مدرسة امباسادور
AMBASSADOR SCHOOL
INSPIRE INQUIRE INNOVATE

STREAMING FORWARD

April 2025

VERY GOOD
DSIB RATING

DREAMWORK TEAMWORK

The STREAM Lab kicked off the new academic year with excitement and energy, as our curious students eagerly participated in a series of interactive, hands-on challenges. The session began with warm self-introductions, which helped foster a sense of community and collaboration from the very start.

Students learned about the STREAM acronym—Science, Technology, Reading/Research, Engineering, Arts, and Mathematics—and were able to explain the importance of each component. They kicked off the activity by building a tall tower, applying engineering concepts such as stability and structural design to maximize both strength and height. Throughout the process, students counted the total number of cups used and measured the tower's height by tallying the blocks. This hands-on project allowed them to connect knowledge from various subjects while honing their collaboration, problem-solving, and math skills.

DESIGN AND THINKING CHALLENGE

Students applied their knowledge and understanding of structures, stability, measurement, and principles of fair testing while constructing a functional model of a seesaw. During the building process, they explored different parts of the kits and construction techniques to ensure the seesaw remained balanced and stable under varying conditions.

They engaged in innovative problem-solving, developing creative solutions to overcome challenges related to weight distribution, pivot placement, and material limitations. Their design choices reflected thoughtful experimentation and iterative improvement, showcasing their ability to think critically and work collaboratively.

Students also explained how their seesaw models worked. They talked about how balance and force affected the movement. Their explanations showed they understood the science behind it and could clearly share their ideas.

MATH IS FUN WITH PLUGO

The students were introduced to the AR kit PLUGO, which allowed them to experience learning in an engaging and interactive way through augmented reality technology. They used PLUGO to solve mathematical problems related to concepts such as counting, comparison, and missing numbers. Working in teams, they explored the activities with great enthusiasm and collaborated effectively to find the correct answers. The use of AR made the learning process both fun and educational, and the students thoroughly enjoyed the experience of combining technology with math.

ROBO ARM

The session began with warm self-introductions, which helped foster a sense of community and collaboration from the very start. With eager smiles and curious minds, the Grade One students quickly immersed themselves in a series of interactive, hands-on STREAM challenges.

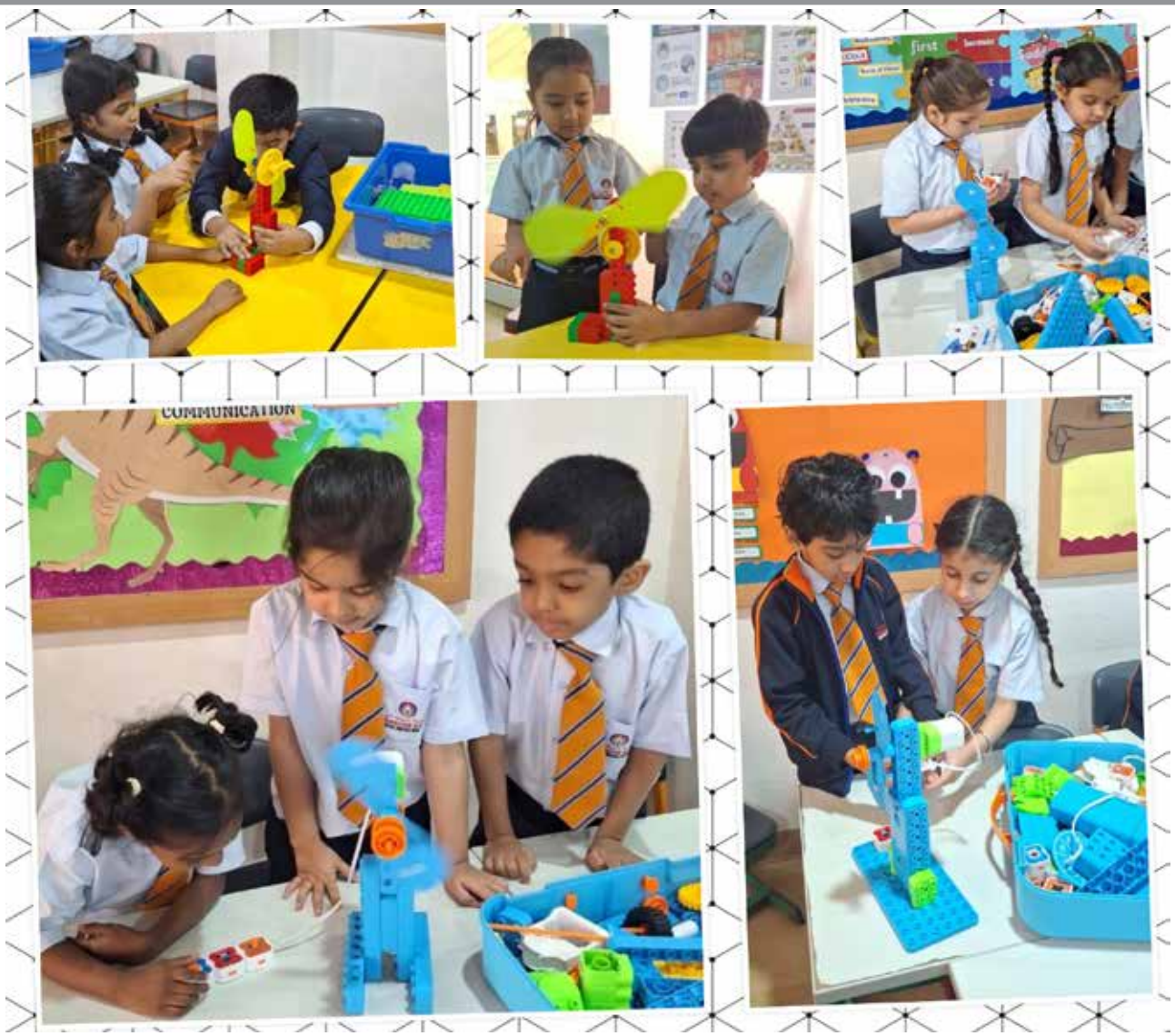
Students quickly got to work, demonstrating teamwork and communication as they built tall, stable cup towers together. The excitement continued as they engineered mechanical grabbers designed to pick up the maximum number of balls—an engaging challenge that combined creativity with real-world problem-solving.

