



مدرسة امباسادور  
AMBASSADOR SCHOOL  
INSPIRE INQUIRE INNOVATE



**STREAMING FORWARD**

**November & December 2023**

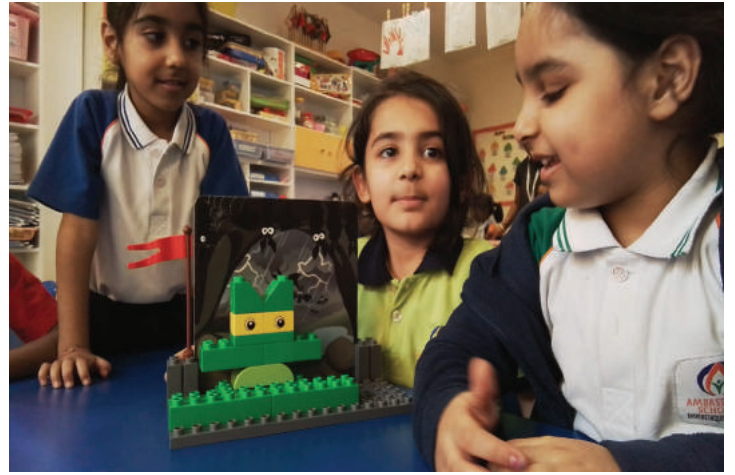
## STUNNING BRIDGES

The students delved into the concepts of building robust lego structures comprehending how to reinforce Lego bridges. Applying this knowledge, they successfully built sturdy bridges with twin pillars that passed strength tests, showcasing their improved understanding of structural integrity.



## ALTERNATIVE SETTING

Students explored the story of Three Billy Goats Gruff with lots of fun. They recognized the original grassland setting with its characters, including the antagonist. Encouraged to rethink the story in different settings like outer space or a castle, they pondered new villains and story alterations. They questioned how the narrative might change, contemplating the presence of a river. Sparking their creativity, they crafted their own antagonists and joyfully presented their adapted tales to both peers and teachers, reveling in the excitement of imaginative storytelling.



## THREE BILLY GOATS IN SPACE

Students delved into the realm of storytelling, inspired by the narrative of Three Billy Goats Gruff. This session deepened their understanding of storytelling structures and techniques. They embarked on a journey of improvisation, crafting diverse tales by altering the background settings and introducing new characters. Through this exploration, they gained invaluable insights into the intricate art of crafting narratives, honing their storytelling skills. Engaging with their peers and teachers, the students reveled in the creative process, relishing the joy of sharing their imaginative stories and receiving feedback in this collaborative and enriching learning environment.



## A DIGITAL COMIC BOOK

The creative project was created by crafting a digital comic story of Three Billy Goats Gruff using the Lego Story Visualizer software. Leveraging the Lego Story Tales set, they meticulously captured scenes by taking pictures of their Lego creations. This hands-on activity not only allowed them to explore their storytelling skills but also integrated technology, enabling them to bring the classic tale to life through a dynamic and visually captivating digital comic. The combination of traditional storytelling elements and modern technology provided students with a unique and interactive learning experience.



# DIGITAL ADVENTURES: AN INTERACTIVE GRAPHIC NOVEL

Crafting a digital comic story of Three Billy Goats Gruff using the Lego Story Visualizer software, the creative project unfolded with students leveraging the Lego Story Tales set. They meticulously captured scenes by taking pictures of their Lego creations. This hands-on activity not only allowed them to explore their storytelling skills but also integrated technology, enabling them to bring the classic tale to life through a dynamic and visually captivating digital comic. The combination of traditional storytelling elements and modern technology provided students with a unique and interactive learning experience.



## THE POWER OF WIND

Differentiating renewable and non-renewable resources, with a specific emphasis on wind energy's sustainability was an interesting approach. They constructed a wind turbine model using an Early Simple Machine set, showcasing the role of gears in increasing rotational speed for electricity generation. Students revisited the six simple machines they previously learned about. They documented the entire process through photos and created presentations using the Story Visualizer App. Finally, they presented their projects to peers, strengthening their understanding and communication skills. This comprehensive approach fused theory and hands-on learning, equipping students with practical knowledge about wind energy and simple machines.



# GREEN ARCHITECTURAL CITIES

Green architecture, observing cities evolve from tree-centric landscapes to sustainable designs. Students reexamined renewable energy concepts prevalent in eco-friendly buildings. Meeting Kate, an eco-architect, they brainstormed greener approaches for Dubai's structures. Collaboratively, they aided Kate in crafting an eco-model community. This practical experience provided a comprehensive insight into sustainability, highlighting the significance of eco-conscious architectural practices.





