LUMINA

Atomic Energy Central School No.3, Mumbai

School Level Exhibition 2025-26

A compilation of project ideas presented in the school level exhibition for Rashtriya Bal Vaigyanik Pradarshini 2025-26


LUMINA

FROM THE PRINCIPAL'S DESK



It gives me immense happiness that I witness the release of our School Magazine, 'Lumina.' This edition serves as a vibrant compilation of the project ideas showcased in our school-level exhibition, highlighting the creative and innovative talents of our students.

These innovative ideas are consistently reaching broader platforms. AEES proudly participates as a State in the annual Rashtriya Balvaigyanik Pradarshni (RBVP), conducted by NCERT. This year was truly remarkable, with 18 exhibits from AEES being selected to participate in the recently concluded RBVP 2025 in Bhopal.

Furthermore, our AECS-3 students actively participated in the Inter AECS Exhibition and the CBSE Regional Level Exhibition, which serve as crucial pathways to the national-level RBVP 2025 hosted by NCERT. The impressive projects presented at the school exhibition were also nominated for prestigious events such as the CBSE Skill Expo, Viksit Bharat Buildathon, Pravega and the INSPIRE MANAK Awards.

I extend my sincere congratulations to all the participating students and their dedicated mentors for this vibrant display of creativity and innovation.
I am hopeful that engaging in these events will encourage our students to pay more attention to the various problems around us and to provide them with the opportunity to think critically about sustainable solutions. We need to nurture the creation of machines and solutions that are genuinely helpful to the common person, farmers, and others, ultimately making their routine work more convenient.

We wish our students the very best in all their future endeavors.

Vijay Kumar Shukla
Principal
A.E.C.S.-3, Mumbai

FROM THE VICE-PRINCIPAL'S DESK



"The function of education is to teach one to think intensively and to think critically. Intelligence plus character - that is the goal of true education." -Martin Luther King Jr.

Education is the journey of growing up and development of a child. It provides the foundation for a child's character, moulding future action and social commitment. It shapes a child's personality and creates an impression that will last a lifetime.

Education plays a fundamental role in building a healthy nation where all the citizens live in harmony. Education is the vehicle for the student's progress. Hence no country can seek progress until it pays right attention to the development of a comprehensive education system.

AECS No.3 Mumbai provides all the opportunities to mould the child into a good citizen. We focus primarily on preparing our children to be worthy citizens, refined in heart and skill enough to achieve paramount goals. Our sincere effort is to provide a learning environment to each and every child so that when they go out of the portal they brim with confidence and emerge as the leaders of tomorrow.

The Lumina magazine is an attempt to encompass the educational experiences students receive through various activities throughout the year.

Best wishes
B R Meshram
Vice-principal
A.E.C.S.-3, Mumbai

FOREWORD

"The important thing is to never stop questioning."
— Albert Einstein



Dear Readers,
It gives me immense pleasure to introduce this special edition of our school magazine, which beautifully captures the spirit and creativity of our young learners through the Science and Mathematics Exhibition – Primary Section. It reflects the enthusiasm and brilliance displayed by our students.

In this compilation, you will find not just projects, but imagination in action.

To all our budding scientists and mathematicians—I am incredibly proud of you. Each of you has taken a step forward not just in academics, but in developing skills that will serve you throughout your lives: critical thinking, teamwork, problem-solving, and presentation.

A sincere thank to our dedicated teachers, who have guided and mentored our students at every step with patience, passion, and insight. I also express my heartfelt appreciation to the parents for their support and encouragement, which makes all the difference in a child's learning journey.

Let this magazine stand as a testament to the belief that the seeds of scientific temper and mathematical reasoning are sown early—and flourish best when nurtured with encouragement and opportunity. Let us continue to inspire, inquire, and innovate—together.

Mrs. Ashwini G. Nagrale
Headmistress
A.E.C.S.-3, Mumbai

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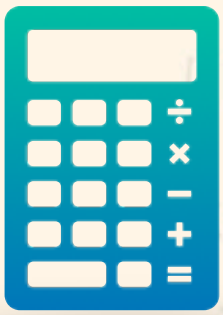


MATHEMATICAL MODELLING AND COMPUTATIONAL THINKING

EXHIBIT CODE: RBVP/M/6/01

NAME OF THE EXHIBIT: LOWEST COMMON MULTIPLE (LCM)

NAME AND CLASS OF PARTICIPANTS: SHRAVANI NAVINCHANDRA CHOPDEKAR (L) - 6A
AARADHYA VIKRAM JAGTAP - 6A
PARINEETA SHARAD PAWAR - 6

YOUTUBE VIDEO LINK:



SYNOPSIS

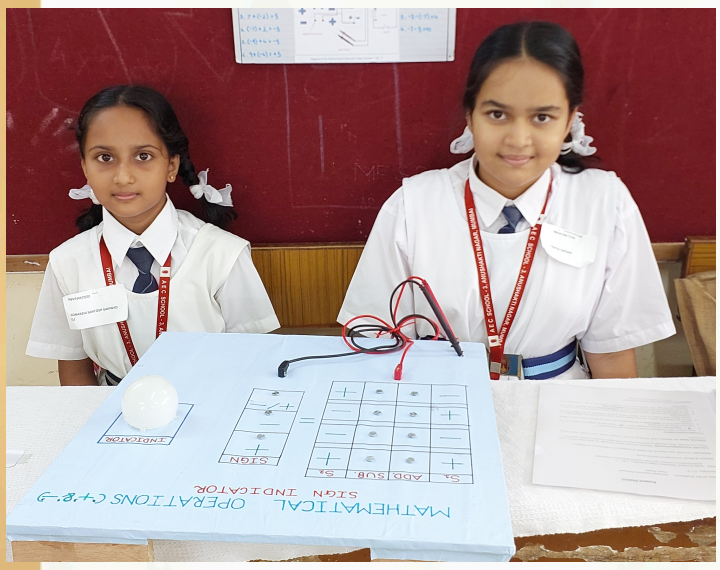
The lowest common multiple (LCM) is useful when it is necessary to express functions with a common denominator, particularly when adding, subtracting, ordering, or comparing values. The LCM of two or more whole numbers is the smallest whole number that is evenly divisible by each of the given numbers, leaving no remainder.

EXHIBIT CODE: RBVP/M/7/02

NAME OF THE EXHIBIT: MATHEMATICAL OPERATIONS

NAME AND CLASS OF PARTICIPANTS: SONAKSHI SANTOSH GAIKWAD (L) - 7B
INAYA SHEIKH - 7B

YOUTUBE VIDEO LINK: HTTPS://YOUTU.BE/-A5OSYGEW88?SI=N_YX-U36Y8YY1EFE



SYNOPSIS

To study and observe the rules governing the addition and subtraction of integers, based on the principle that electric current flows through a circuit only when it is closed. Select an appropriate rule for addition or subtraction to determine the resulting sign in the designated column, which is then verified by the illumination of an LED.

