digit addition using PLUGO Shifu provides a dynamic and interactive learning experience for students, through engaging hands-on games and activities.

Students were encouraged to interact with the PLUGO gaming pad and complete the math challenges presented in the app. They used identified and used the physical numbers to solve word problems related to addition. They explored the concept of adding numbers together while also honing their critical thinking and problem-solving skills.

Reflection on the concepts learnt and any challenges they faced. Students were confident to apply their mathematical skills in real-life situations.



AIR QUALITY WITH PASCO!

PASCO carbon dioxide sensor and the Sparkvue application to explore composition of air and the air quality was the objective. Working of sensor and the steps involved in measuring the carbon dioxide levels was briefed.

Students first used the PASCO sensor to measure the normal carbon dioxide concentration in the air around them, establishing a baseline. They then exhaled into a bottle and measured the carbon dioxide levels again, observing a significant spike due to the high concentration of CO₂ in their breath.

In the next step, they placed wet leaves inside the bottle and monitored the carbon dioxide levels over time. A decrease in CO₂ levels were observed, demonstrating the process of photosynthesis where plants absorb carbon dioxide and release oxygen. This hands-on activity not only provided practical insights into air quality and photosynthesis but also enhanced the students' understanding of scientific measurement and data analysis.



WATER CYCLE MODEL!

Research on water cycle, such as evaporation, condensation, precipitation, and collection was done by students. Water cycle model was designed using the LEGO Community Starter kit and labeled each part with paper tags.

Through this hands-on project, the students demonstrated their understanding of the water cycle by creatively representing each stage with LEGO components. This engaging activity not only reinforced their knowledge of environmental science but also enhanced their skills in collaboration, problem-solving, and critical thinking.



SPIKE TAXI!

Introduction of LEGO SPIKE Essential Kit, guided by the in-app tutorials. The session began with an introduction to the kit's components and the accompanying application for programming, which provided step-by-step instructions for the young learners. Designing and building a taxi using the LEGO pieces was the task. They collaborated in teams, fostering creativity and problem-solving skills. Once the taxis were constructed, they moved on to programming their creations. Utilizing the user-friendly block based coding interface, the students successfully programmed their taxis to move forward and backward.

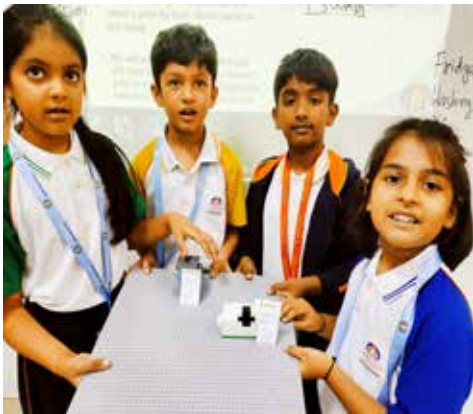
This hands-on experience not only reinforced basic engineering concepts but also introduced fundamental coding principles. The students demonstrated remarkable enthusiasm and ingenuity, effectively developing their STREAM skills and gaining confidence in their ability to tackle technological challenges.



ENERGY EFFICIENCY TRADE FAIR!

Students explored the star ratings and efficiency of electrical appliances. Understanding star ratings indicators to check the energy efficiency of various appliances – that is, how much energy a product uses compared to similar products. More stars means more efficient, when compared to other models of a similar size and features. Following this, students created models of different electrical appliances using LEGO and paper, creatively designing each to resemble real products. Each products were given a star rating to depict its energy efficiency.

Applying the math skill student set up a trade fair where they displayed their models with assigned prices. They calculated discounts and subtracted these amounts to display the final prices of the appliances. This activity effectively combined lessons in environmental science, mathematics, and creativity, culminating in a fun and educational trade fair experience.



THE HEALTHY FOOD PYRAMID

Students engaged in this interesting activity where they researched the food pyramid and categories of food to understand the importance of a balanced diet. They created models of various food items using paper, categorizing them into the appropriate food groups. Using the Stop Motion Studio application, the students animated these models to illustrate the healthy food pyramid.

The stop motion animation project helped them visualize the concept creatively while reinforcing their knowledge of nutrition. This activity not only enhanced their understanding of healthy eating but also enriched their animation and digital storytelling skills and fostered teamwork and creativity.