# PATTERNS USING SUBTRACTION

Reinforcing subtraction skills through creative designs on Lego base boards was interesting. The session commenced with a warm-up exercise, fostering communication and team-building. Each team selected a representative to draw a picture given on the board, guided solely by their teammates' instructions. Points were awarded to the team with the most accurate representation. Students translated subtraction solutions into patterns on tablets and used Lego pieces to craft various shapes like snails, houses, and robots. The hands-on math experience added an element of fun to the learning process.



## A GAMIFIED APPROACH TO MATH

Students embraced a gamified method to grasp mathematical concepts, employing the interactive PlayShifu Plugo kit. Engaging in a mission across various planets through the AstroStrike game, they destroyed asteroids by solving math problems. Progressing through levels, the students advanced as they successfully tackled more mathematical challenges. The incorporation of play not only made learning enjoyable but also proved to be an effective and exciting approach to mastering math skills.



# EXPLORE AND EDUCATE: A PLAYFUL LEARNING EXPERIENCE

Continuing from last week's activity, students solidified their math skills and honed essential abilities like concentration, teamwork, and critical thinking through interactive play. They embraced a gamified method to grasp mathematical concepts using the PlayShifu Plugo kit. Engaging in a mission across various planets through the AstroStrike game, they destroyed asteroids by solving math problems. Progressing through levels, the students advanced as they successfully tackled more mathematical challenges. The incorporation of play not only made learning enjoyable but also proved to be an effective and exciting approach to mastering math skills, while enhancing vital cognitive and collaborative skills.



# AUTOPILOT

Reinforcing the principles of gears and their applications in altering direction and enhancing speed was a task. The primary assignment involved designing and building a car with the capability to halt when an obstacle obstructed its path. To document their creative journey in crafting the obstacle-detection car, students created a storyboard utilizing the Story Visualizer app. This activity fostered a deeper understanding of gear mechanisms and encouraged creative problem-solving skills in the context of building a car with obstacle detection.



## OSCILLATING FAN

Investigation into the mechanics governing oscillating fans was fun learning. A video was used to demonstrate the fan's operation and identification of the involved simple machines. The hands-on activity, attempting to replicate the fan's mechanism, stood as the highlight. Although the task remains ongoing into the next session, it presents an avenue for deeper exploration. The students' dedication to unraveling the complexities of this task mirrors their commitment to practical learning and problem-solving in science and engineering. Their enthusiasm for these immersive experiences serves as a truly inspiring demonstration of their passion for learning.



## ROTATING FLYING CAR

WhalesBot U10 is used to construct a rotating flying car model, mimicking the popular amusement park attraction of swinging chairs. They observed that objects moving in a circular motion gradually drift away from the center, a phenomenon accentuated by higher rotation speeds. The model incorporated an Infrared sensor, a controller module, and an adjustable speed motor to simulate this effect. Learning objectives included understanding circular motion principles and gaining hands-on experience with robotics and technology.



## INTELLIGENT BARRIER GATE

Intelligent barrier gates are a common sight at parking entrances, equipped with sensors, controllers, and actuators that manage their opening and closing functions. These gates can be operated through voice commands or card recognition systems. During this week's research, students delved into the history and operation of intelligent barrier gates, gaining insights into their evolution. Following provided instructions, they constructed a voice-controlled barrier gate, enhancing their understanding of gears and motors in the process. This hands-on activity provided valuable insights into the mechanics behind these systems.



## THE WORLD OF CARS

In this week's activity, students delved into the fascinating realm of automobiles. The class commenced with an educational video delving into the rich history of cars, exploring their inventions and evolution over time. Transitioning to the main activity, students followed building instructions and successfully constructed a car featuring a deceleration mechanism. This hands-on experience not only enhanced their spatial skills but also fostered teamwork and deepened their technical knowledge. The students thoroughly enjoyed this engaging and educational exploration into the world of automobiles.





## A SEED'S TALE

Students embarked on a captivating educational journey using the LEGO Community Starter kit and the Stop Motion Studio application to illustrate the life cycle of a seed. The primary goal was to enhance students' understanding of plant life cycles while promoting creativity, collaboration, and technological literacy.