EXHIBIT CODE: RBVP/M/7/03
NAME OF THE EXHIBIT: SQUARE AREA AND VOLUME
NAME AND CLASS OF PARTICIPANTS: ARCHIT GOYAL (L) 7 B



SYNOPSIS

1. Rationale:

Mensuration is a fundamental mathematical tool widely used by engineers and architects in construction and design. The measurement of surface area and volume of three-dimensional (3-D) shapes has numerous real-life applications. Some examples include buildings, boxes, traffic cones, ice cream cones, tents, pipes, cans, domes, balls, and more.

2. Procedure / Description:

Models representing various 3-D objects are prepared. The mensuration formulas of basic two-dimensional (2-D) shapes are applied to calculate the surface area and volume of the corresponding 3-D shapes.

EXHIBIT CODE: RBVP/M/8/04
NAME OF THE EXHIBIT: SQUARE ROOT BOX
NAME AND CLASS OF PARTICIPANTS: RUCHIKA THAKUR (L) 8A

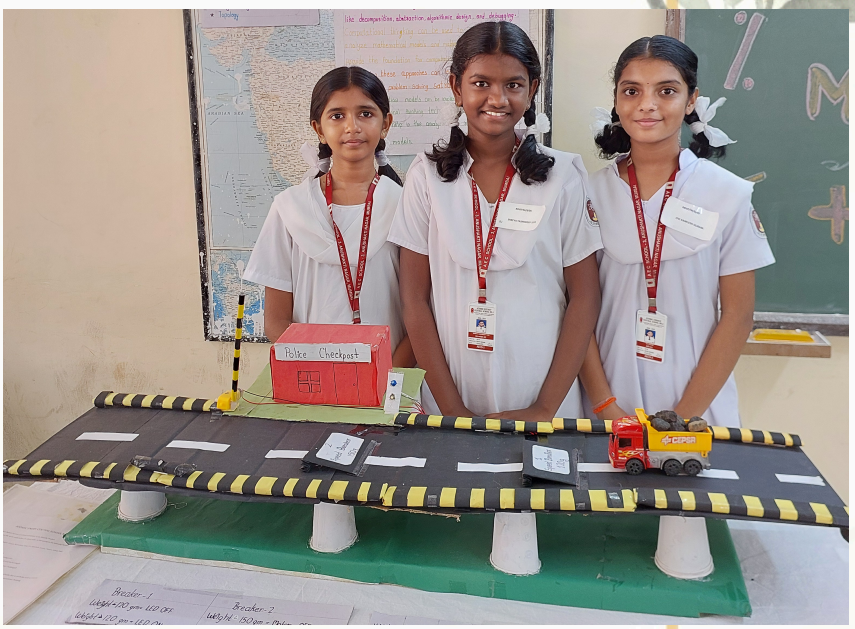
YOUTUBE VIDEO LINK: https://youtu.be/ubGIvX3OljA?si=A_aXiwBIGCcqGOru

SYNOPSIS

Understanding square roots involves recognising and working with numbers that, when multiplied by themselves, result in a given value. The concept is fundamental in various mathematical operations and problem-solving situations. A square root box can be used as a visual and interactive tool to help students grasp the idea of square roots and their properties.



EXHIBIT CODE: RBVP/M/8/05
NAME OF THE EXHIBIT: PREVENTING ROAD DAMAGES
NAME AND CLASS OF PARTICIPANTS: SHREYA YASHODEEP TOTE (L) 8B
HARSHA ABHAY PATIL 8A
OVI KAMLESH GURAM 8B



SYNOPSIS

A logical system that can help prevent accidents and avoid costly repairs by ensuring proper planning, monitoring, and timely interventions.

EXHIBIT CODE: RBVP/M/8/06
NAME OF THE EXHIBIT: LAWS OF EXPONENTS
NAME AND CLASS OF PARTICIPANTS: ADITYA S. BHUJBAL 8C

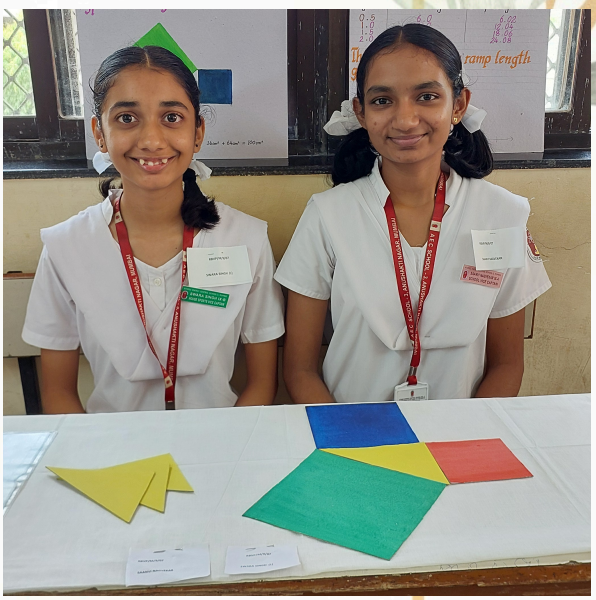
YOUTUBE VIDEO LINK: HTTPS://YOUTU.BE/ARPWKHONXCA?SI=P0CTUNEB1VCEWGEI



SYNOPSIS

This project explores the Laws of Exponents, including the rules for product, quotient, power, zero, and negative exponents. It is designed to develop a clear understanding of how to manipulate exponents through guided examples and problem-solving activities. Additionally, the project highlights real-world applications of exponent rules, thereby enhancing students' algebraic skills and preparing them for more advanced mathematical concepts.

EXHIBIT CODE: RBVP/M/9/07
NAME OF THE EXHIBIT: DESIGNING A RAMP WITH PYTHAGORAS THEOREM
NAME AND CLASS OF PARTICIPANTS: SWARA SINGH (L) 9 B
SAANVI NAGVEKAR 9A



SYNOPSIS

This project models a safe and accessible wheelchair ramp by applying the 1:12 slope ratio as recommended by the National Building Code. Using the Pythagorean Theorem, the ramp length is calculated based on the given vertical height, ensuring that the design meets safety and accessibility standards for real-world applications.

EXHIBIT CODE: RBVP/M/9/08
NAME OF THE EXHIBIT: FRACTIONS AND MEASUREMENTS
NAME AND CLASS OF PARTICIPANTS: NIRJARA PAWASKAR 9 B
SAANVI GAUTAM 9B
MANASI BEGAMPURE (L) 9B

YOUTUBE VIDEO LINK: https://youtube.com/shorts/WahVHCIoJUk?si=9abb8DmAaBUjomA



SYNOPSIS

This project demonstrates how to identify and measure different types of angles and fractions. It illustrates the relationships between various angles and shows how some angles are equal to others. A 360-degree circle model is used to visualise and understand angle measurements more clearly. Overall, this project is specifically designed to support students who find it challenging to grasp the concepts of angles and fractions, offering a visual and hands-on approach to enhance understanding.