AMBASSADOR WEATHER REPORT

Introduction of PASCO weather sensor and the Sparkvue application. They researched weather components, including temperature, humidity, and air pressure. Using the PASCO sensor, they measured these weather conditions both inside and outside the classroom. The students observed and recorded the differences in these measurements. They analyzed their data and presented their findings by designing a weather report.

This hands-on activity enhanced their understanding of weather concepts and data collection, fostering skills in scientific observation, usage of technology, and report writing.



MICROBIT MATHS

Students delved into the world of engineering through an exciting activity where they were introduced to the micro:bit, a versatile and beginner-friendly microcontroller to learn coding and electronics. The session began with a hands-on tutorial on the basics of the micro:bit, including its buttons, LED display, and sensors.

Students quickly grasped the concepts and eagerly moved on to programming their micro:bits using a simple block-based coding interface. They created interactive projects such as displaying a smiley face on the LED screen, designing basic animations, and writing programs to add numbers using the micro:bit's buttons.

This activity not only made learning fun but also helped develop their coding and problem-solving skills. The students showed remarkable creativity and enthusiasm, demonstrating an ability to think critically and troubleshoot issues as they arose.



CLEAN IT TO DRINK IT!

Exploring various processes involved in water purification and to design their own water filter model was the task. They researched about the methods such as sedimentation, filtration, and disinfection, gaining a thorough understanding of how clean water is produced.

Utilizing the Lakeshore water filter kit, along with everyday materials like tissue paper and cloth, the students designed and constructed their own working models of water filters. They applied their knowledge to create multi-layered filters capable of removing impurities.

The hands-on activity culminated in a practical test where the students filtered water mixed with soil and other pollutants. Observing the transformation from dirty to clearer water provided a tangible demonstration of their filter's effectiveness. This project not only enhanced their comprehension of water purification processes but also developed their problem-solving and critical thinking skills, fostering a deeper appreciation for environmental science and engineering.



GO ROMANS SPIKE ESSENTIAL!

Grade 5 students embarked on an innovative project combining history, geography, and technology. They designed and built robots using LEGO Spike Essential to represent the distance between Abu Dhabi and Dubai in Roman numerals. This project allowed students to draw route maps and program their robots to navigate these maps, bringing an ancient numbering system to life in a modern context.

Students began by drawing a detailed route map from Abu Dhabi to Dubai on chart paper. They then designed and built robots using LEGO Spike Essential to travel along this route. The primary challenge was to code the robots to navigate the drawn route and showcase the distance between the two cities in Roman numerals.

The project was met with enthusiasm, with students expressing pride in their creations. They enjoyed the hands-on learning process and appreciated the opportunity to explore multiple disciplines in a single project. Many were excited to present their work, showcasing their understanding of Roman numerals, coding, and geographical mapping.



ADDITION WITH SPIKE PRIME

In a recent STREAM (Science, Technology, Research, Engineering, Arts, and Mathematics) activity, our Grade 5 students embarked on an exciting journey to design and build their own calculators for addition and subtraction using the LEGO Spike Prime kit and consumables. This project not only introduced them to fundamental concepts of mathematics and computing but also allowed them to explore the integration of sensors and coding in robotics.

The students designed a functional calculator that could perform basic arithmetic operations. They utilized the color sensor to identify the chosen operation (addition or subtraction) and used the touch sensor or buttons on the Spike Hub to input two numbers. The final results were then displayed on the Spike Hub's screen.

This STREAM activity not only reinforced essential mathematical concepts but also inspired students to explore the endless possibilities of technology and engineering



SPIKE PRIME CALCULATOR!

Following the success of their initial project, our Grade 5 students continued their journey in the world of robotics and coding by enhancing their calculators to perform multiplication and division using the LEGO Spike Prime kit. This ongoing STREAM (Science, Technology, Research, Engineering, Arts, and Mathematics) activity further deepened their understanding of mathematics and programming.

Building on their previous project, students modified their existing calculators to include multiplication and division operations. They updated the coding to recognize these new functions and adapted the hardware to ensure seamless input and display of results.

This continued STREAM activity not only solidified students' understanding of more complex arithmetic but also inspired them to push the boundaries of their coding and engineering skills.



LAND YACHTING!

Our Grade 5 students recently participated in an engaging STREAM (Science, Technology, Research, Engineering, Arts, and Mathematics) activity, where they designed and built their own Land Yachts using LEGO Simple and Powered Machines kits. This hands-on project was aimed at understanding the properties of air and calculating the speed of their Land Yachts to determine the best design.