Students were introduced to the life cycle of a seed through visual aids. They then utilized the LEGO Community Starter kit to construct miniature scenes representing each stage of the seed's growth. Equipped with tablets and the Stop Motion Studio app, students captured successive images of their LEGO creations to produce a stop-motion animation.

The project not only enriched students' scientific knowledge but also fostered critical thinking, teamwork, and digital art skills.



## SEED DISPERSAL ROBOT

Students recently delved into the world of engineering and innovation by designing and building an automatic seed dispersal robot using the LEGO WeDo 2.0 kit.

The primary objective was to deepen students' understanding of seed dispersal mechanisms in nature. They applied this knowledge to design and construct their own automated seed dispersal machines. Students researched about various seed dispersal methods found in nature. They then utilized the LEGO WeDo 2.0 kits' motors and sensors, to build the prototype of an automatic seed dispersal robot. The robot was finally programmed to disperse the seeds in the form of lego bricks.

This hands-on project aimed to blend science, technology, engineering, and mathematics concepts, while fostering creativity and problem-solving skills.

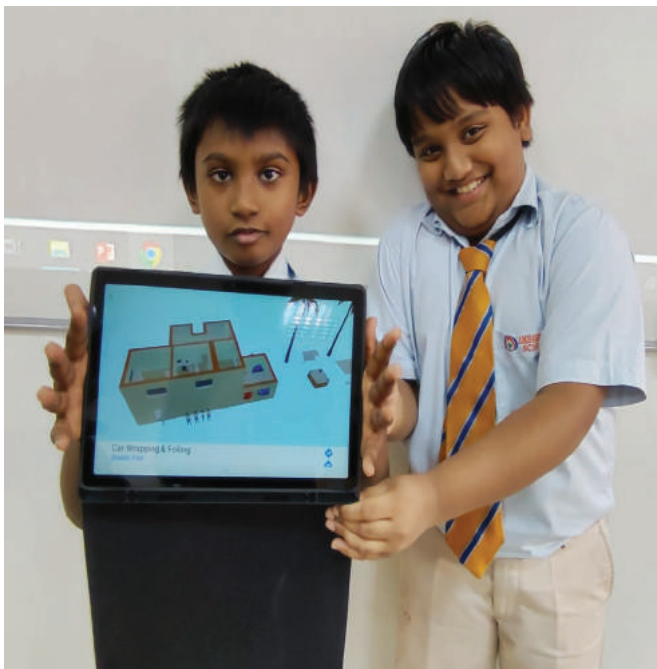


## INTRODUCTION TO FLOOR PLAN

In this engaging activity, students embarked on the exciting journey of creating floor plans for houses using the Floor Plan Creator application.

The primary objective of the project was to enable students to understand the fundamental aspects of architectural design, spatial planning, and geometry by applying their knowledge to real-world scenarios. Students were introduced to basic architectural principles through videos. They were then familiarized with the FloorPlanCreator app, which allowed them to experiment with creating rooms, arranging furniture, and visualizing spaces in a 2D format. Students successfully created and presented the 3D view of a variety of floor plans, showcasing their understanding of architectural principles and creative thinking.

The project encouraged collaborative learning, with students working in pairs to brainstorm ideas and solve design challenges while improving their technological skills.

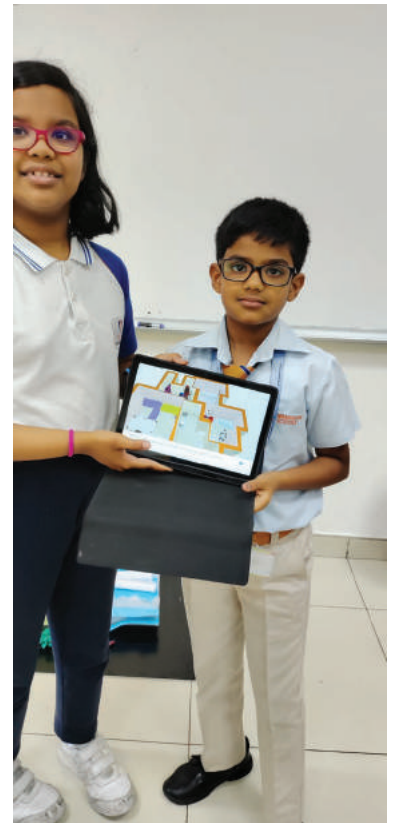


## RESIDENTIAL FLOOR PLAN

After getting introduced to the Floor Plan Creator application last week, students took up the challenge to build an actual residential floor plan.

