مدرسة امباسادور
AMBASSADOR SCHOOL
INSPIRE INQUIRE INNOVATE

STREAMING FORWARD

May 2025

VERY GOOD
DSIB RATING

MTINY I SPY

Programming the MTINY bot made computational thinking and coding interesting. The learning objectives were algorithmic movements incorporating input, motion, and emotion code blocks. Students explored different emotions and then programmed the bot to use the emotion code blocks.

Presentation of computational thinking and coding skills was done by guiding the bot to destinations associated with healthy foods. Students connected coding concepts with emotional expression and healthy living, creatively and meaningfully.

SPINNING LAUNCHER

Creativity and problem-solving skills were tested by designing and building using spinning tops and launchers. Students explored the engineering and design process by brainstorming, planning, testing, and further improving their designs.

The extension task was on gear mechanisms, demonstrating how gears help transfer motion and power in their launchers. Place value, using tens and ones, was used to measure and record the spins. Scientific and math concepts applied in the models were observed.

LUNCH HOUR

Creativity and critical thinking skills are put to test by engaging in a hands-on learning using the LEGO Math Café set. Students designed and built food items, which play a vital role in the growth and sustenance of living things. Through discussions and collaborative work, they learnt how nutrition supports healthy bodies and active lifestyles.

2D shapes—such as circles, squares, rectangles, and triangles— were identified in the food design. They strengthened their geometrical skills in a fun, context-rich environment.

Sorting each component according to different food groups, such as fruits, vegetables, proteins, grains, and dairy, reinforced their understanding of balanced diets and the importance of making healthy food choices.

CODER MIGHTY MTINY

Students reinforced their knowledge of coding by programming the MTINY bot to successfully navigate to a target destination, “home.” This made the fundamentals of sequencing, logic, and problem-solving understandable in a fun and interactive context.

Students think like programmers, breaking down tasks into clear, manageable steps. They learned to anticipate challenges, debug errors, and adjust their algorithms to improve accuracy and efficiency. The algorithmic thinking applies to everyday situations, reinforcing the relevance and value of coding beyond the screen.

This experience helped lay a strong foundation for future exploration in computer science, robotics, and digital problem-solving.

WELL RESCUE!

A real-life-inspired problem was solved with brilliant solutions in the STREAM session. The scenario reads: a group of teddies had fallen into a well. Students brainstormed ideas through discussion, built prototypes, tested their models, and refined their designs to ensure prototypes were good enough to rescue the teddies.

"They skillfully composed and decomposed numbers while calculating scores related to their task performance. Additionally, they demonstrated a clear understanding of the working mechanisms behind their models and confidently explained how their designs functioned to solve the problem."

AM I ALIVE?

Students applied the engineering design process to build motor-powered hockey player prototypes featuring functional gear mechanisms. Through testing and refining, they gained hands-on understanding of how gears transmit motion and power.

Math came alive as students scored points during demonstrations and calculated totals using place value, reinforcing number decomposition skills in a fun way.

The project also explored science concepts by comparing mechanical models (non-living) with real athletes (living), deepening their understanding of life processes and mechanical systems. A perfect blend of creativity, competition, and cross-curricular learning!

SAM'S PET DOG

Students explored mechanical systems by designing models of mechanical dogs with movable eyes controlled by pulley and belt systems. Through hands-on experimentation with open and crossed belt drives, they discovered how motion and force can be transmitted and redirected. The project also integrated math skills, as students compared numbers from spinning wheels positioned on the models, turning a mechanical task into a fun, interactive way to reinforce number comparison.

EXPLORE CAFE

Blending creativity with core learning goals, this hands-on activity integrates design, numeracy, health education, and digital literacy in a fun and purposeful way.

Students became imaginative chefs, designing their cafés and building playful, healthy meals using LEGO bricks. Along the way, they explored math concepts like shape, pattern, and spatial awareness, while learning about the benefits of organic food and sustainable choices.

Using the Story Visualizer tool, they created eye-catching digital posters to advertise their cafés, combining design skills with nutritional awareness. The activity concluded with a numeracy challenge, where students counted and represented their LEGO bricks in expanded form, reinforcing place value in a real-world context.

BRINGING PLANTS TO LIFE:

As part of an integrated science and digital literacy activity, students embarked on a creative journey to explore the world of plants. They designed and constructed imaginative stories using LEGO Community Starter blocks that explained the different types of plants, highlighting their key characteristics and the unique adaptations that help them survive in diverse environments.