In this innovative activity, students explored the principles of aerodynamics and engineering by constructing functional Land Yachts. They learned how air properties affect movement and performance, and used their designs to compete for the fastest Land Yacht.

This STREAM activity not only enhanced students' knowledge of air properties and engineering principles but also developed their problem-solving and analytical abilities. Calculating and analyzing speed helped students develop strong analytical and problem-solving skills.



AIRBLOCK DRONES HANDS ON!

We are thrilled to share the latest highlights from our STREAM activity for Grade 6 students! This week, our students embarked on an exhilarating journey into the world of drones, exploring their uses, mastering safety protocols, and taking flight with Airblock drones.

Using cutting-edge technology and innovative learning tools, our students began their adventure by immersing themselves in a drone simulator, Drone Sim AR. Through this virtual experience, they gained a deep understanding of drone mechanics, flight controls, and safety rules, preparing them for real-world piloting.

With safety protocols in place, our budding aviators then took to the skies with Airblock drones, guided by the Makeblock application. Under the expert guidance of educators, students learned to navigate, maneuver, and perform aerial acrobatics with their drones, all while honing their critical thinking and problem-solving skills.

Through this engaging STREAM activity, our Grade 6 students not only expanded their knowledge of drone technology but also cultivated essential 21st-century skills, including collaboration, creativity, and adaptability. We are incredibly proud of their achievements and look forward to witnessing their continued growth and innovation in the field of STREAM education.



DRONE POLLINATION!

Coding skills were tested as they programmed Air Block drones to accomplish a critical task: mimicking artificial pollination by moving from one plant to another with pinpoint accuracy.

Under the guidance of educators, students delved into the intricacies of drone programming, learning how to create precise code to navigate their drones from one location to another. With each line of code, they honed their problem-solving abilities and embraced the challenge of achieving perfection in flight.

As the drones took flight, the air was filled with anticipation and excitement. Some teams soared effortlessly from plant to plant, demonstrating remarkable precision and skill. Others encountered challenges along the way, grappling with the nuances of distance, speed, and timing. But through perseverance and determination, every team rose to the occasion, determined to accomplish their mission.

Throughout the activity, students embraced the spirit of collaboration, supporting each other and sharing insights to overcome obstacles. Together, they celebrated their successes and learned valuable lessons from their setbacks, fostering a culture of teamwork and resilience.



HEALTH AND HYGIENE WITH EV3!

Our Grade 6 students recently embarked on a thrilling STREAM (Science, Technology, Research, Engineering, Arts, and Mathematics) journey, where they designed and built innovative devices using LEGO EV3 kits to promote health and hygiene!

In this hands-on activity, students were tasked with addressing common health and hygiene challenges faced by people in their daily lives. With creativity and engineering skills, they brainstormed, designed, and constructed functional prototypes using LEGO EV3 robotics kits.

The students tackled various aspects of health and hygiene, from hand washing reminders and automated sanitizers to devices that encourage proper hygiene practices. By integrating sensors, motors, and coding, they brought their ideas to life, ensuring their devices were both practical and engaging.

This STREAM activity not only enhanced students' understanding of health and hygiene but also developed their engineering, coding, and problem-solving skills. We are incredibly proud of our Grade 6 innovators and their dedication to improving health and hygiene in our community!



TISSUE ENGINEERING!

In this hands-on project, students were tasked with designing a cast to fix the broken fibula of a fellow schoolmate. Armed with their knowledge of anatomy and materials science, students set out to create a customized solution that would provide comfort, support, and stability to the injured limb.

With careful consideration of factors such as time, tissue health, and patient comfort, students carefully selected materials and devised a plan to construct their casts. From traditional plaster to modern synthetic materials, each team explored a variety of options to find the perfect balance of strength and flexibility.

Once their casts were constructed, students eagerly put them to the test, applying them to a model limb and assessing their fit and functionality. Through trial and error, teams refined their designs, making adjustments to ensure optimal comfort and effectiveness. As the activity progressed, the school came alive with the sound of creativity and collaboration. Students brainstormed ideas, shared insights, and worked together to overcome challenges, fostering a culture of teamwork and innovation.

In the end, each team presented their final cast design, showcasing their ingenuity and problem-solving abilities. From lightweight and breathable designs to durable and supportive structures, the variety of solutions demonstrated the depth of students' creativity and critical thinking skills.