The primary objective was to familiarize students with the basic layout and functionalities of common residential spaces, including a living room, bedroom, kitchen, bathroom, and garage. Through the Floor Plan Creator app, students translated their ideas into digital floor plans, fostering an understanding of architectural principles.

The digital floor plans showcased a variety of imaginative layouts, reflecting the creativity and attention to detail of the young designers. The project not only enriched their understanding of architectural concepts but also introduced them to the exciting intersection of technology and design.



## CHRISTMAS STORY ANIMATION

Students showcased their creativity and technological skills by crafting a delightful Christmas story animation using the LEGO Community Starter Kit and Stop Motion Studio application.

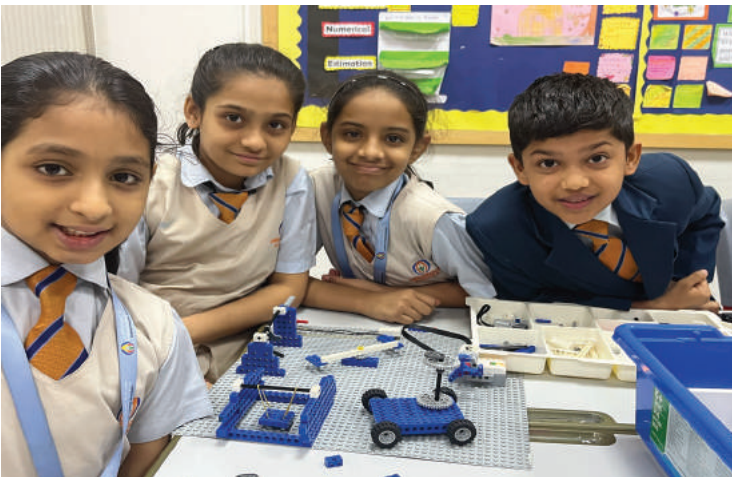
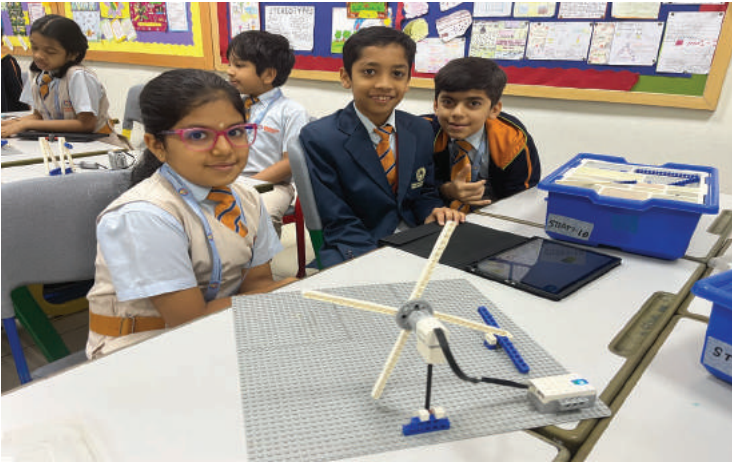
Through collaborative efforts, they constructed the festive scenes and animated characters using the LEGO bricks and mini figures. Then they brought the holiday tale to life frame by frame, using the Stop Motion Studio application. The end result was a charming animated Christmas story that reflected the joy and spirit of the season, showcasing the students' newfound skills in a festive and engaging manner.

This hands-on project not only kindled their imaginations, but also helped them to improve their stop-motion animation skills, blending storytelling with technology.



## PARK OF SIMPLE MACHINES

The design and construction of a fantastic park dedicated to exploring the wonders of simple machines using Lego and other resources. This initiative aimed to not only engage participants in a creative and hands-on experience but also to deepen their understanding of the applications of simple machines in our daily lives. In this activity, students in groups designed, built, and tested various rides for their parks using simple machines such as a pulley, lever, wheel and axle, screw, and so on, and then showcased them to other groups, allowing the teams to learn from one another and excel in creativity and critical thinking.



## MY ANIMATION MOVIE

The primary objective of this activity was to combine the joy of reading with the creativity of storytelling and technology. It aimed to enhance students' reading comprehension, foster their storytelling abilities, and develop their digital literacy skills.

Each group of students was tasked with selecting a story from a book or online source. After comprehending the story, students created storyboards to plan the visual elements of their animated movie. This involved identifying key scenes, characters, and dialogues from the story.