To add an academic twist, the young innovators applied their skip counting and addition skills to calculate their scores. The team with the highest points was proudly celebrated, bringing the activity to a close with a sense of friendly competition and achievement.

This engaging kickoff not only sparked enthusiasm for the year ahead but also laid the foundation for essential STREAM skills—setting students on a path of innovation, exploration, and growth.

ENGINEERING AND DESIGNING PROCESS - THE COOLING FAN

Students demonstrated their understanding of the engineering and design process while building both mechanical and motorized models of a cooling fan. They used components such as gears, a motor, a switch, and a controller to construct and operate the fan. Throughout the project, they carefully planned, assembled, and tested their models, making adjustments to improve performance. After completing their builds, the students shared their observations, explaining how the different parts worked together to create motion and airflow. Their explanations showed a clear understanding of mechanical systems and how electrical components can be used to control them.



MTINY - THE TECH BOT

The students engaged in an exciting coding activity using the MTINY bot, where they programmed the bot in a sequence to perform algorithmic movements such as moving forward, turning left, turning right, and using the repeat code block. They began by decoding the algorithm provided by the teacher, assembling the appropriate code blocks to bring the instructions to life. Once the algorithm was in place, they constructed a path for the bot to follow and tested their code to ensure the path matched the given instructions. Upon successfully reaching the destination, the students demonstrated their understanding of number forms by converting numbers from expanded form to unit form and building a tower accordingly. Throughout the activity, students showcased their computational thinking and coding skills, effectively explaining their algorithm and how it controlled the bot's movement.

THE TECH CHALLENGE

The session began with cheerful self-introductions, setting a warm and welcoming tone as Grade Two students stepped into the STREAM Lab for this academic year. Right from the start, the focus was on building a strong sense of community and collaboration.

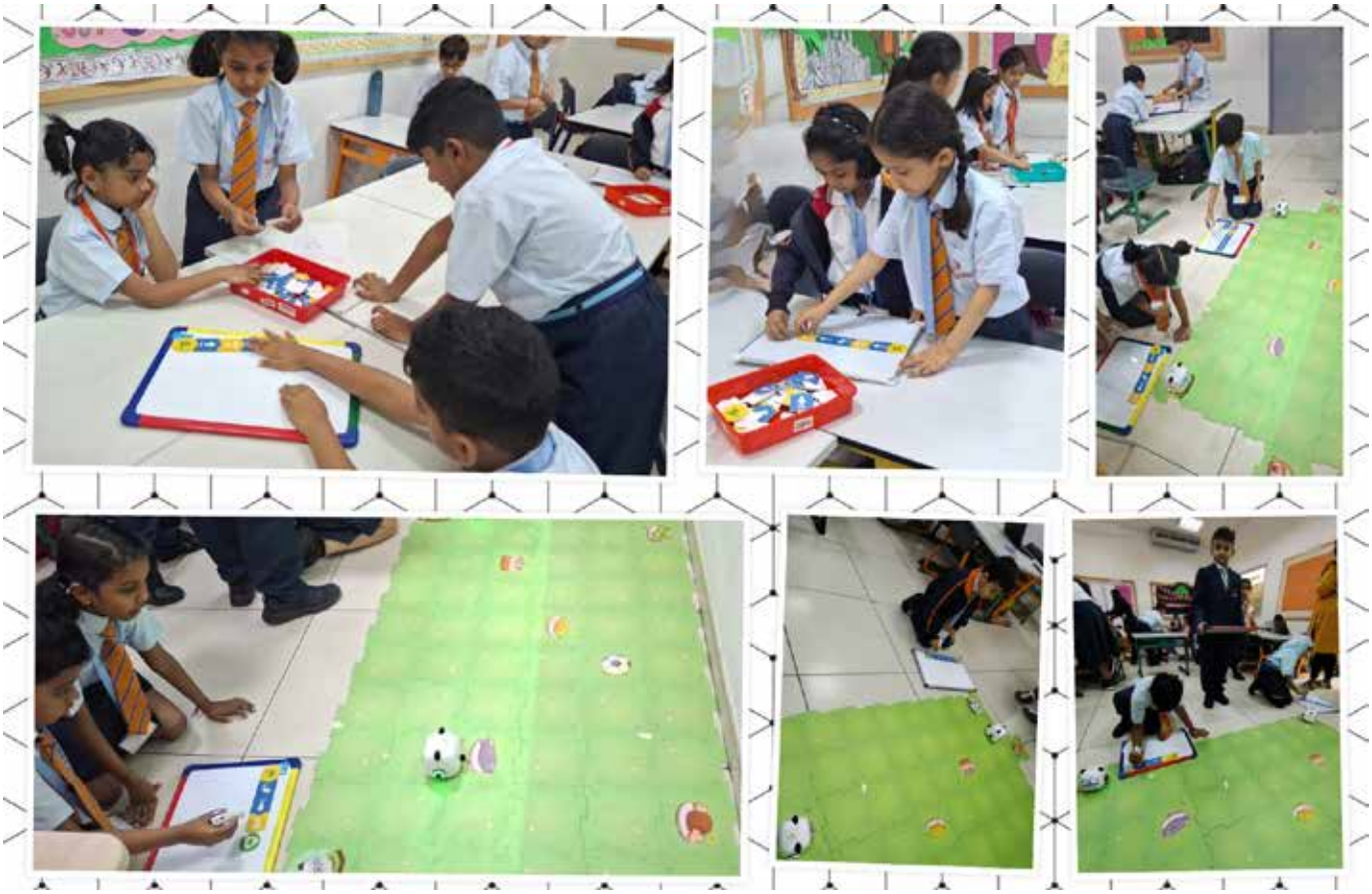
Students demonstrated effective teamwork by communicating and cooperating with their peers while gaining an understanding of the concepts of stability, balance, and height during the task. They used problem-solving skills to determine the best ways to build a sturdy and stable pyramid, considering various techniques for stacking and arranging the materials. In addition, students designed and built a shaking simulator to test the pyramid's stability, evaluating how well the structure held up under different conditions. Through this hands-on process, they applied their knowledge of engineering principles, made adjustments to their designs, and tested their results, ultimately gaining a deeper understanding of how balance and stability are crucial in constructing durable structures.