EXHIBIT CODE: RBVP/M/10/10
NAME OF THE EXHIBIT: APPLICATION OF LLM
NAME AND CLASS OF PARTICIPANTS: SWAMINATH S NAIR (L) - 10B

SYNOPSIS

Demonstration of working principles of transformer, which form the backbone of LLM tools like ChatGPT, Gemini, Llama, etc using a dedicated GUI

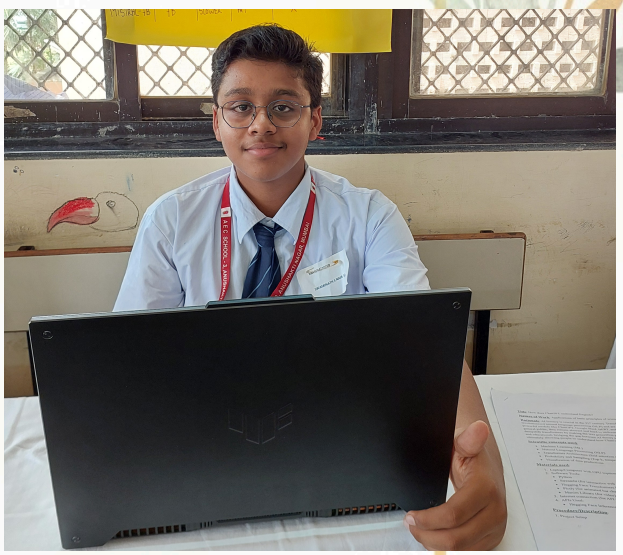


EXHIBIT CODE: RBVP/M/10/11
NAME OF THE EXHIBIT: APPLICATION OF TRIGONOMETRY
NAME AND CLASS OF PARTICIPANTS: ANWITA ISE (L) 10 B
DIA LINISH 10 B
AIMEE JOSEPH 10 B

YOUTUBE VIDEO LINK: https://youtube.com/shorts/shrNWTbZV00?si=M2ypCzCkG5V_ST6j



SYNOPSIS

This project explored how trigonometric ratios can be applied in real-life situations to calculate the heights of various objects. By using tools like a clinometer and measuring angles of elevation, one can accurately determine the height of objects such as trees and buildings. This activity helps understand the practical use of trigonometry beyond textbooks and improves problem-solving and observation skills.

EXHIBIT CODE: RBVP/M/10/12
NAME OF THE EXHIBIT: SMART MUNAFA (BUSINESS HELPER AI)
NAME AND CLASS OF PARTICIPANTS: K.DIVYESH KUMAR (L) 10 A
SELVAMANI PALANI 10A
ANMOL SHARMA 10A

YOUTUBE VIDEO LINK: https://youtu.be/BCkLhWobQeg?si=_c5HCMfFPzVpC6NW

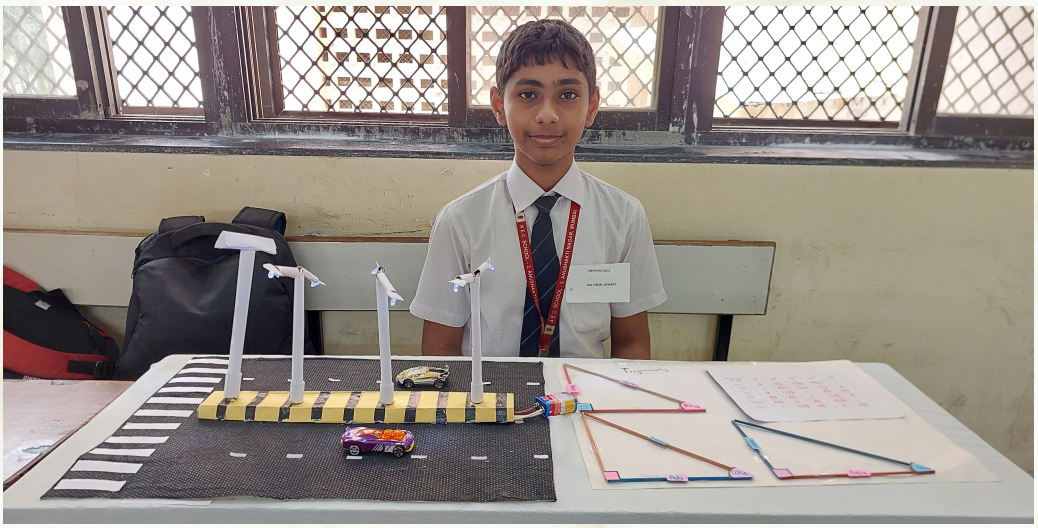
SYNOPSIS

Smart Munafa AI is a cutting-edge, AI-powered assistant designed specifically for small shopkeepers and farmers. It streamlines essential business tasks—such as calculating profit, loss, discounts, and taxes—using simple voice commands and intuitive button-based inputs. With multilingual support and a user-friendly interface, it makes smart business management accessible to everyone, in the easiest way possible.



EXHIBIT CODE: RBVP/M/10/13
NAME OF THE EXHIBIT: STUDY OF TRIGONOMETRY
NAME AND CLASS OF PARTICIPANTS: OM VISHAL SAWANT (L) 10 B

YOUTUBE VIDEO LINK: https://youtube.com/shorts/efCnjlm9NkQ?si=ertjFLHhSDaeu4-V



SYNOPSIS

Trigonometry plays a vital role in the design of street lighting by determining the optimal height, angle, and spacing of light poles to ensure uniform illumination. By applying trigonometric principles, engineers can minimise dark spots and glare, enhancing visibility and safety for pedestrians and vehicles in urban and rural areas.


DISASTER
MANAGEMENT

EXHIBIT CODE: RBVP/DM/6/02
NAME OF THE EXHIBIT: MAGNETIC TECHNOLOGY ON EARTHQUAKE
NAME AND CLASS OF PARTICIPANTS: SHOURYA CHAVAN, (L) 6 B
SAMIKSHA DABHADE 6 B
GARGI PARADKAR 6 B

YOUTUBE VIDEO LINK: https://youtu.be/hxgq2p2GE9U?si=Qt8Yrnhg9qFBf8iU

SYNOPSIS

Earthquake technology includes seismic sensors, early warning systems, and shock-absorbing structures. To prevent damage, magnetic force can be used in building foundations to create levitation or damping systems. These systems reduce vibrations by suspending structures slightly above ground, minimising contact with seismic waves and enhancing safety during earthquakes.



EXHIBIT CODE: RBVP/DM/6/03
NAME OF THE EXHIBIT: DISASTER MANAGEMENT PRO
NAME AND CLASS OF PARTICIPANTS: SHRIKRISHNA SANDEEP KHOT (L) 6 A
DHRUV JAGDISH KHANDEKAR 6 A
PRADNYESH MUKESH GAIKWAD 6 A

YOUTUBE VIDEO LINK: https://youtu.be/PzK9dMZJC68?si=yhJwsDoDVeQYbMRo



SYNOPSIS

The project is based on disaster management, focusing on four major types: earthquake management, fire management, flood management, and train accident management. The aim of this project is to highlight preventive measures and effective responses that can help save lives during such emergencies. Real-life incidents such as the 2022 train accident, the rising water levels at the Gateway of India, industrial area fires, and the earthquake in Myanmar serve as reminders of the urgent need for preparedness and management strategies.