Students used stop-motion animation application to bring their characters and scenes to life. They applied principles of timing, movement, and visual storytelling to create a compelling narrative.

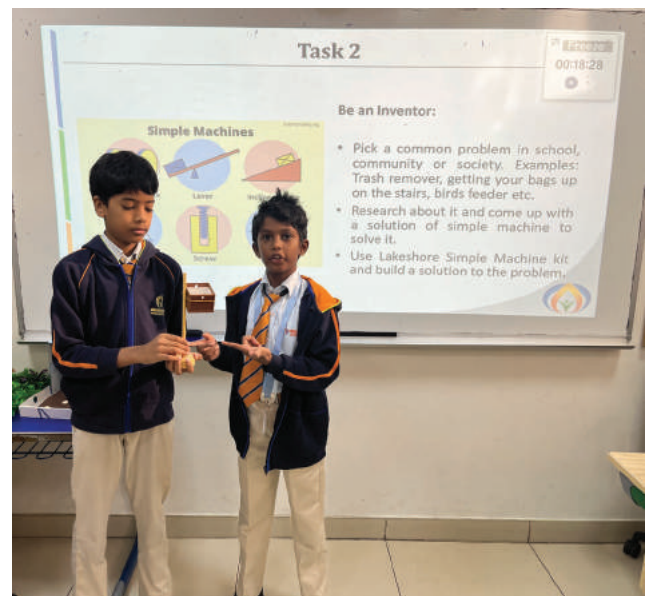
This activity demonstrated that education can be both engaging and transformative when students are given the opportunity to be creative and expressive.



## INNOVATION WITH SIMPLE MACHINES!

We are thrilled to share the incredible results of a recent activity that engaged our students in an inspiring journey of innovation and engineering. Teams of budding engineers were tasked with designing and building innovative machines using the Lakeshore Simple Machine Set. The objective was twofold: to identify the six simple machines within complex systems and to apply the engineering design process to invent simple machines to solve specific problems. One of the most exciting aspects of this activity was witnessing the students apply the engineering design process to invent simple machines tailored to address specific problems. From creating devices to lift heavy objects with ease to designing systems to aid mobility, each team brought a unique perspective to problem-solving.

This activity wasn't just about machines; it was about nurturing a passion for engineering and instilling problem-solving skills that will serve our students well into the future





## INTRODUCTION TO TOONTASTIC 3D!

We are delighted to share the success of a recent and exciting activity that brought out the inner filmmakers in our students. Introducing the Toontastic 3D application, our students embarked on a creative journey to not only learn the ropes of movie-making but also to craft their own imaginative worlds. The culmination of this endeavor saw each student team presenting a fictional movie to their peers, resulting in an unforgettable experience filled with joy and appreciation.

Students, armed with the Toontastic 3D application, explored the various features such as characters, background, voice over, scripting etc. that facilitated the creation of their own animated movies. From choosing settings and characters to scripting dialogues and adding animations, they navigated the creative process with enthusiasm and curiosity. Every student had the opportunity to not only learn about the technical aspects of creating a movie but also to experience the satisfaction of seeing their ideas come to life on the screen. The supportive and positive reactions from their peers further boosted their confidence in expressing their creativity.

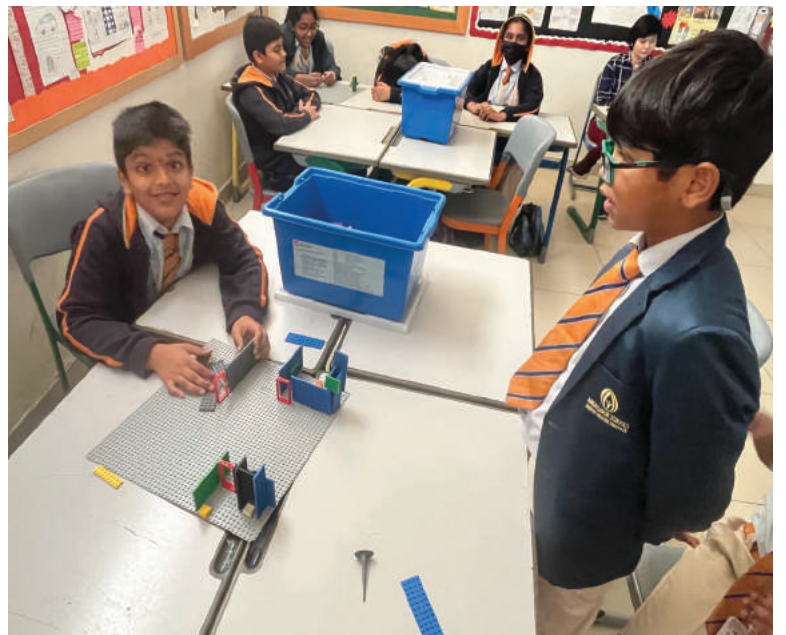


## CHRISTMAS MOVIE

As part of a special holiday project, our students delved into the art of stop motion animation to create enchanting Christmas tales. Armed with imagination, patience, and a sprinkle of holiday spirit, they transformed their ideas into animated stories that captured the essence of the season.