MTINY - THE GAME CHALLENGE

Students engaged in a hands-on coding activity where they programmed a bot to execute a series of algorithmic movements. By strategically using motion and repeat code blocks, they created logical sequences to guide the bot across a designated mat. As the bot navigated to various predetermined destinations, students encountered math word problems at each stop.

In the final stage of the activity, students applied their mathematical understanding of place value, face value, and expanded form to solve the math word problems. They also used this knowledge to accurately calculate points based on the bot's actions and outcomes.

This integration of coding and math highlighted their ability to connect concepts across subjects and apply them in a practical, problem-solving context.



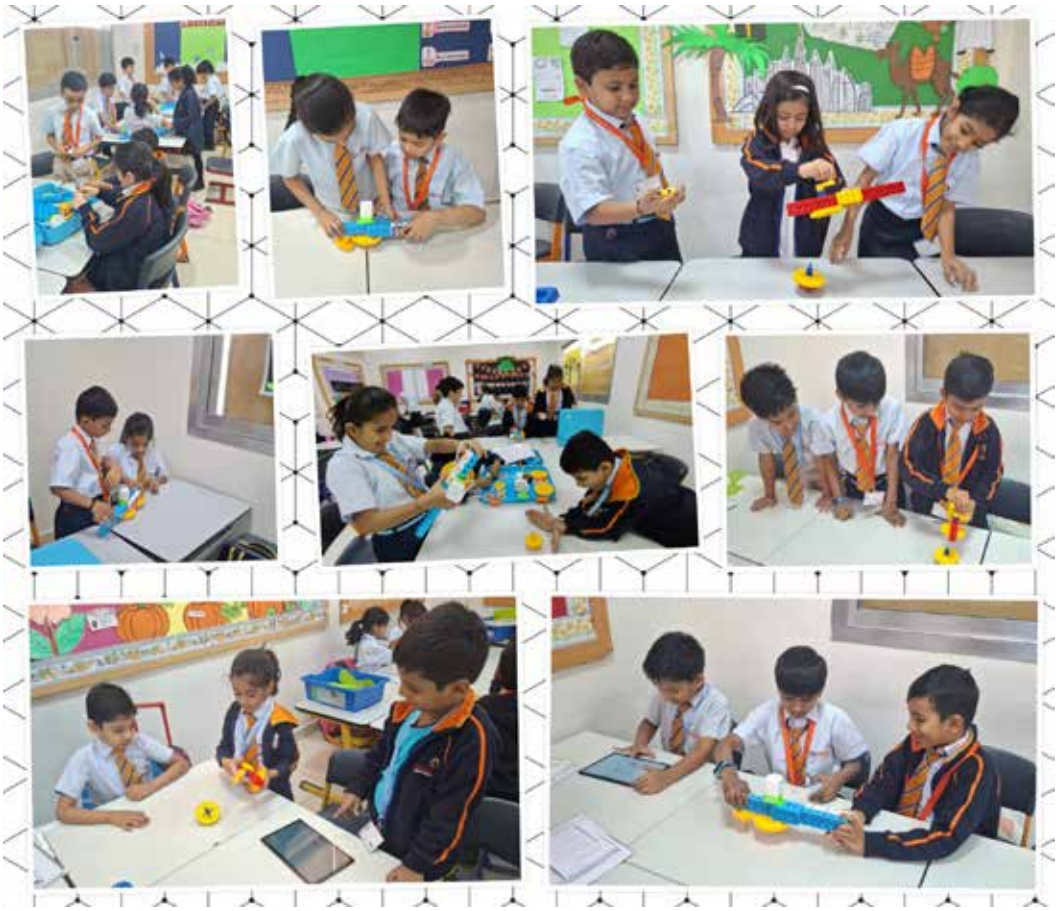
ENGINEERING AND DESIGNING PROCESS - SPINNING TOP LAUNCHER

Our students had an exciting, hands-on STEM activity, using motors and sensors, where they designed and built a creative launcher to spin a top.

Once their launchers were ready, each group showcased their design, clearly explaining how the motor and sensor worked together to make the top spin. They carefully observed and recorded how long each top continued spinning before coming to a stop.

To wrap up the activity, students analyzed the spinning time using their understanding of even and odd numbers to determine which gear combination resulted in the longest spin.

They were excited to see how math and science worked together in such a fun and meaningful way!



ECO PAPER ENGINEERING

Turning waste into wonder, students embarked on a creative journey to explore the process of paper recycling by crafting handmade greeting cards from used chart papers. With simple tools like water, containers, skewer sticks, LEGO bricks, and aluminium foil, they blended and molded pulp, pressed it into frames built from LEGO Community Starter, and set their creations to dry under the sun. Their colorful cards reflected both imagination and purpose. Throughout the activity, they engaged in thoughtful collaboration, experimented with eco-friendly design, and experienced how innovation and teamwork can turn everyday materials into something purposeful and inspiring.