Utilizing the Story Visualizer App, students brought their stories to life in the form of digital comic strip. These vibrant creations not only reflected their scientific knowledge but also showcased their storytelling abilities, digital skills, and environmental awareness. The activity fostered curiosity, creativity, and a deeper appreciation for the plant kingdom, making learning both meaningful and memorable.





MTINY VISIT TO SUPERMARKET!!

Our students recently embarked on a dynamic cross-curricular adventure that blended programming, problem-solving, and creative design. Using a custom supermarket challenge mat, they programmed robots to navigate various store sections and complete a shopping list, enhancing computational thinking, collaboration, and resilience through debugging and testing.

Following the challenge, students moved on to the LEGO Math Café set, where they designed imaginative food items for their cafés. This task integrated science by prompting students to identify the sources of their ingredients—plant, animal, or other—while applying design thinking and creativity.

This engaging experience beautifully combined digital literacy, scientific knowledge, and innovation, showcasing how technology and imagination can deepen learning and inspire curiosity.

PLANT MYSTERY

Students built models of electrical plants using gear mechanisms. With guided exploration, a basic understanding of how gears work to transfer motion and force within a system is gained. The presentation was to share the working principles behind their design of different gears interacting to simulate realistic movement in plant models.

Comparison between the parts of real plants and the components of their mechanical models helped reinforce their understanding of plant biology while encouraging them to think like engineers.

A digital quiz using Quizizz.com allowed students to review key concepts and reflect.The activity was a perfect blend of science, technology, and critical thinking—and a great example of learning in action!

SCORING GOALS WITH STEM!

Students engaged in a fun, hands-on STEM activity by building a mechanical hockey player and goalkeeper using the LEGO BricQ set. While exploring how gears and movement work, they also applied addition strategies to keep score during mini hockey matches. This activity effectively blended engineering and math, helping students connect classroom concepts to real-life situations in an exciting and meaningful way.

Creativity, problem solving, and teamwork were the highlights of the activity.

LEGO PLACE VALUE BUILDING

Turning math into models, young learners explored the place value system of 4-digit numbers by building creative houses using the LEGO Community starter bricks. A digital quiz to reinforce the objective place value was conducted. A number card was the resource to construct a house where the thousands, hundreds, tens, and ones translated into rooms, wall layers, doors, and decorations. Distinct brick colors represented each place value, helping visualize the concept.

As they built, explained, and presented their creations, students sharpened their reasoning, creativity, and communication skills — bringing numbers to life in an engaging way that blended math with design.

SPIKE ESSENTIAL TAXI!

Jumpstarting their journey into robotics, students enthusiastically explored the LEGO Spike Essential kit and its key components, including the hub, motors, and color and gyro sensors. Using the tablets, students programmed basic movement, commands through block-based coding. Cars were then coded to move forward, backward, and turn in both directions.

This task helped students develop logical reasoning and problem-solving skills. By blending hands-on building with programming, the experience offered a fun and practical introduction to modern technology in a classroom setting.

WATER CYCLE IN MOTION!

Transforming tiny bricks into big ideas, students embarked on a creative STREAM adventure to explore the water cycle. Using the LEGO Community Starter Kit, they constructed detailed scenes with landscapes, clouds, water bodies, and the sun. Tiny bricks became raindrops, vapour, and snow, while paper labels marked each stage—evaporation, condensation, precipitation, and collection. With tablets and the Stop Motion Studio app, they animated their models to bring the process to life.

This hands-on experience blended science, technology, and storytelling, helping students deepen their understanding of water's changing states while fostering teamwork, creativity, sequencing, and digital expression in a fun and memorable way.

ANCIENT MYSTERIES!

With sparks of curiosity and a mission to solve real-world problems, students journeyed into the world of archaeology through the lens of innovation. They learned how archaeologists uncover hidden stories of the past and investigated the everyday challenges faced during excavations. Inspired to build, they imagined and engineered robots using the LEGO Spike Essential Kit—programming models to gently dig, detect, or transport fragile artifacts.

As they built, coded, and collaborated, students turned research into action, creativity into function, and ideas into machines. This thoughtful blend of empathy, teamwork, and technology helped bring the ancient world to life.