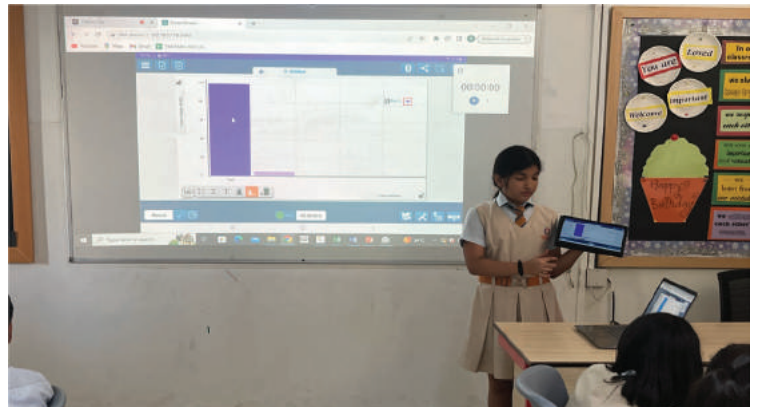
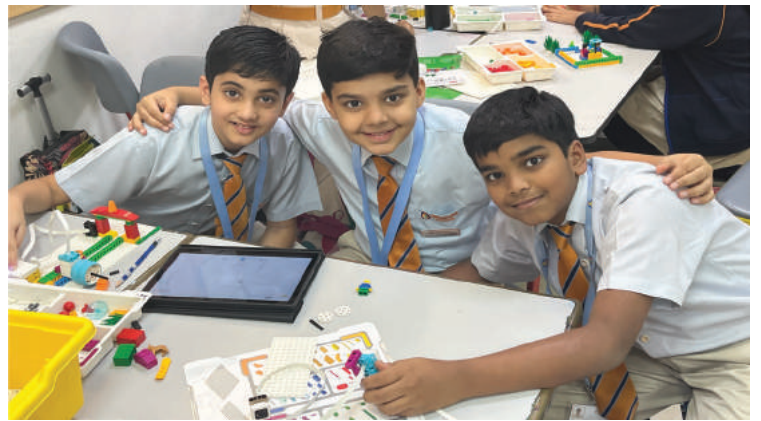
In the spirit of teamwork and creative collaboration, students worked together to craft holiday narratives. From brainstorming sessions to storyboarding and setting up scenes, each step was a collective effort, fostering a sense of unity and shared excitement for the project.

The integration of technology, particularly stop motion animation apps, allowed students to seamlessly blend traditional storytelling with modern tools. The combination of hands-on creativity and digital innovation resulted in animations that were not only visually delightful but also technically impressive.



## PERCENTAGE OF COLOURS!

The LEGO Spike Essential provided the perfect toolkit for the students to dive into the realms of robotics, coding, and creative problem-solving. With its color sensor capabilities, students were equipped to explore the percentage using color intensity. The color sensor allowed them to measure the percentage intensity of various colors, providing a hands-on experience in data collection and interpretation. To visually represent their findings, students then created bar graphs, transforming abstract data into a visual language that is both informative and accessible. Finally students were tasked with designing and building a café that delivers food based on a color code. Each color represented a specific dish or drink. The café not only showcased their technical skills in programming and building with LEGO Spike Essential but also highlighted their innovative thinking and ability to apply abstract concepts to practical, real-life situations.



## CREATING STORY WITH TOONTASTIC

The Toontastic 3D application served as the magical gateway for the students to explore the art of storytelling in a digital space. Its user-friendly interface empowered students to craft animated tales complete with characters, settings, and plotlines, fostering a deep appreciation for the narrative arts.

In teams, the students embarked on a thrilling journey of brainstorming, ideation, and collaboration. From fantastical adventures to heartwarming dramas, each team carefully crafted their unique stories using Toontastic 3D's versatile tools. The application's features allowed students to breathe life into their characters, set the stage for their narratives, and add a touch of animation magic.