NATURE DETECTIVES

Curiosity led our little explorers from Grade 3 on a nature detective mission as they ventured into the school garden and investigated the world of living and non-living things. Armed with checklists and magnifying glasses, students observed their surroundings closely and carefully sorted their findings into living, non-living, and once-living categories based on their characteristics. Back in the classroom, they collaborated to present their discoveries through neatly organized column charts on the board. The excitement continued as they folded, shaped, and decorated paper to create origami models of living organisms, showcasing features like movement, sensing, and growth—blending science with creativity in a hands-on, joyful learning experience.

PAPER PILOTS

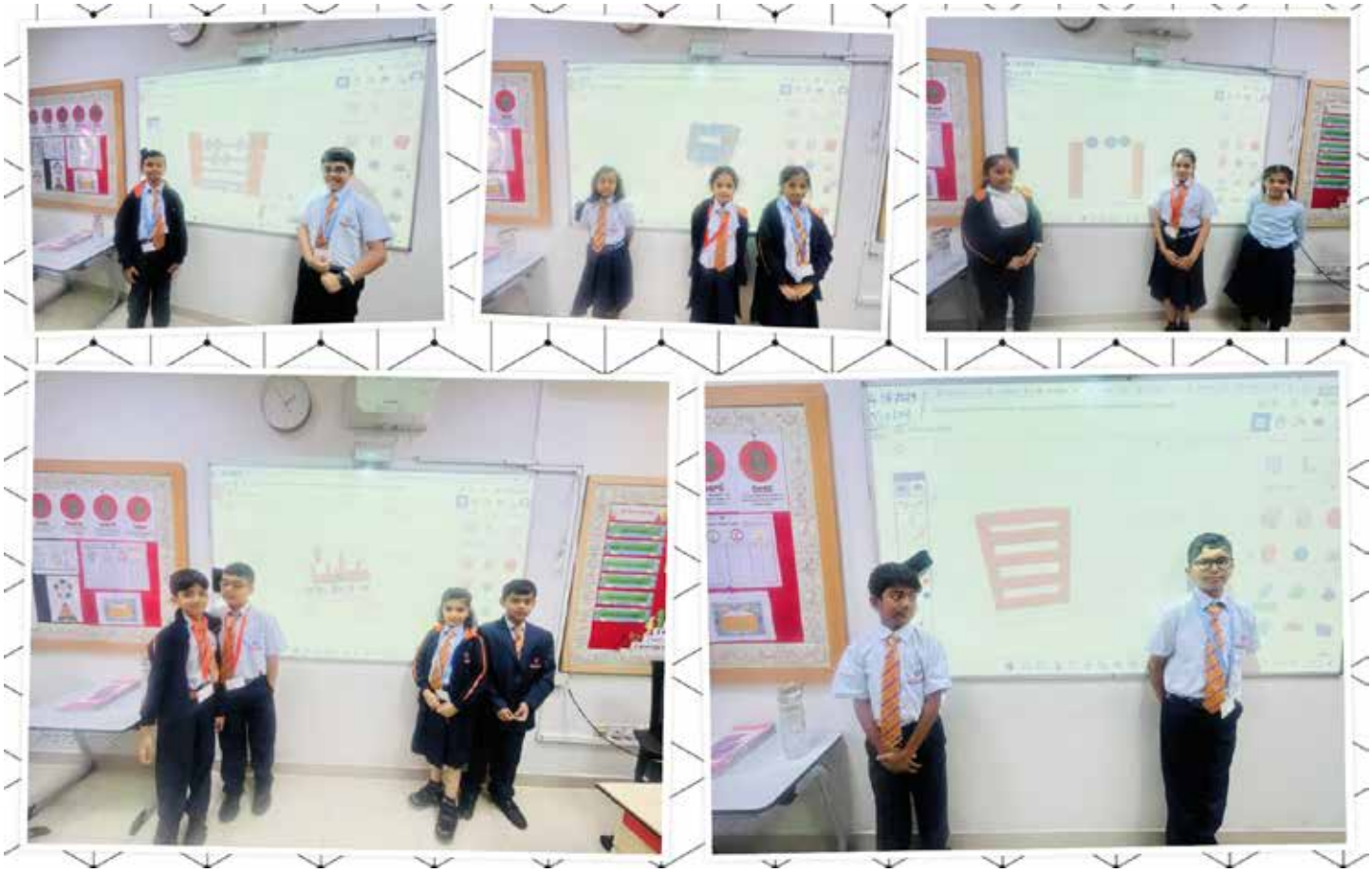
Fueled by imagination and teamwork, students took flight into the world of engineering by designing paper planes and crafting a functional launcher using LEGO bricks, rubber bands, and paperclips. After launching their creations outdoors, they measured the flight distances, observed what impacted performance, and fine-tuned their designs for better results. They used simple resources like paper sheets, LEGO community starter kits, and rubber band, and discovered how motion, force, and design choices affect flight. Through testing, collaboration, and creative problem-solving, they experienced the thrill of turning everyday materials into flying inventions—learning by doing and soaring with curiosity.

RUBBER BAND CAR

Grade 4 students recently took part in an exciting STREAM activity where they designed and built rubber band-powered cars using LEGO Wedo 1.0 and rubber bands. Through this hands-on project, students explored key science concepts such as energy, motion, and force while developing teamwork and problem-solving skills. Engineering and design principles were applied to create functional model cars, demonstrating both creativity and critical thinking. This task helped them connect the ideas to real-world mechanics, culminating in a fun class competition to see which car could travel the farthest. It was a fun and educational experience that showcased their innovation and collaboration!