MICRO: BIT CALCULATOR

Programming using Micro: bit simulator in MakeCode. Students designed and coded simple calculators to perform addition, subtraction, multiplication, and division. Through this project, students applied key coding concepts like inputs, variables, and outputs, while connecting math with technology. They also documented their process and reflected creatively on their learning.

ENERGIZE THE ECOSYSTEM

Using LEGO SPIKE Essential kits, students built and programmed models of forest organisms such as producers, consumers, and decomposers. They worked in teams to assemble complete food chains, demonstrating how energy flows from one organism to another. Through collaboration and creativity, they also reflected on how all living things depend on each other for survival. It was a fun and meaningful way to bring science, technology, and teamwork together in action!

Sustainability of Mother Earth is important is the key learning, and this change can be observed if individuals practise regularly, starting from home.

PLANT SUPERHERO

Parts of a plant were practically made to learn using the LEGO Community Starter Set to build their very own Plant Superheroes! They then brought their creations to life by making short stop-motion animations, combining science, creativity, and technology. This hands-on activity helped students understand plant functions in a fun way while boosting their design and storytelling skills. They all enjoyed the session.

The presentation showcased the strengths of each student in various skills learnt during the session.

UNEARTHED AND ARCHAEOLOGY

What and why is archaeology necessary? Students learned how archaeologists uncover historical artifacts and identified the real-world challenges faced during excavations. Using Tinker CAD, they researched and designed digital tools and systems to assist archaeologists, developing an understanding of how technology can support historical discovery. Their focus was on innovation, problem-solving, and applying research to 3D design, with each team presenting their solution and explaining how it could be used in the field.

HOUSE IN A BUDGET

LEGO Community Starter Set was used to design and build their own houses, just like real architects! The challenge? They had to build their dream house within a budget of 100 AED. Each LEGO brick had a price, and students used decimal multiplication and division to calculate costs, stay within budget, and make smart spending decisions. While building, they also practiced teamwork, planning, and problem-solving. This activity helped students understand how math is used in real-life situations like shopping, designing, and budgeting—all while having fun with LEGO!

The students were assessed for creativity and application of math concepts.

MODEL EARTH IN A CUP

Students, as young environmental engineers, explored the science behind soil and erosion. Using everyday consumables like sand, clay, pebbles, water, and cardboard, students built layered soil models to understand its structure and composition. They then simulated the effects of wind and water erosion to observe how soil can be displaced. In teams, students engineered creative solutions, such as barriers and planted surfaces, to prevent erosion, testing and refining their designs. The activity brought real-world environmental issues to life while building collaboration and critical STREAM skills!

SOLAR ENERGY VS FOSSIL FUELS

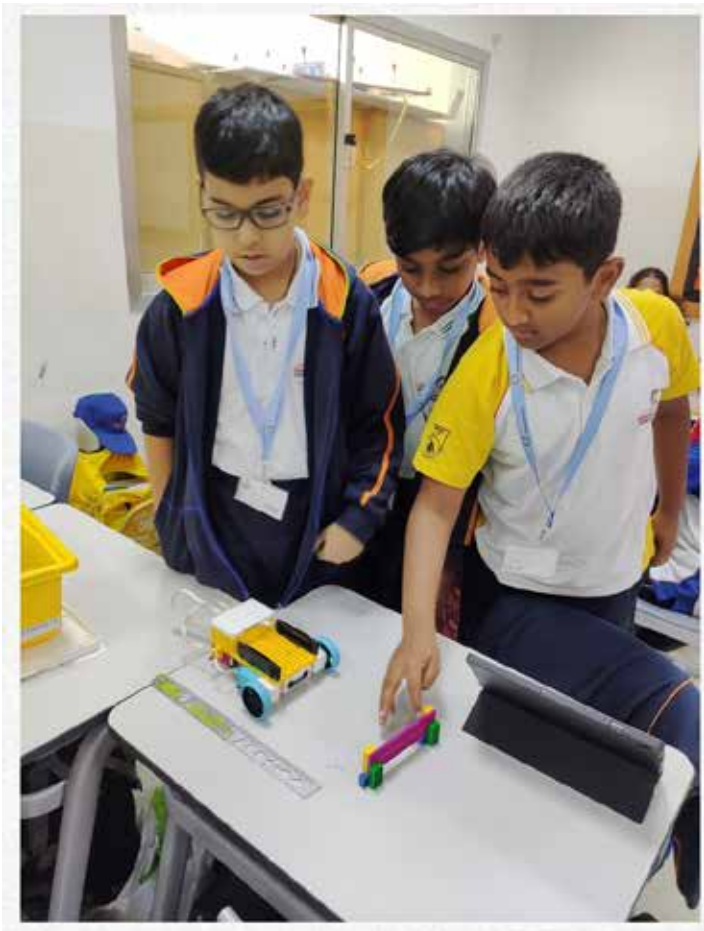
Differentiation of Renewable and non-renewable energy was the objective through a hands-on STREAM challenge. They built two types of LEGO-powered vehicles — one using the LEGO Solar Kit and the other using LEGO Spike Prime, simulating a fossil fuel-powered car. The solar car was tested under sunlight, showing how clean, renewable energy can power motion. In contrast, the Spike Prime car represented a system dependent on stored, non-renewable energy. Students compared both cars, discussed environmental impacts, and reflected on how energy choices affect our planet. This activity helped them connect science, engineering, and sustainability in a meaningful and fun way!

