AeroBay Curriculum <> GRADE 2		
Session No.	**Session Topic (Grade 2)**	**Objective**
Session 1	**IGNITE STEAM: Unleashing Innovation** Come, let's dive into the exciting world of STEAM! In this session, you will explore STEM, STEAM, and STREAM education, understanding how Science, Technology, Engineering, Arts, and Mathematics come together to shape the future. **Lab tools included: Measuring Tools Hands on**	Students will develop a clear understanding of STEM, STEAM, and STREAM education, recognizing the interdisciplinary nature of learning. This session will spark curiosity, critical thinking, and a passion for hands-on learning, preparing them to tackle future challenges with a STEAM mindset.
Session 2	**Weight Balance** let's explore the science of balance! create your own weight balance kit and learn how to compare different masses. **Kit included: Balancify (Take away)**	Students will understand the concept of weight and comparative masses. They will explore how balance is achieved, recognize the importance of precision in measurement.
Session 3	**Monster Vaccuum Challenge** Let's bring a giant air-powered monster to life! Create a monster using polythene and discover how air, an invisible yet powerful force, can be compressed and expanded to make it move. **Kit included: Little Monster(Take away)**	Students will understand the properties of air as a matter, including compression, expansion, and pressure differences. They will explore how air can be used to create movement and apply their learning to build a fun and interactive air-powered monster.
Session 4	**Symmetry Grid Challenge** Let's explore the world of symmetry and spatial reasoning! Use a grid matrix to construct intricate symmetrical patterns while analyzing geometric relationships, coordinate positioning. **Kit included: Grid Matrix (Take away)**	Students will develop an understanding of symmetry in mathematical contexts, enhance their spatial visualization skills, and explore coordinate mapping principles. They will apply logical reasoning to create balanced designs while interpreting grid-based representations.
Session 5	**Tick-Tock Timekeeper** Let's build our own working clock! Design and assemble a clock using MDF while exploring the fundamentals of timekeeping, clock mechanics, and number placement. Learn how gears and hands work together to track time accurately. **Kit included: Clock (Take away)**	Students will understand the fundamentals of time measurement, including hours, minutes, and seconds. They will explore the working of clock hands, gear mechanisms, and number placement while developing hands-on assembly skills to build a functional clock.
Session 6	**The Art Lab: Colors, Brushes & Beyond** let's explore the world of art! Get ready to bring your imagination to life. **Kit included: Art Kit (Take away)**	Students will understand primary and secondary colors, learn how to mix colors to create new shades, and explore the difference between drawing and sketching. They will gain hands-on experience with various art tools, develop fine motor skills, and improve precision in handling pencils and brushes.

Session 7	**Decode Secret message** Get ready to think critically, analyze clues, and sharpen your problem-solving skills as you break the code! **Kit included: Secret Quest (Take away)**	Students will enhance their critical thinking and problem-solving abilities while exploring the importance of encryption and decryption in communication.
Session 8	**Bot Verse: Exploring the World of Robots** let's dive into the fascinating world of robots! In this session, you will explore how robots look, where they work, and how they help us in daily life. **Lab tool included: Robotics Arm (Demonstration)**	Students will gain a fundamental understanding of robotics, learning about different types of robots, their functions, and real-world applications.
Session 9	**Breeze to Power** Transform the power of wind into electricity! Build your own wind machine using MDF and explore how kinetic energy is converted into electrical energy. Understand the fundamentals of wind energy, turbine mechanics, and renewable power generation through hands-on experimentation. **Kit included: Wind Machine (Take away)**	Students will understand the principles of wind energy and energy conversion. They will explore how wind turbines function, learn about the relationship between kinetic and electrical energy, and apply engineering concepts to build a working wind machine.
Session 10 -11	**Synergy Quest** Experience the power of teamwork through an exciting game! Collaborate, communicate, and strategize with your peers to achieve a common goal. Explore the importance of coordination, problem-solving, and leadership as you engage in fun and interactive challenges. **Kit included: Team work game (Take away)**	Students will develop essential teamwork skills, including communication, collaboration, and problem-solving. They will understand the significance of collective effort, learn how to effectively work in groups, and apply their skills to complete a team-based challenge successfully.
Session 12	**Equilibrio Challenge** Master the art of balance through a fun and interactive game! Explore how weight, force, and positioning affect stability as you navigate different balancing challenges. **Kit included: Balance game Kit (Take away)**	In this session, students will explore the concept of balance and stability through hands-on activities. They will understand how weight distribution, force, and positioning affect equilibrium.
Session 13	**STEAM Mastery Challenge: Intra-Class Competition** Get ready for an exciting STEAM Mastery Challenge, put your learning to the test through an engaging intra-class competition! This session will bring together all the concepts explored in previous activities, allowing students to compete in hands-on challenges that assess their problem-solving skills, creativity, and conceptual understanding. **Lab materials included: Prop usage during presentation**	Students will be able to apply their knowledge to solve real-world challenges, demonstrate their understanding through hands-on tasks, and enhance their critical thinking and teamwork skills in a competitive environment. They will also evaluate their own proficiency, identify areas for improvement, and build confidence in practical problem-solving and innovation.