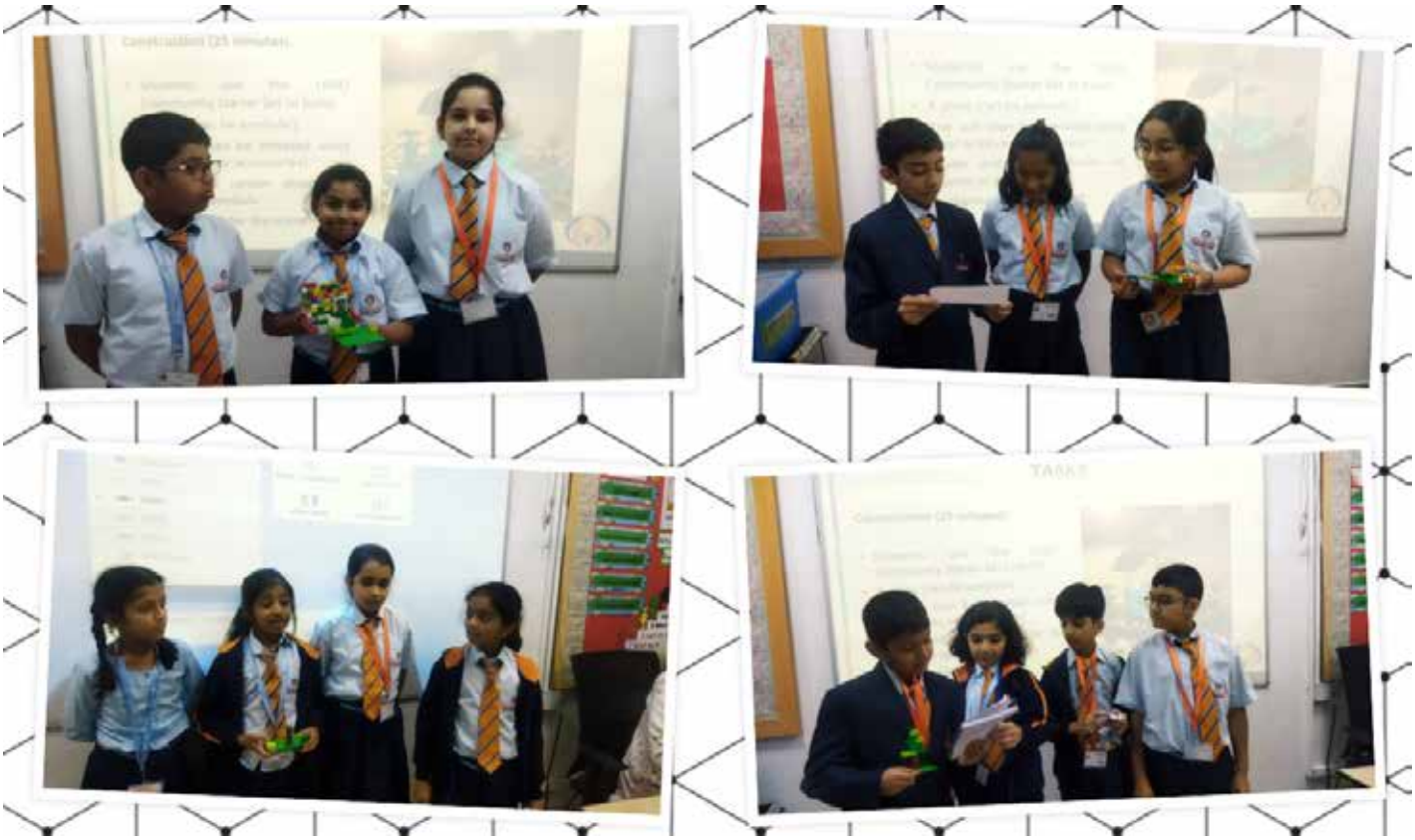
TINKER PLACE VALUE

Grade 4 students explored large numbers through a blend of mathematics and technology! They learned to understand and differentiate between the Indian and International place value systems, gaining confidence in reading and representing large numbers in both formats. To make learning even more interactive, students used Tinkercad, a 3D design tool, to create digital models of an abacus that visually represents place values. This activity not only deepened their math skills but also introduced them to basic digital modeling—bridging traditional concepts with modern tech in a fun and creative way!



LIGHTS, CAMERA...PHOTOSYNTHESIS!

Our Grade 4 students recently brought science to life through an exciting blend of creativity and technology! As part of their science unit, students explored the process of photosynthesis, using key scientific vocabulary to describe how plants make their food. Taking their learning a step further, they worked in teams to build LEGO models representing each stage of the cycle and then used stop motion animation to create short videos that told the story of photosynthesis. This hands-on project not only reinforced their understanding of the science concept but also boosted their digital literacy, teamwork, and communication skills. It was a wonderful example of learning through imagination, collaboration, and technology!