EXHIBIT CODE: RBVP/DM/7/04
NAME OF THE EXHIBIT: WATER ALARM SYSTEM DURING RIVER FLOOD
NAME AND CLASS OF PARTICIPANTS: DEVIKA KRISHNA (L) 7 B

YOUTUBE VIDEO LINK: https://youtu.be/7SKjA_5V3so?si=fTJlSdOx5NOnBBZX

SYNOPSIS

The River Flood Water Alert System is essential for timely communication during flood events, which can save lives protect livelihoods. This project was motivated by the recent devastating floods in Uttarakhand, Himachal, Maharashtra, Kerala and other regions, highlighting the need for efficient alert systems to warn communities about rising water levels.



EXHIBIT CODE: RBVP/DM/8/05
NAME OF THE EXHIBIT: NATURAL DISASTER (EARTHQUAKE)
NAME AND CLASS OF PARTICIPANTS: NEERAJ WARANG (L) 8 C
CHAITANYA SAWANT 8 C

YOUTUBE VIDEO LINK: https://youtu.be/T8stk9aeyIM?si=1Qfs2yB-gZX-adt0



SYNOPSIS

An earthquake occurs when tectonic plates within the Earth's crust shift abruptly, resulting in intense ground shaking. The primary consequences of such seismic activity include tsunamis, landslides, and the collapse of buildings, often due to soil liquefaction. In an effort to enhance safety and save lives, we have developed two automated safety alarms: a visual light alarm and an audible beep alarm. These systems are designed to activate immediately upon detecting ground movement, providing timely warnings and enabling individuals to seek safer locations.

EXHIBIT CODE: RBVP/DM/9/06
NAME OF THE EXHIBIT: CONFRONTING LANDSLIDES
NAME AND CLASS OF PARTICIPANTS: ADVAITH MENON (L) 9 A
SARTHAK RAJESH SHINDE 9A
SAATVIK KARRI 9A

YOUTUBE VIDEO LINK: https://youtu.be/OaSrukdn2Po?si=M6zlFzyMo_okePEz

SYNOPSIS

Landslides are one of the most commonly occurring natural disasters in India. Hence, it is imperative for us to know the ways to protect ourselves and the environment from landslides and their destructive impact. Our project may help people understand how landslides can be prevented and their effects minimised.

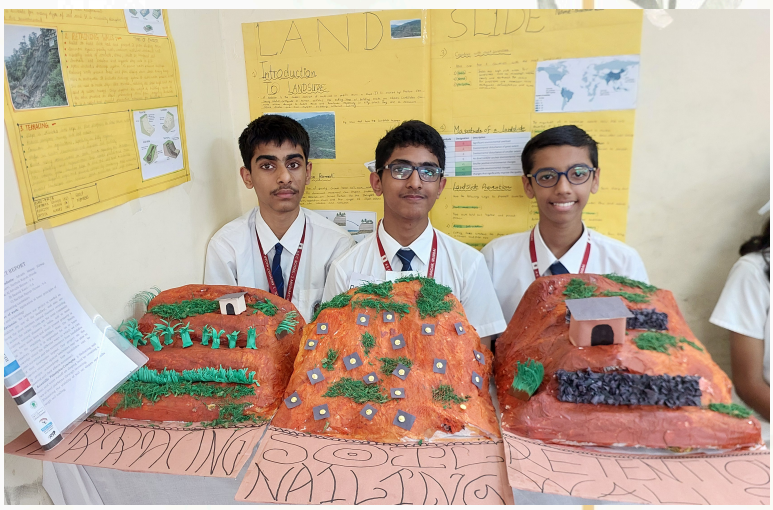
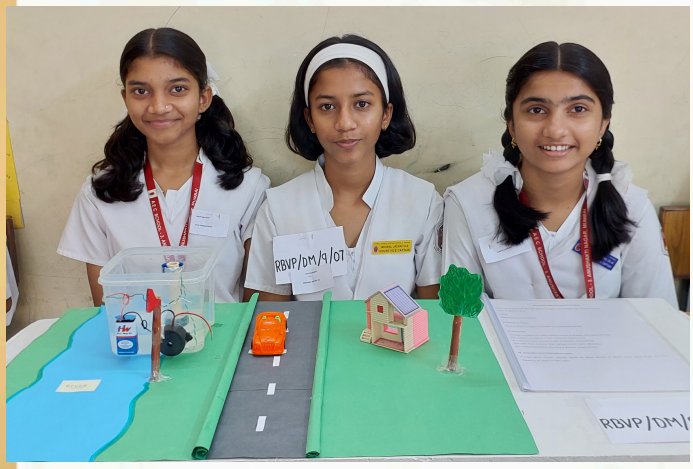


EXHIBIT CODE: RBVP/DM/9/07
NAME OF THE EXHIBIT: DISASTER DYNAMICS: BUILDING RESILIENCE TOGETHER
NAME AND CLASS OF PARTICIPANTS: MRUNALI JADHAV (L) 9 A
ANVI SHIRGAONKAR 9A
SHREYA LAVAND, 9A



SYNOPSIS

The Flood Alarm System uses sensors to detect rising water levels and alerts users with buzzers. It provides early warnings in flood-prone areas, helping prevent damage and ensuring safety. Cost-effective and reliable, the system is ideal for monitoring rivers, reservoirs, and supporting disaster management efforts to reduce flood impact.

EXHIBIT CODE: RBVP/DM/9/08
NAME OF THE EXHIBIT: LITERALLY LIFE SAVER
NAME AND CLASS OF PARTICIPANTS: AAYUSHI OJHA (L) 9 B
NAISHA SHETTY 9B

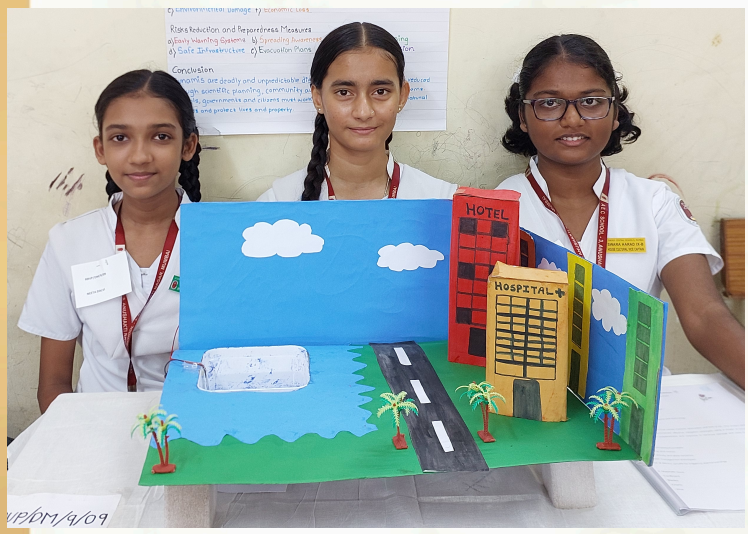
SYNOPSIS

The project, Literally Life Saver, demonstrates how motion from earthquakes, wind, or water can generate electricity using Faraday's Law. It highlights sustainable, battery-free energy generation for emergencies and everyday use, combining science, survival, and renewable power in a simple 3D model and demo torch.