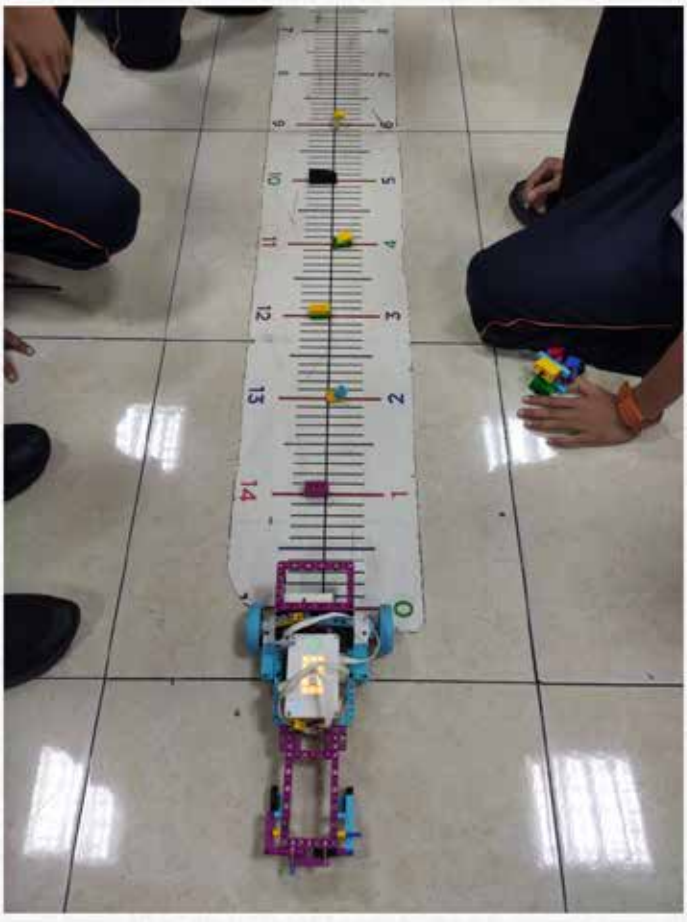
DIGGING INTO THE PAST WITH AUTOMATION

Examining how modern technology, particularly robotics, can enhance archaeological digs. After identifying excavation-related challenges, they collaborated in teams to design and build simple robotic tools using LEGO Spike Prime kits. These tools were designed to assist in simulated digs, such as safely retrieving fragile objects or clearing debris. The students programmed their robotic prototypes and presented them to their peers, demonstrating not just their functionality but also the thought process behind their designs. This hands-on experience deepened their understanding of real-world engineering applications and teamwork. Team collaboration, critical thinking, and problem solving were the skills observed.

ROBOT CHEF TIMER & THERMOMETER

The Robot Chef Timer & Thermometer is a Grade 6 STREAM lesson designed to integrate science, math, and technology through a real-world culinary context. Using LEGO Spike Prime, students build and code a robotic system that simulates a kitchen assistant capable of measuring time and temperature. As they program timers and temperature sensors, learners explore the concepts of heat transfer, states of matter, and accurate measurement tools. This hands-on activity fosters skills in problem-solving, coding, data analysis, and collaborative teamwork. Students connect scientific concepts to everyday life while applying their knowledge to create a functional robotic chef tool.





INTRODUCTION TO DRONE

Students took to the skies—virtually—by learning to fly drones using the Drone SIM AR app before handling real drones. They explored the basic components of drones, practiced navigation and control, and connected flight movement to physics concepts like lift, thrust, and landing.