Beyond the magic of animated storytelling, this activity provided a unique platform for students to develop confidence in public speaking. Presenting their stories before the class allowed them to articulate their ideas, share their creativity, and receive the applause and appreciation of their peers.



## MY SCHOOL CREATION!

In this activity student teams embarked on a mission to design and create new classroom innovations. In teams, students engaged in lively brainstorming sessions, identifying areas of improvement or enhancement within their classroom environment. From there, they translated their ideas into tangible creations using LEGO Spike Essentials, integrating coding and robotics to bring their visions to life.

Students created various machines or robots to clean the tables, present the content to students with weak eyes, entertain the students, and so on. After rigorous testing and fine-tuning, the teams proudly presented their creations before the class, demonstrating the power of creativity, collaboration, and technological exploration.



## FLL MASTERPIECE CHALLENGE

In the recent FIRST LEGO League (FLL) Masterpiece Explore Challenge 2023. The students of grade 5 were challenged to design, built, code and present a model on Arts integrated with technology. The students in teams selected a form of arts such as dance, music, yoga, Cinema, etc. and then built a model to represent the arts integrated with technology in an innovative and creative way.

Their designs ranged from inventive solutions for environmental sustainability to technological advancements aimed at enhancing accessibility. we eagerly anticipate more opportunities for them to continue exploring, designing, and coding as they grow into the future innovators and leaders of tomorrow.



## WALL BUMPING DRAG RACE

In this exciting project, students designed and constructed a wall-bumping drag race car using the LEGO Spike Prime robotics kit. A basic racing car using the Spike Prime kit was built. A pressure sensor was added at the front of the car. The sensor was programmed to stop the car and rotate it 180 degrees. Finally, the students geared up for the race. They started their car from the starting line and moved towards the wall. It was programmed to make a u-turn upon hitting the wall and come back to the starting line.

The project aimed to integrate robotics, engineering, and physics concepts while promoting creativity and problem-solving skills among the students.

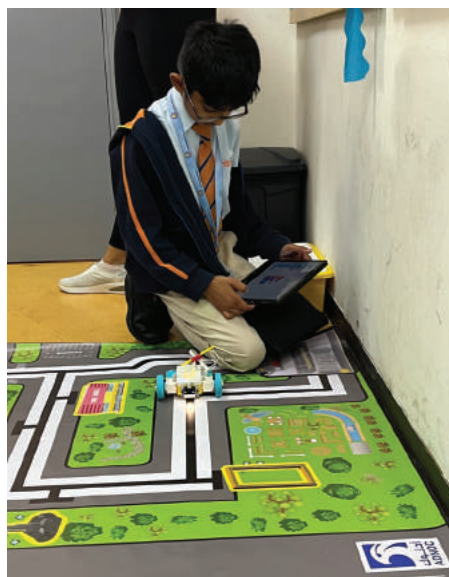


## FOLLOW THE LINE!

In this engaging project, students took charge of building and programming their very own LEGO robots, equipping them with color sensors to navigate and follow a line of a particular color. Students first delved into the mechanics of building their LEGO robots. The incorporation of color sensors added a dynamic element to their creations, setting the stage for a journey into the world of light reflection and color sensing.

Equipped with their color-sensor-equipped robots, students were challenged to follow a line of a particular color. This task not only required precise programming but also encouraged students to observe how the reflection of light differs across various surfaces and colors.

The classroom buzzed with excitement as the students set their robots in motion. The robots, each uniquely programmed, skillfully followed the colored lines, showcasing the successful integration of engineering and coding principles.