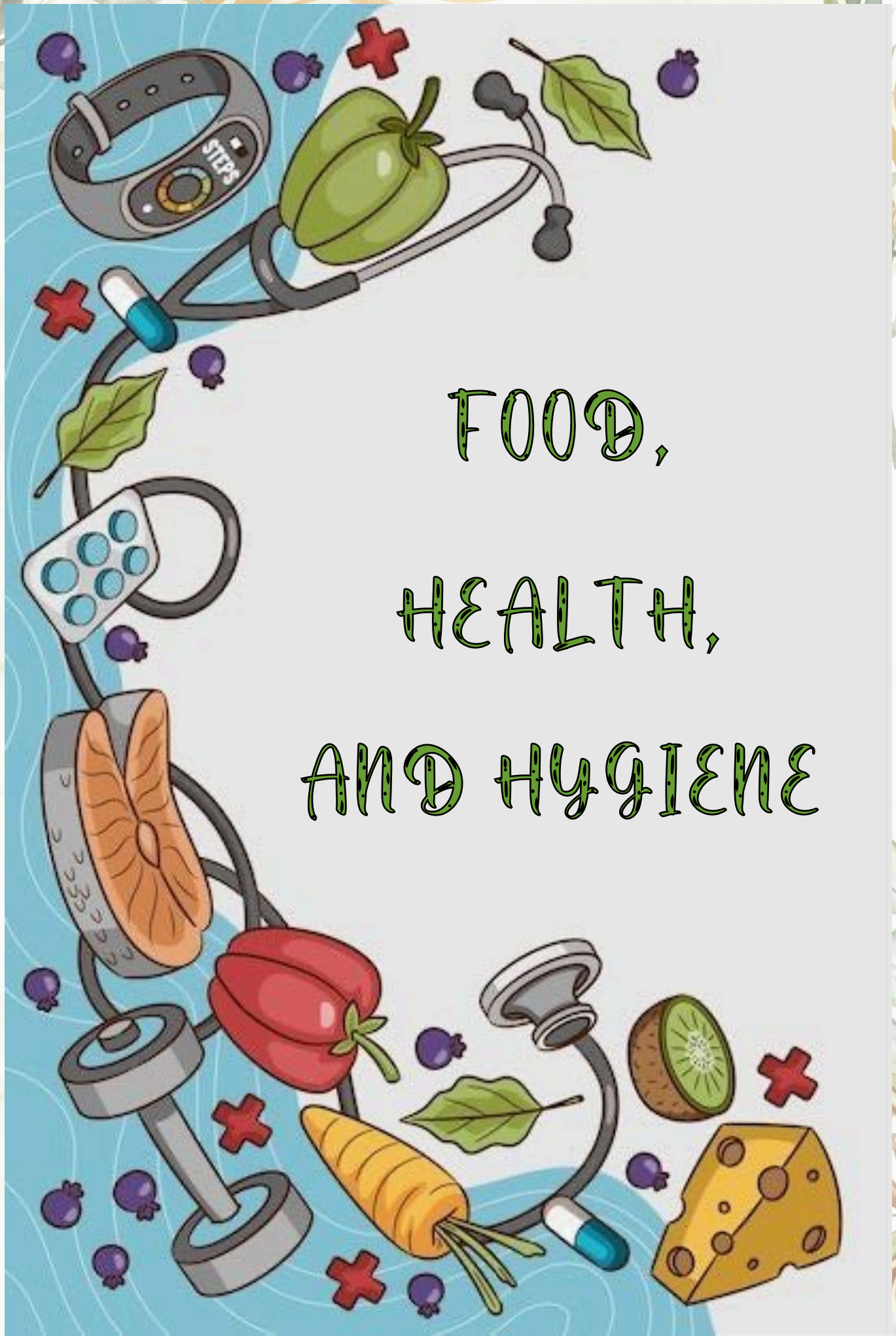
EXHIBIT CODE: RBVP/DM/9/09
NAME OF THE EXHIBIT: MITIGATING DISASTER: A COMPREHENSIVE APPROACH
NAME AND CLASS OF PARTICIPANTS: SANVI BHANWAL (L) 9 B
SWARA HARAD 9 B
NEETA DALVI 9 B

YOUTUBE VIDEO LINK: https://youtu.be/4RxIwOBpsPY?si=pCLZfiBlQgrIFlVq



SYNOPSIS

Mitigating disasters: When water comes into contact with the blade connected to the silencer, it generates a distinct noise that serves as a warning signal. This audible alert notifies individuals of a potential disaster, enabling timely evacuation or response to ensure safety.



FOOD, HEALTH, AND HYGIENE

EXHIBIT CODE: RBVP/FH/7/10
NAME OF THE EXHIBIT: FOOD ADULTERATION SYSTEM
NAME AND CLASS OF PARTICIPANTS: IMA L NARAYAN (L) 7 B

SYNOPSIS

Milk adulteration with starch is commonly detected through the iodine test, in which the presence of starch is indicated by the appearance of a blue coloration. Adulteration of red chilli powder with foreign substances can be identified using the sedimentation test, wherein the sample is mixed with water and observed for settling impurities. Similarly, the presence of papaya seeds in black pepper is determined through visual inspection and the flotation test, as the adulterants typically float due to their lower density.



EXHIBIT CODE: RBVP/FH/7/11
NAME OF THE EXHIBIT: BALANCED DIET
NAME AND CLASS OF PARTICIPANTS: ARNAV SATPUTE (L) 7A
BHARGAV KHAIRNAR 7A



SYNOPSIS

To understand and identify various food sources that supply essential nutrients, and to learn how these foods can be combined to form a balanced diet, ensuring the body receives adequate vitamins, minerals, and other vital nutrients.

EXHIBIT CODE: RBVP/FH/8/13
NAME OF THE EXHIBIT: HEALTH AND HYGIENE
NAME AND CLASS OF PARTICIPANTS: SHAURYA D. TRIMBAKKAR 8C

YOUTUBE VIDEO LINK: https://youtu.be/k4tuTcvzl7A?si=AWGohYt94oPxgntY

SYNOPSIS

This project explores food, health, and hygiene, highlighting their role in overall well-being. It explains the definition of health and outlines simple daily practices to maintain it. The project also emphasises balanced nutrition, cleanliness, safe food habits, and the importance of personal hygiene in preventing diseases and promoting a healthy lifestyle.



EXHIBIT CODE: RBVP/FH/8/14
NAME OF THE EXHIBIT: RICE: WITH PURPOSE
NAME AND CLASS OF PARTICIPANTS: MAHESHWARI B.S. BHOSALE



SYNOPSIS

This project explores 12 traditional medicated rice varieties from India, highlighting their key nutrients, health benefits, and medicinal uses. It shows how these ancient rice types support immunity, digestion, and manage conditions like diabetes, anaemia, and fatigue. The study promotes awareness of India's rich heritage in natural, healthy grains.

EXHIBIT CODE: RBVP/FH/9/15
NAME OF THE EXHIBIT: DIABETES
NAME AND CLASS OF PARTICIPANTS: A. SADHIKA NAIR (L) 9B
GAURI HEDAU 9A
AKSHITA PURWAR 9A

YOUTUBE VIDEO LINK: https://youtu.be/44gJpLEJv0I?si=6uu6a9T5REWKyYiN



SYNOPSIS

This project provides an overview of diabetes, including its definition, the different types of diabetes, methods for prevention, and the common signs and symptoms associated with the condition.