Through interactive simulation, students discovered how drones are used in real life, like in agriculture, delivery, photography, and disaster response. They also discussed the ethical use of drone technology and the importance of safety protocols. The activity blended technology, science, and real-world problem solving, sparking excitement for future innovations in flight!

"A REVELATION UNEARTHED FROM BENEATH THE GROUND."

Creative journey through time with their STREAM lesson titled "Unearthed." Tasked with picking a real challenge faced by archaeologists while digging, students stepped into the shoes of problem-solvers and inventors.

Using only LEGO Spike Prime kits and tablets for coding and research, each group designed and built a tool or device that could support archaeologists in the field. From artifact detectors to gentle digging arms and motion-alert systems, students combined science, engineering, and technology with a touch of ancient curiosity.

This hands-on activity not only sparked innovation but also helped students understand how modern tools can solve historical challenges, making learning truly interactive, meaningful, and unforgettable.

ROBOT CHEF TIMER & THERMOMETER

The Robot Motion Challenge is an engaging STREAM activity designed using LEGO Spike Prime. Students explore key physics concepts such as types of motion, speed, direction, and measurements, while integrating technology and coding. Students work in teams to program their robots to complete specific movement tasks—like navigating a maze, adjusting speed, or reversing direction—using block-based coding. Through hands-on experimentation and iterative problem-solving, learners analyze the effect of programming commands on motion, measure time and distance, and reinforce math and science skills. The activity promotes critical thinking, collaboration, and real-world application of motion concepts in robotics.

CHECK YOUR MOVES!

The Pasco Motion Sensor and the Sparkvue application were used to explore real-world physics. They successfully set up the motion sensor to measure, record, and analyze the movement of different objects. By observing position-time and velocity-time graphs, students interpreted motion patterns and changes in speed. They also took it a step further by coding the motion sensor to respond to object speed, connecting physical concepts with technology.

This activity helped students build foundational skills in data analysis, sensor integration, and coding, making science interactive and meaningful. The application of science and math concepts and the use of resources was observed during the class.

UNEARTHED!

Exploring the real challenges faced by archaeologists on land and underwater was the objective. Using LEGO Spike Prime kits and tablets, they designed creative tools—like artifact retrievers, robotic diggers, and alert systems—to support digs in difficult conditions, including during natural calamities.

This hands-on experience not only nurtured curiosity and collaboration but also showed how young minds can contribute meaningfully to preserving the past—one brick, one line of code, and one idea at a time.

Research, reading, and time management were the skills observed during the session.

CIRCULATORY SYSTEM - STOP OR IN MOTION!

Grade 8 students explored the human circulatory system by researching real-life diseases and creatively bringing their understanding to life through stop-motion animation.

Using simple tools like LEGO Community Starter Kits and hand-drawn props, they explained how diseases in circulatory system affect the body and suggested possible solutions. This hands-on project helped students blend biology, storytelling, and visual design—turning science into an engaging narrative!

ROCKET LAUNCH - POWER OF PRESSURE

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THERMOFLASK CHALLENGE

This week in STREAM, our Grade 8 students explored the science of heat transfer through a hands-on activity where they designed and tested insulated containers (thermoflasks). Using consumables like glasses, ice, cotton, foil, paper, and foam, they applied design thinking to build prototypes aimed at minimizing heat loss. Students observed changes in state such as melting and sublimation using safe heat sources, while PASCO temperature sensors helped them record and graph temperature changes over time. Through data analysis, they evaluated which materials offered the best insulation. The activity fostered creativity, collaboration, and a deeper understanding of thermal energy and material properties.

UNEARTHED - ROBOTICS FOR ARCHAEOLOG

Archaeological advancement by combining historical knowledge with engineering, coding, and design thinking was the objective. Students investigated the ethical and logistical challenges archaeologists face in complex or delicate excavation environments. Using LEGO EV3 kits, they proposed and developed robotic solutions to address these issues. Students collaborated to build, program, and refine functional prototypes, focusing on technical precision and real-world usability.

The project culminated in detailed presentations where students explained their design thinking, engineering choices, and how their robots would operate in an archaeological setting. This project highlighted their ability to integrate multiple disciplines and solve problems in a creative and technically sound manner.

Most students were able to build prototypes within the limited time using their critical thinking skills and teamwork.