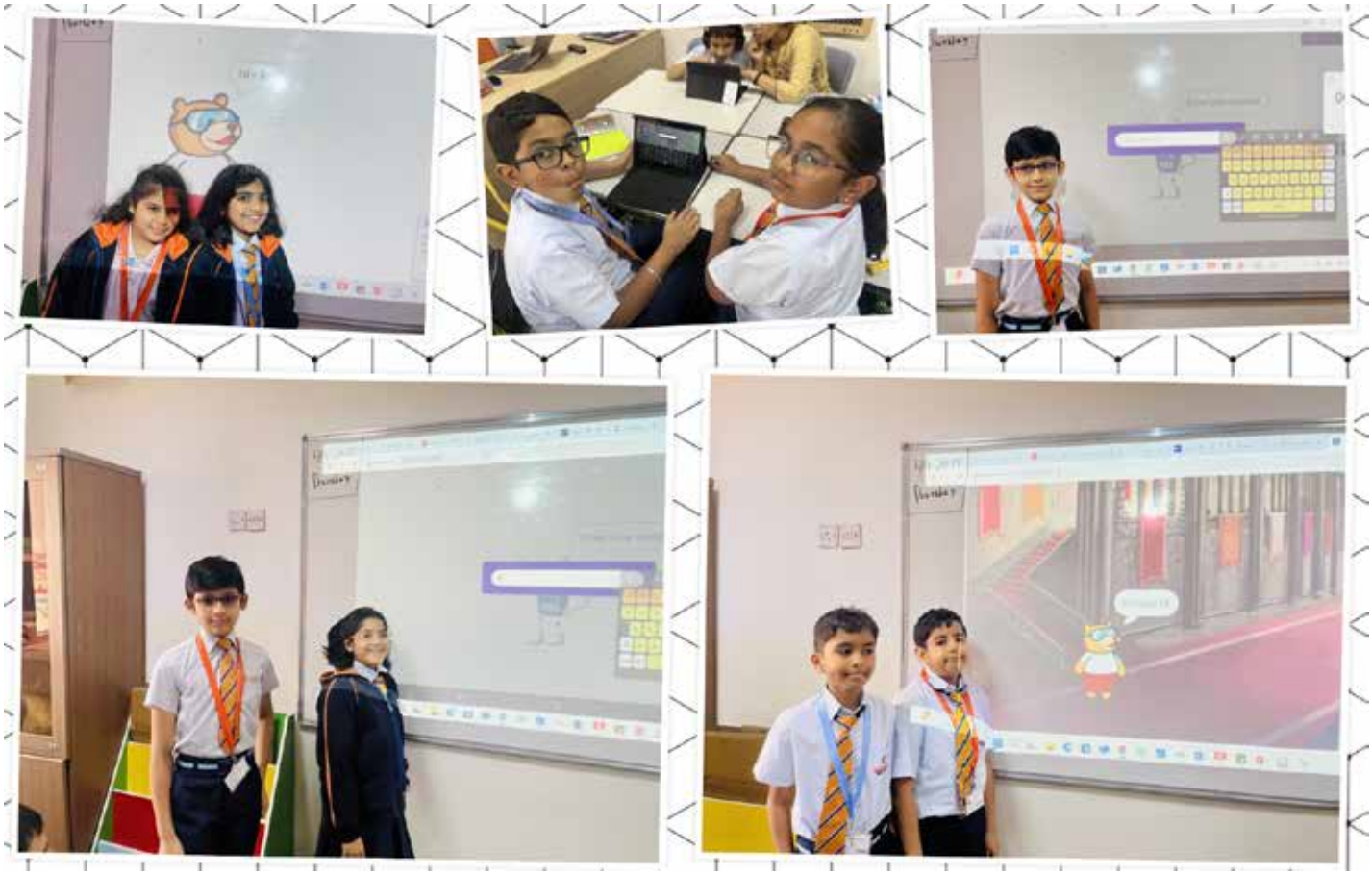


ENGINEERING PAPER BAG

Our Grade 5 students explored the exciting world of structural engineering through a hands-on paper bag challenge. They learned about the principles of material strength and how engineers solve real-world problems using creative thinking and teamwork. Working in small groups, students used only a newspaper to design and build strong, functional paper bags. Through this activity, they not only applied engineering and design concepts but also discovered the importance of sustainable packaging and environmental responsibility. It was inspiring to see their innovation, collaboration, and enthusiasm throughout the project!

ROMAN CALCULATOR

In an exciting blend of history and technology, Grade 5 students dove into the world of Roman numerals and basic programming. They learned how to read and write Roman numerals, then took their skills to the next level by using PictoBlox, a block-based coding platform, to build a simple calculator that converts between Roman and modern number formats. This engaging activity helped students develop logical reasoning, problem-solving skills, and a deeper appreciation for both ancient number systems and modern technology. It was a fun and enriching experience that brought math and coding together in a meaningful way!



SOIL ANIMATION

Students explored soil layers through observation, storytelling, and the use of technology. They learned about different types of soil, their properties, and how the environment affects them. Using this knowledge, students designed and wrote creative stories centered around soil and its importance in nature. To bring their ideas to life, they used LEGO Community Starter Kits and stop motion animation to create short animated movies showcasing what they learned. This hands-on, cross-curricular project helped students demonstrate their understanding in fun and imaginative ways!