EXHIBIT CODE: RBVP/FH/10/16
NAME OF THE EXHIBIT: SCIENCE AND TECHNOLOGY FOR SUSTAINABLE FUTURE
NAME AND CLASS OF PARTICIPANTS: DIVYADARSHANI SAHU (L) 10A
BHUMIKA CHAVAN 10B

YOUTUBE VIDEO LINK: https://youtu.be/ImuWQCxbpu4?si=KplZypWlxtxmHIzl



SYNOPSIS

Health is a state of complete physical, mental, and social well-being. Health hygiene includes practices like a balanced diet, personal cleanliness, and regular exercise. Good hygiene, such as handwashing, helps prevent diseases. Studying food safety, natural preservatives, and biodegradable wrappers promotes healthier lifestyles and protects both personal and environmental health.

NATURAL FARMING



EXHIBIT CODE: RBVP/NF/6/18
NAME OF THE EXHIBIT: HYDROPONICS- AEROPONICS
NAME AND CLASS OF PARTICIPANTS: ANWESH BHATTACHARYA (L) 6B
SOUNAK SARKAR 6B

YOUTUBE VIDEO LINK: https://youtu.be/UBtrpW2rl4A?si=zPo1I7cQ-Ef5Y-0w



SYNOPSIS

Natural farming is gaining importance as a solution to environmental degradation, climate change, and food security challenges. Our project explores sustainable methods such as hydroponics, aeroponics, vertical farming, bottle farming, and animal farming. These techniques, demonstrated through models and descriptions, promote eco-friendly, self-sufficient agricultural practices for a healthier future.

EXHIBIT CODE: RBVP/NF/7/19
NAME OF THE EXHIBIT: AGRICULTURE
NAME AND CLASS OF PARTICIPANTS: ADVAIT ANAND (L) 7B

YOUTUBE VIDEO LINK: https://youtu.be/XpG9zKpjQHQ?si=LzPuBGyx9visDpe0



SYNOPSIS

My agricultural ,natural farming methodology (prakritik krishi padathi) is a zero external input system of organic agriculture largely relying on the principle of Zero budget Natural farming is aimed at promoting traditional indigenous practices, which gives freedom to farmers from externally purchased inputs and is largely farm based on farm.

EXHIBIT CODE: RBVP/NF/7/20
NAME OF THE EXHIBIT: FARM PROTECTION
NAME AND CLASS OF PARTICIPANTS: SWAYAM KADAM (L) 7B
SAMYAK KHANDAGALE 7B
HITEN SANTOSH MAGAR 7B

YOUTUBE VIDEO LINK: https://youtu.be/84OhJEYzqVs?si=5Ql5Q7yWpk2GnjTF

SYNOPSIS

This project explains how homemade bio-enzyme made from orange peels can naturally nourish plants. It describes the preparation process, the decomposition action, and the nutrient-rich solution produced. The project highlights its role in improving soil quality, promoting healthier plant growth, and offering an eco-friendly alternative to chemical fertilisers.



EXHIBIT CODE: RBVP/NF/8/21
NAME OF THE EXHIBIT: NATURAL FERTILISER
NAME AND CLASS OF PARTICIPANTS: ADWAYA AJAY AIWALE (L) 8B

YOUTUBE VIDEO LINK: https://youtu.be/vRs9Ry9_hyo?si=FYixVwwYRvr0K4RS



SYNOPSIS

Natural farming is a method of growing crops without using chemicals like fertilisers and pesticides. It uses natural things like cow dung, compost, and local seeds. It is important because it keeps the soil healthy, saves water, protects the environment, and gives us safe, healthy food to eat.

EXHIBIT CODE: RBVP/NF/9/23
NAME OF THE EXHIBIT: NATURAL FARMING
NAME AND CLASS OF PARTICIPANTS: SHRADDHA WANAVE 9A

YOUTUBE VIDEO LINK: https://youtu.be/fj-PvZsTbPU?si=aT3CqYsPYBwSimhT



SYNOPSIS

Natural farming is a sustainable, chemical-free agricultural method that mimics nature's processes. It relies on local resources, promotes biodiversity, and improves soil health. Techniques include mulching, crop rotation, and using indigenous seeds.

EXHIBIT CODE: RBVP/NF/9/24
NAME OF THE EXHIBIT: SCIENCE AND TECHNOLOGY
NAME AND CLASS OF PARTICIPANTS: REEBHA NAIK AROSKAR (L) 9B
SHREYAL GORRY 9B

YOUTUBE VIDEO LINK: https://youtu.be/sK4D_C0LE2s?si=YNq1bifB4cBISv2I



SYNOPSIS

Rainwater harvesting- collection of rainwater &storing it in tank/pool for irrigation of Rabi & Zaid crops,

Soil tester -pH level test of soil, which helps to select the crops as per soil alkalinity.

Crop rotation in planned sequence to enhance productivity without reducing soil fertility.

Hydroponics System- Growing plants on nutrients based water/solution instead of soil.

Manure- decomposed vegetables scraps & organic wastes for fertility of the soil.

Using natural pesticide like neem oil.

EXHIBIT CODE: RBVP/NF/7/26
NAME OF THE EXHIBIT: NATURAL FARMING
NAME AND CLASS OF PARTICIPANTS: SANVI PEDNEKAR 7B
LAVANYA KAPSE 7B

SYNOPSIS

Natural farming is a sustainable, chemical-free agricultural method that mimics nature's processes. It relies on local resources, promotes biodiversity, and improves soil health. Techniques include mulching, crop rotation, and using indigenous seeds. With no synthetic fertilisers or pesticides, natural farming supports ecological balance, enhances food quality, and protects the environment.



RESOURCE MANAGEMENT



EXHIBIT CODE: RBVP/RM/6/01
NAME OF THE EXHIBIT: WINDMILL
NAME AND CLASS OF PARTICIPANTS: SURYANSH SANTOSH CHICHULKAR 6A

YOUTUBE VIDEO LINK: https://youtu.be/oq4UtKlWY7Y?si=eCDF5OAiJGkwwSkE



SYNOPSIS

This project demonstrates the basic working principle of a wind-powered electricity generator. In the model, a fan is connected to a small generator. The fan is rotated manually using a handle to simulate the effect of wind force. As the fan rotates, its kinetic energy is transferred to the generator, which converts this mechanical energy into electrical energy.
The generated electricity is then used to light up LEDs connected to the system. These LEDs are arranged to represent the illumination of large buildings, thereby showing how wind energy can be harnessed to power urban infrastructure.
This model effectively highlights the process of renewable energy generation and serves as a visual explanation of how wind energy can be converted into usable electrical power.

EXHIBIT CODE: RBVP/RM/6/03
NAME OF THE EXHIBIT: WATER PURIFICATION
NAME AND CLASS OF PARTICIPANTS: SAHIL AMBADAS FUNDE 6A
VANSHKUMAR YOGESH THAKUR 6A

YOUTUBE VIDEO LINK: HTTPS://YOUTU.BE/VBVA229JD58?SI=SV4HIY0YMIWADLF6

SYNOPSIS

This project demonstrates a simple water purification method using layers of cotton, pebbles, sand, and charcoal. Dirty water is poured through the filter, and impurities are trapped at each layer. The processed water comes out cleaner, showing how basic filtration techniques can improve water quality and promote safe usage.