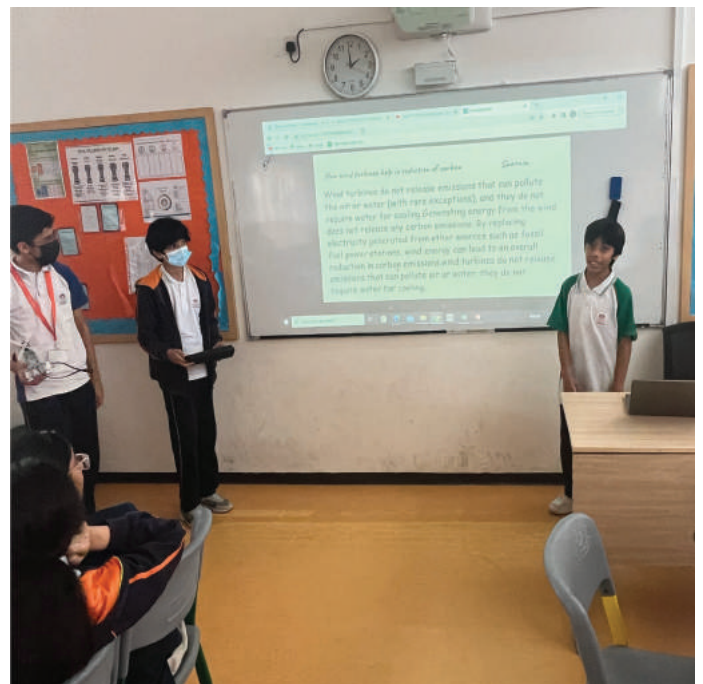


## ADNOC NET ZERO - BLUE SKY THINKING !

In response to the global call for action on climate change, our students eagerly embraced the opportunity to contribute their ideas toward achieving net zero emissions, aligning with the commendable mission in the UAE.

In an effort to instill a sense of environmental responsibility and sustainable thinking, the students were challenged to tackle the issue of carbon emissions within our school community. The goal was to encourage innovative solutions that could contribute to the broader mission of achieving net zero emissions in the UAE.

The range of proposed solutions was truly impressive. Students suggested initiatives such as implementing solar panels, promoting energy-efficient practices, introducing waste reduction campaigns, and even exploring sustainable transportation options. The level of creativity and thoughtful consideration demonstrated by our students underscored their dedication to finding holistic and impactful solutions.

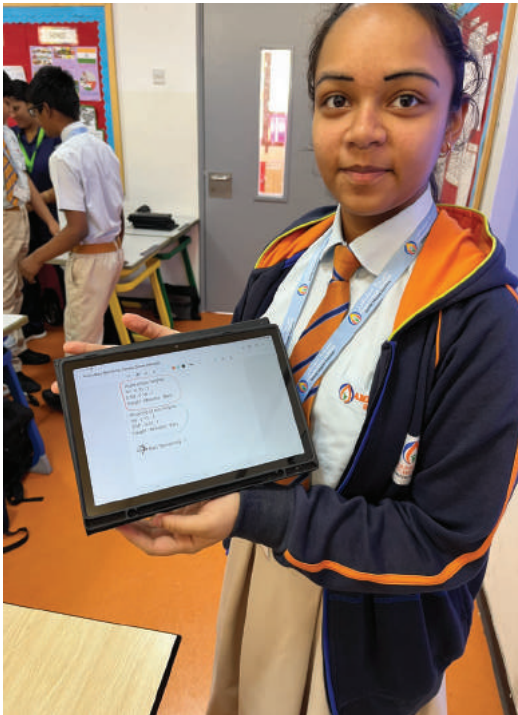


# DRONE FLIGHT WITH BATTERY LIFE!

We are delighted to share the exciting outcomes of a recent hands-on activity that combined mathematics with cutting-edge technology. Our students took to the skies, quite literally, as they explored the concept of percentages and their real-world applications through an engaging project involving drone flight time and battery life.

Equipped with drones and a curious spirit, the students set out to investigate the impact of battery life on the duration of drone flights. They recorded data on different battery levels and corresponding flight times, allowing them to visualize and analyze the relationship between the two variables.

Students engaged in robust data analysis to identify patterns and trends. They utilized mathematical modeling to express the relationship between battery life and flight time as a percentage, enhancing their understanding of percentages in a practical and meaningful context.



# ADNOC NET ZERO CHALLENGE - REAL WORLD IMPACT!

We are excited to share the incredible success of a recent initiative that empowered the students to become green innovators. Inspired by the ADNOC Net Zero Challenge, our students took on the task of designing and building practical solutions to reduce greenhouse gas emissions within our school. The results were not only inspiring but also marked a significant step towards a more sustainable and eco-friendly school environment.

Guided by the principles of design thinking, the students collaborating in teams brainstormed ideas, conducted research, and developed practical solutions aimed at reducing greenhouse gas emissions within the school premises.

The diversity of ideas presented during the challenge was astounding. From energy-efficient lighting systems and waste reduction strategies to the introduction of green spaces and sustainable transportation initiatives, each team brought a unique perspective to the table.

Taking their ideas from concept to reality, some students planned to work on the proposed solutions to bring positive change in the society.