MECHANICAL HAND

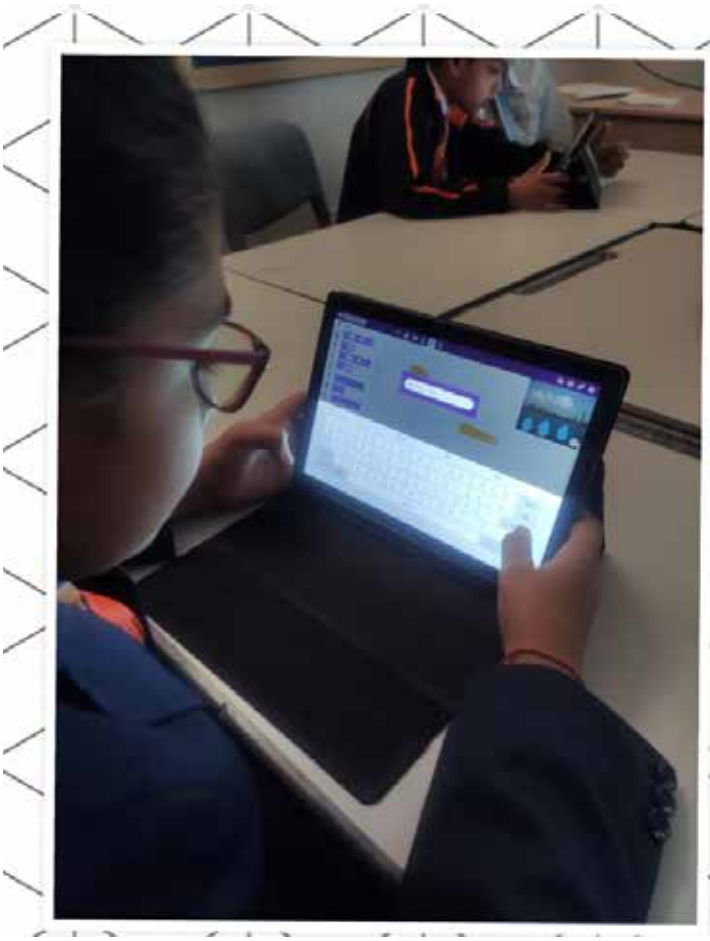
This task was a fascinating world of robotics and prosthetics, to learn the mechanics of hand movement. Using materials like cardboard, thread, straws, and tape, they applied engineering principles to design and construct their own working robotic hands. Through this creative, hands-on project, students developed important problem-solving and teamwork skills while also gaining insight into the real-world applications of robotics in healthcare. It was inspiring to see their innovation and collaboration come to life—one finger at a time!

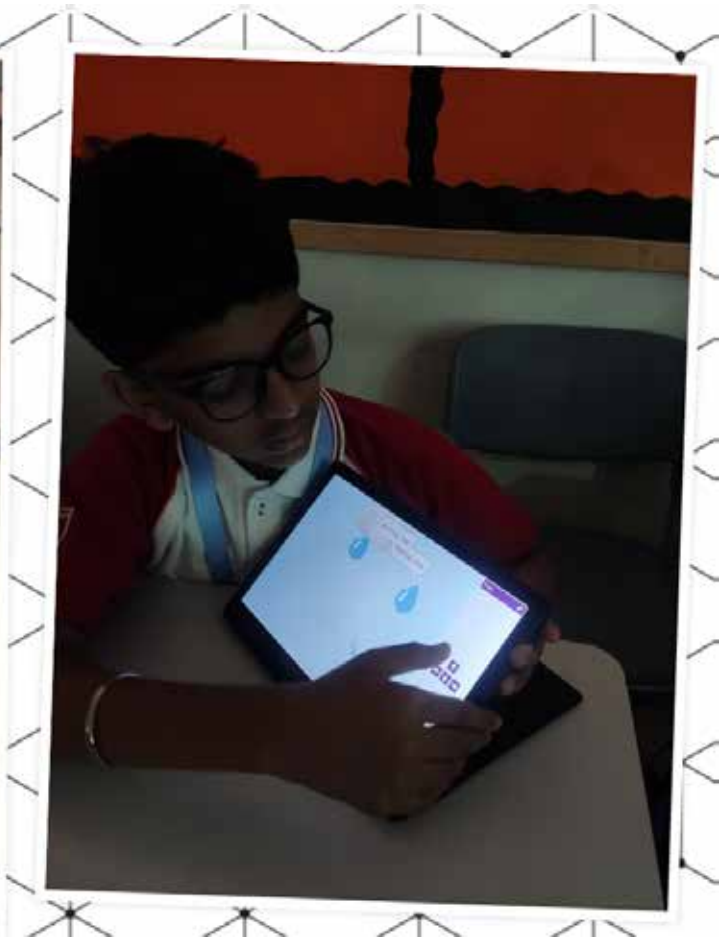
MEASURING DISTANCE WITH LEGO SPIKE PRIME

Collaboration and cross-curricular links with science, maths, and robotics are an exciting exploration of distance measurement and programming. They learned to understand and apply the SI units of distance (meters and centimeters) in real-world contexts. Using LEGO Spike Prime sensors, students measured and recorded distances with impressive accuracy on the FLL Challenge Mat. They also practiced estimation and comparison skills and developed their programming abilities to control robotic movement. This hands-on experience gave students a deeper appreciation of how measurement, technology, and coding come together in STEM learning!

SIMULATING EVAPORATION VS STEAMING

Using PictoBlox, students relate the difference between evaporation and steaming through interactive coding. By programming sprites to move, reducing their size slowly for evaporation and rapidly for steaming, students visualized how particle movement varies with temperature. This simulation included temperature changes triggered by keyboard input. This hands-on activity strengthens understanding of physical science concepts using block-based coding. It encourages critical thinking and helps students connect abstract ideas to real-world phenomena, making science both engaging and accessible. PictoBlox turns everyday processes into creative, animated learning experiences through STEM.