EXHIBIT CODE: RBVP/RM/7/05
NAME OF THE EXHIBIT: RESOURCE MANAGEMENT
NAME AND CLASS OF PARTICIPANTS: ARYA JHA 7A

YOUTUBE VIDEO LINK: https://youtu.be/n3Mc2QttV3o?si=8TU2p6otm9bbb7by



SYNOPSIS

This project demonstrates wind energy conversion using a manually rotated fan connected to a generator. The fan's motion simulates wind force, converting kinetic energy into electrical energy that lights LED bulbs. The model also represents how wind power can illuminate large buildings, highlighting the efficiency and usefulness of renewable energy.

EXHIBIT CODE: RBVP/RM/8/06
NAME OF THE EXHIBIT: POWER UNDER YOUR FEET:REVOLUTIONISING ENERGY WITH FOOTSTEPS
NAME AND CLASS OF PARTICIPANTS: ARNAV MANE 8C

SYNOPSIS

"Power Under Your Feet" uses piezoelectric sensors to convert footsteps into electricity. Designed for high-footfall areas like stations and malls, the system stores generated energy in batteries to power lights or small devices. This eco-friendly model encourages sustainability by reducing dependence on fossil fuels and making every step a source of clean energy.

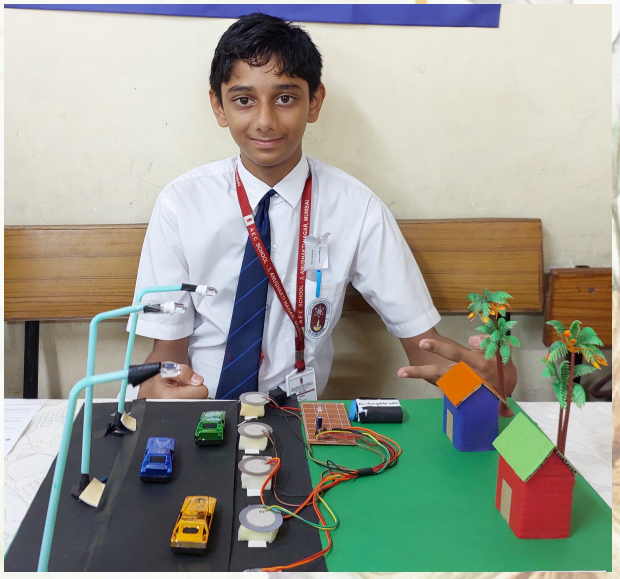


EXHIBIT CODE: RBVP/RM/8/07
NAME OF THE EXHIBIT: RAIN TO GAIN
NAME AND CLASS OF PARTICIPANTS: VIDYA ADHE 8B
VAISHNAVI SARAK 8B

YOUTUBE VIDEO LINK: https://youtu.be/8AnZ3hB3Zgo?si=LLMQnVzTw3iPEeo5

SYNOPSIS

This project highlights effective rainwater management to prevent unnecessary runoff. It explains methods such as collection, storage, groundwater recharge, and filtration. By conserving rainwater, the project promotes sustainable resource use, reduces water scarcity, minimises soil erosion, and encourages eco-friendly practices that ensure long-term environmental and community benefits.



EXHIBIT CODE: RBVP/RM/9/08
NAME OF THE EXHIBIT: RAIN WATER HARVESTING
NAME AND CLASS OF PARTICIPANTS: AAKARSH JHA 9A
AYUSH CHACHAN 9B
KANISHK PANCHMUKH 9A

YOUTUBE VIDEO LINK: https://youtu.be/ScEF1XILMYM?si=UAKtdHXFL-vRzcr6



SYNOPSIS

This project presents large-scale rainwater harvesting by designing roads with a slight tilt toward side channels. These channels collect runoff and direct it to treatment units for domestic use. The system reduces water wastage, prevents flooding, and provides a sustainable method to meet urban water needs through efficient rainwater management.

EXHIBIT CODE: RBVP/RM/9/09
NAME OF THE EXHIBIT: THE SOLAR POWERED MINI PUMP: WATER CONSERVATION AND RENEWABLE ENERGY IN ACTION
NAME AND CLASS OF PARTICIPANTS: ANVI MAYEKAR 9B
AANCHAL BARA 9A

YOUTUBE VIDEO LINK: https://youtu.be/WCyUf5fe2bY?si=Hp904RxHgpQgctO4



SYNOPSIS

This project demonstrates effective resource management using a solar-powered water pump. Solar panels capture sunlight and convert it into electricity, which operates the pump to supply water to crops. The system reduces dependence on conventional energy, supports sustainable farming, and promotes eco-friendly irrigation in agricultural areas.

EXHIBIT CODE: RBVP/RM/10/10
NAME OF THE EXHIBIT: RENEWABLE ENERGY SOURCE (WIND POWER)
NAME AND CLASS OF PARTICIPANTS: MUKUND SARASWAT

YOUTUBE VIDEO LINK: https://youtu.be/SB3UX2ALrMg?si=e3afbbT9uXiSnlC0



SYNOPSIS

This project demonstrates how a simple windmill model converts wind energy into electricity. The rotating blades turn a small generator, producing power to light LEDs. It illustrates the basic working of wind turbines, highlights the importance of renewable energy, and encourages sustainable alternatives to conventional electricity sources.

EXHIBIT CODE: RBVP/RM/8/07
NAME OF THE EXHIBIT: SMART WATER IN SMART CITIES
NAME AND CLASS OF PARTICIPANTS: SAANVI SHASHANK PATIL 10A
SHRAVANI KIRAN GAWADE10A
GAYATHRI RAVI 10A

YOUTUBE VIDEO LINK: HTTPS://YOUTU.BE/KRO6WYSHBS4?SI=H51F2YR7NJBY9NCY



SYNOPSIS

This project explores the management of water resources in metropolitan cities. It explains issues like high demand, wastage, and pollution, and highlights solutions such as rainwater harvesting, recycling wastewater, efficient supply systems, and conservation practices. The project emphasises sustainable planning to ensure reliable and adequate water for growing urban populations.

EXHIBIT CODE: RBVP/RM/10/12
NAME OF THE EXHIBIT: SOIL MOISTURE SENSOR
NAME AND CLASS OF PARTICIPANTS: KARTHIK R.KUMAR 10B
KUSHAL R. KUMAR 10B

YOUTUBE VIDEO LINK: HTTPS://YOUTU.BE/WPIDJE81ELE?SI=1HQFO-I7BNHNMHAX



SYNOPSIS

This project demonstrates an automatic plant watering system using a soil moisture sensor. The sensor monitors soil moisture levels and detects dryness. When moisture is low, it automatically activates a water pump to supply water to the plant. The pump switches off once adequate moisture is restored. This system helps conserve water and ensures efficient plant care.