Through this engaging STREAM activity, our Grade 7 students not only gained valuable insights into the field of medicine and materials science but also developed essential 21st-century skills such as collaboration, communication, and adaptability.



DISPLAY SPEED WITH EV3!

The challenge was designing and programming their own robots to calculate and display speed. Armed with LEGO EV3 kits and their boundless creativity, students set out to engineer innovative solutions that would showcase their understanding of distance, time, and speed.

First, students worked diligently to build the basic structure of their robots. With their robots assembled, students then turned their attention to coding, using the intuitive interface of the LEGO EV3 software to program their robots' behavior.

Using variables and mathematical calculations, students programmed their robots to measure distance traveled and time elapsed, and then used this data to calculate speed.

As the activity progressed, the school buzzed with excitement as students put their robots to the test, eagerly watching as their creations raced across the classroom floor. With precision and accuracy, the robots displayed their calculated speeds on their built-in screens, showcasing the students' mastery of both programming and mathematics.

Through this engaging STREAM activity, students not only explored the exciting world of robotics and engineering but also developed essential 21st-century skills such as critical thinking, collaboration, and creativity. We are incredibly proud of their achievements and look forward to witnessing their continued growth and innovation in the field of STREAM education.



LEGO WEIGHING MACHINE!

Our Grade 7 students recently participated in an exciting STREAM (Science, Technology, Research, Engineering, Arts, and Mathematics) activity, where they designed and built manual weighing balance devices using LEGO Simple and Powered Machines kits!

In this hands-on project, students explored the principles of weight measurement and balance by creating their own weighing scales. The goal was to understand the concepts of calibration and accurate weight measurement, crucial for various real-world applications.

This STREAM activity not only deepened students' understanding of manual weighing devices and calibration but also nurtured their engineering, design, and analytical abilities. We are immensely proud of our Grade 7 students for their innovative approaches and dedication to learning!



DENSITY WITH LEGO BOAT!

In this hands-on project, students were tasked with designing and building their own simple boats using LEGO kits, all while gaining a deeper understanding of density and buoyancy. With creativity and ingenuity, students set out to engineer solutions that would float their boats – quite literally!

After constructing their boats, students put their knowledge of mass, volume, and density to the test, calculating these properties for their creations. Armed with data and determination, students then took to the water to test the buoyancy of their boats, observing how they floated and maneuvered in different conditions.

But the excitement didn't stop there! Students also explored the weight-carrying capacity of their boats, pushing the limits to see how much cargo each vessel could safely transport. With each modification and adjustment, students demonstrated their problem-solving skills and perseverance, determined to optimize their boats for maximum efficiency.

As the activity progressed, the school was abuzz with excitement as students collaborated, tinkered, and tested their creations, all while gaining valuable insights into the principles of physics and engineering.



SQUAT JUMPS!

In this invigorating project, students kicked off their day with a series of squat jumps, channeling their energy and enthusiasm into physical exercise. With each jump, students experienced the thrill of exertion and the release of potential energy.

But the excitement didn't end there! After their workout, students transitioned seamlessly into the realm of engineering as they put their minds to the task of designing and building their own exercise machines using the LEGO Spike Prime set.

With creativity and ingenuity, students engineered innovative solutions that would measure and analyze the potential energy generated during their squat jumps. Using sensors and programming, students designed their machines to capture data in real-time, providing valuable insights into their exercise performance.

As students put their machines to the test, the school buzzed with excitement as line graphs and numbers illuminated screens, showcasing the accuracy and efficiency of their designs.

Through this engaging STREAM activity, our students not only explored the principles of energy and motion but also developed essential 21st-century skills such as critical thinking, problem-solving, and collaboration.



WATCH YOUR STEPS!

Our Grade 8 students recently engaged in an exciting STREAM (Science, Technology, Research, Engineering, Arts, and Mathematics) activity, where they designed and built their own fitness machines—pedometers! These devices were used to measure the steps taken during walking, log data through graphs, and calculate the kinetic energy expended.

In this hands-on project, students combined their knowledge of engineering and technology to create functional pedometers using LEGO Spike Prime kit. They explored the mechanics of step counting and the principles of data logging and analysis, providing a comprehensive learning experience.

This STREAM activity not only deepened students' understanding of fitness technology and data analysis but also fostered their engineering and analytical abilities. Students also showcased their creativity and technical skills by designing effective pedometers.