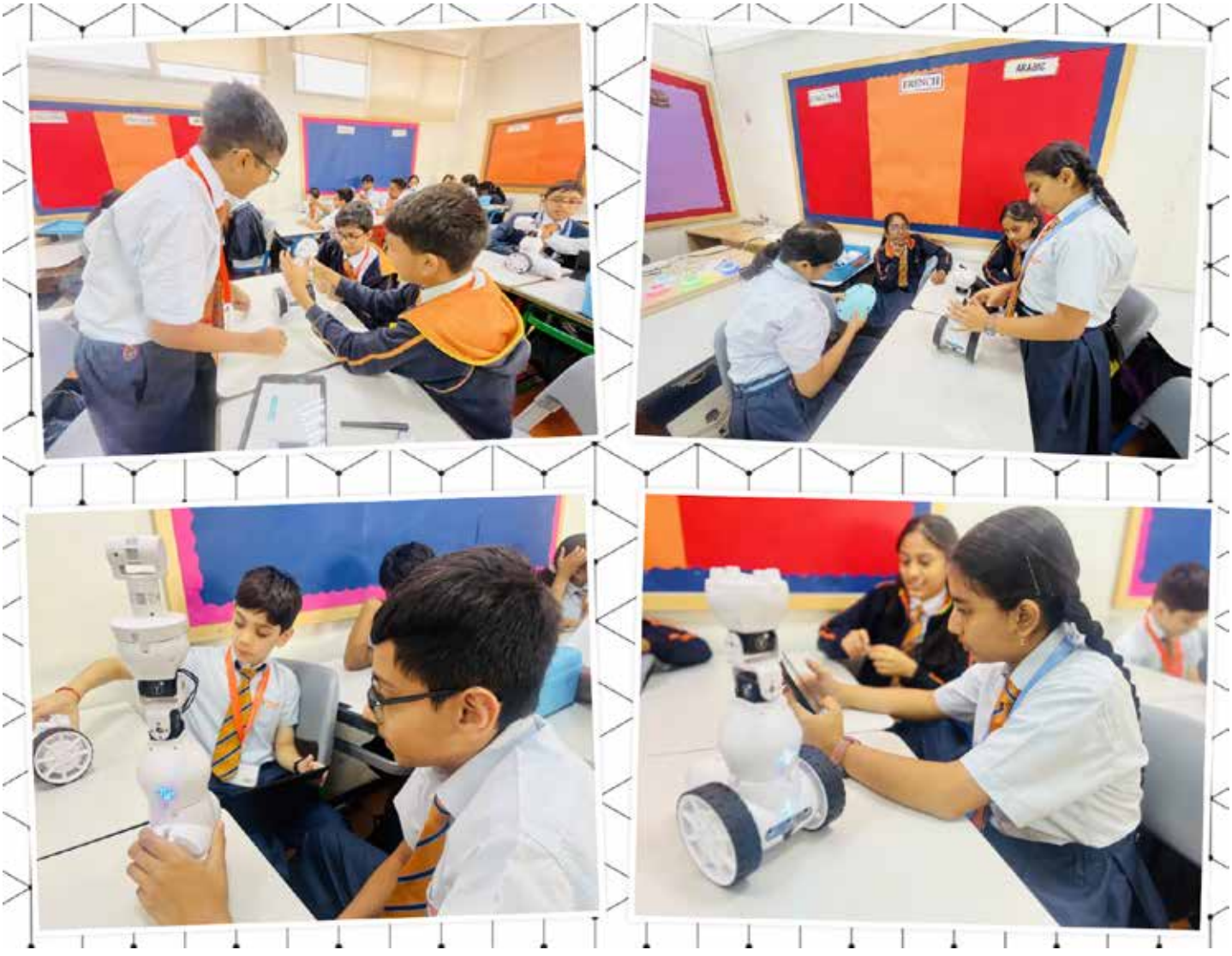


TALLEST TOWER CHALLENGE

Our Grade 7 students became young engineers as they tackled a fun and challenging activity—designing and building towers using only newspaper and tape! Through this project, they explored structural stability, load distribution, and applied core engineering and design principles. Working in teams, students developed strong problem-solving and collaboration skills, while using their creativity to construct the tallest and strongest towers possible. It was a fantastic way to connect classroom learning with real-world engineering concepts!

INTRODUCTION TO FABLE ROBOTICS

Grade 7 students have been diving into the world of robotics through hands-on learning with the Fable modular robotic system. They explored the components and capabilities of the kit, then built their own simple robotic models. Using the Fable Blockly programming environment, students programmed basic movements and tested their creations in action. Along the way, they discussed how robots are used in everyday life and various industries, making strong connections between classroom learning and real-world technology. It's been an exciting journey into the future of innovation!



SPEED CAMERA

Students of Grade 7 designed a speed camera using Lego Spike Prime to simulate how vehicles are monitored for speed. By using the distance sensor. It measures how quickly an object moves between two points and displays the speed on the hub. If the speed exceeds a preset limit, a warning symbol appears as an advancement to their activity. Students present their models to the class while explaining how the model worked and the programming logic used. This activity introduces students to real-life applications of robotics, motion, and basic physics. It also helps them understand how programming and sensors can solve everyday problems like traffic monitoring.

CARDBOARD CHAIR CHALLENGE

Our Grade 8 students took on a real-world engineering challenge—designing and building a functional chair using only cardboard and tape! They explored the basic principles of structural engineering and applied the engineering design process to bring their ideas to life. Working in teams, students brainstormed, built prototypes, and tested their chairs for strength and stability. This hands-on project promoted creativity, collaboration, and problem-solving, while showing how simple materials can be transformed through smart design and teamwork.

PRESSURE LIFT

Mechanical engineering and pneumatics were the tasks during the session. Using the LEGO Simple and Powered Machine and Pneumatic Set, they built their scissor lifts and tested their creations. Students learned about the different parts of the pneumatic system, such as the piston, cylinder, valve, tubes, and manometer, and saw firsthand how these components work together. They also studied the behavior of gases under pressure to understand how air power can move objects. This hands-on project not only deepened their knowledge of engineering principles but also gave them the chance to apply critical thinking and problem-solving skills in real-world scenarios.

EXPONENTIAL SPEED CHALLENGE

Understanding and application of exponents in a real-world context! Spike Prime was the resource to explore mathematical operations through programming. They wrote programs that incorporated exponential functions to control robotic movements and observed how exponential changes affected speed and performance. This hands-on activity helped students see the connection between mathematics and technology while enhancing their programming and problem-solving skills. It was a fantastic way to blend math concepts with robotics, engagingly and practically.