Session 14	**Memory Cube** Turn your favorite memories into a creative 3D masterpiece! Design and assemble a photo cube while exploring spatial arrangement, symmetry, and pattern formation. Personalize each side with unique images and bring your creativity to life. **Kit included: Photo Cube (Take away)**	Students will develop spatial awareness and problem-solving skills while constructing a 3D photo cube. They will explore concepts of symmetry, alignment, and structure, enhancing their fine motor skills and creative expression.
Session 15	**Energy Launcher** Build your own plane launcher and discover the magic of energy transformation! Explore how stored energy converts into motion, propelling your plane forward. Experiment with different launch techniques and understand how energy conservation plays a key role in movement. **Kit included: Plane with launcher(Take away)**	Students will understand the concept of energy conservation and transformation. They will explore how elastic energy converts into kinetic energy and apply their learning to design and test a functional plane launcher.
Session 16	**Fulcrum Flyer: MiG-29** Step into the world of aviation engineering by building your own MiG-29 Fulcrum from styrofoam! Explore the structure and design of fighter jets while understanding the principles of stability, control, and maneuverability in flight. **Kit included: MiG 29 (Take away)**	Students will understand the basic aerodynamics of fighter jets, including lift, thrust, and control surfaces. They will explore the importance of design in high-speed aircraft and apply engineering concepts to construct a functional MiG-29 model.
Session 17	**Fulcrum Soar: MiG-29 Glider** Take your MiG-29 Fulcrum to the skies! Fly your handcrafted styrofoam glider and explore how design impacts flight performance. Experiment with adjustments to improve stability, control, and glide distance while understanding the forces acting on a soaring aircraft. **Ground activity: Glider flying by students**	Students will apply principles of aerodynamics by testing and refining their MiG-29 glider. They will explore concepts like balance, drag, and flight control, gaining hands-on experience in glider flying.
Session 18 -19	**Virtual Pilot: Flight Simulation** Step into the cockpit and experience the thrill of flying! Using advanced simulation software, take control of an aircraft, navigate through the skies, and understand the fundamentals of real-world flight operations. **Software included: Simulation software** **Lab tools included: Transmitter, cells, Simulation cables**	Students will understand the basics of how airplanes move and how pilots control them. They will explore takeoff, steering, and landing through a virtual flight experience, building confidence and coordination while having fun

Session 20	**Zooming Balloon Rocket** Get ready to launch your own rocket using the power of air! Explore how air pushes the rocket forward and learn about motion and force in a fun and exciting way! **Kit included: Balloon Rocket (Take away)**	Students will understand how air pressure and force can make objects move. They will explore the concept of action and reaction, learn how air escapes to propel the balloon rocket, and observe how different factors affect speed and movement.
Session 21	**Brilliant Brain** Let's explore the amazing control center of our body—the brain! Discover the special functions of each part. **Kit included: Brain (Take away)**	Students will learn about the different parts of the brain and their basic functions. They will explore how some parts help us move, some help us think, and some help us feel. Through a hands-on activity, they will build a simple brain model to understand its structure.
Session 22	**Bridge Craft** Let's build a bridge just like civil engineers do! Discover the genius behind its design and explore how stability and balance work in structures. **Kit included: Civil Bridge (Take away)**	Students will understand the principles of balance, tension, and compression in bridge structures. They will explore how Leonardo da Vinci's design distributes weight and supports itself, applying engineering concepts to build a working model of the bridge.
Session 23	**Spinning Colors: Newton's Disc** Get ready to spin and see the magic of colors! Explore the science behind light and color perception in a fun and hands-on way! **Kit included: Newton's Disc (Group)**	Students will understand the concept of color mixing and how white light is made up of different colors. They will explore the principles of motion and perception by spinning the disc to observe how colors blend, learning about Isaac Newton's discoveries in optics.
Session 24	**Spotlight: Exhibit with confidence** Learn how to engage your audience, structure your ideas, and deliver a powerful presentation with clarity and impact! **Lab materials included: Prop usage during presentation**	Students will choose any topic from the above sessions covered and prepare a complete presentation of the same. Students will develop public speaking, presentation, and communication skills by delivering a structured presentation on topics covered so far. They will learn how to organize their thoughts, express ideas clearly, and engage an audience with confidence.