EXHIBIT CODE: RBVP/RM/10/13
NAME OF THE EXHIBIT: WATER CONSERVATION AND MANAGEMENT
NAME AND CLASS OF PARTICIPANTS: SOWMYA C. 10B

SYNOPSIS

This project highlights effective resource management through rainwater harvesting. Rainwater is collected and stored for reuse. After collection, the water undergoes a filtration process using layers of pebbles, sand, charcoal, and cotton to remove impurities. The filtered water can then be used for domestic and gardening purposes. The project promotes water conservation and sustainable use of natural resources.





TRANSPORT AND COMMUNICATION

EXHIBIT CODE: RBVP/TC/7/14
NAME OF THE EXHIBIT: DRIVER MONITORING SYSTEM
NAME AND CLASS OF PARTICIPANTS: HRIDAYA GROVER 7B

YOUTUBE VIDEO LINK: https://youtu.be/0M-CxBrpGEM?si=caYg2ZdzIdhUfN45

SYNOPSIS

The Driver Awakening System is an innovative safety project designed to prevent accidents caused by driver drowsiness. It uses an IR sensor to continuously monitor the driver's eye movements. When prolonged eye closure is detected, the system responds in multiple stages by activating an alarm, triggering vehicle immobilisation, and releasing a water spray to alert the driver. This project highlights the use of technology to enhance road safety and reduce fatigue-related accidents.

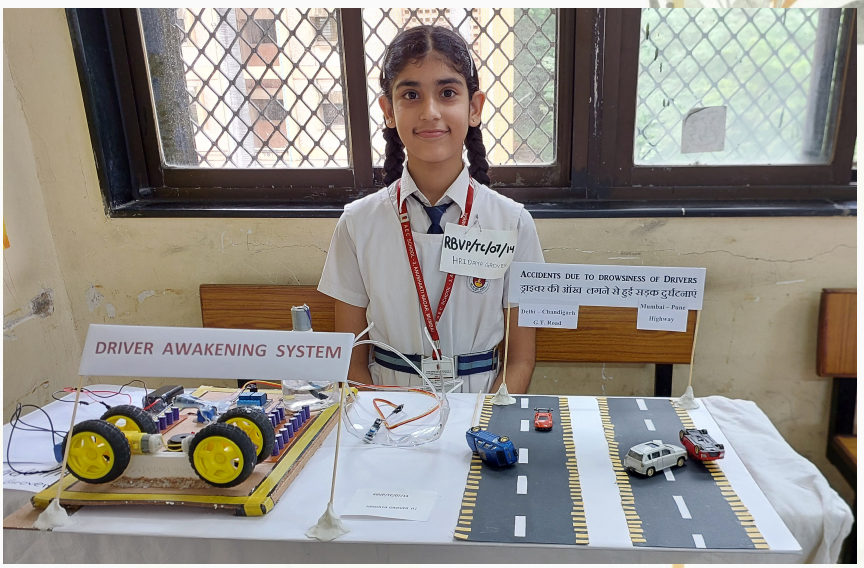


EXHIBIT CODE: RBVP/TC/7/15
NAME OF THE EXHIBIT: ANTI SLEEP ALARM FOR CAR DRIVERS
NAME AND CLASS OF PARTICIPANTS: TANMAY SHYAM SAWANT 7B

YOUTUBE VIDEO LINK: https://youtu.be/LeGt38Q-FY8?si=f5RXXxdqP0mfzy7w
https://youtu.be/RgcbkEHFVyY?si=lCJITiZyV7JLWV02



SYNOPSIS

This project focuses on a device that detects psychological and behavioural indicators of driver drowsiness and alerts the driver to regain attention. An IR sensor continuously monitors the driver's eye state. When drowsiness is detected, the sensor triggers a buzzer and automatically stops the car. Once the driver's eyes return to a normal state, the alarm turns off and the system resets. The project emphasises the importance of technology in improving road safety.

EXHIBIT CODE: RBVP/TC/7/16
NAME OF THE EXHIBIT: LIFE LANE
NAME AND CLASS OF PARTICIPANTS: ADITYA R. 7A
MANTHAN KAMBLE 7A

YOUTUBE VIDEO LINK: https://youtu.be/7eIAtPnrTPA?si=ERdRtKbRa3V2pewA

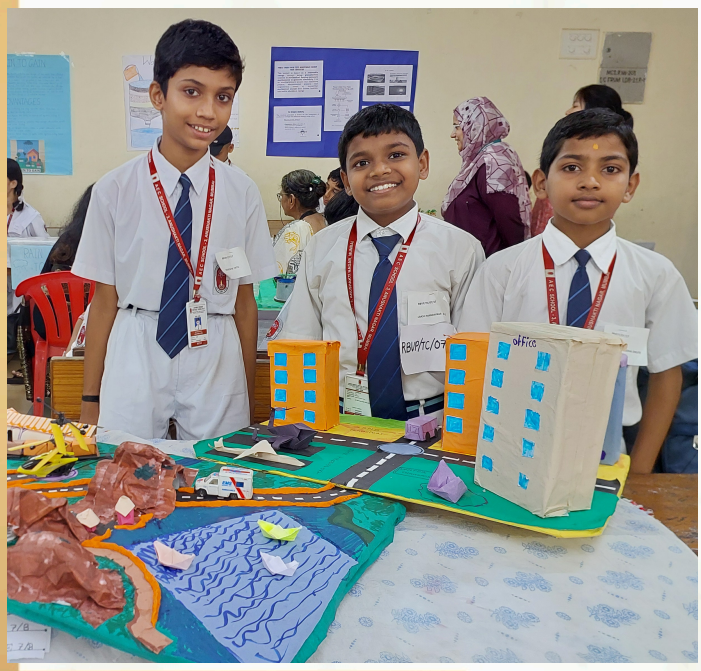


SYNOPSIS

This project focuses on enabling the swift movement of emergency vehicles such as ambulances through congested roads. The system detects the presence of an emergency vehicle and automatically controls traffic signals to provide a clear and faster route. By reducing delays at intersections, the project helps emergency services reach their destination quickly, thereby saving lives and improving urban traffic management.

EXHIBIT CODE: RBVP/TC/7/17
NAME OF THE EXHIBIT: ADVANCED TRANSPORTATION
NAME AND CLASS OF PARTICIPANTS: LAKSH MANDAVKAR 7B
SAMARTH SILISIDHA DHUTE 7B
BHAVESH M. PATIL 7B

YOUTUBE VIDEO LINK: https://youtu.be/qbS501Jk7Ww?si=lNHaYJnRH-1B4Fsw



SYNOPSIS

This project explores fast transportation solutions to improve connectivity between villages and cities. It highlights the use of underground tunnels for rapid road or rail travel and helicopters for aerial transport in areas with difficult terrain. These modes reduce travel time, enhance accessibility, and support economic and social development in rural regions. The project emphasises the role of modern transportation in regional growth and efficient mobility.

EXHIBIT CODE: RBVP/TC/7/18
NAME OF THE EXHIBIT: PANAMA CANAL
NAME AND CLASS OF PARTICIPANTS: SIDRA ABDUL SALAM 7A

YOUTUBE VIDEO LINK: HTTPS://YOUTU.BE/QS6EKA0HO6G?SI=19EVBT4HHYI-AX2R

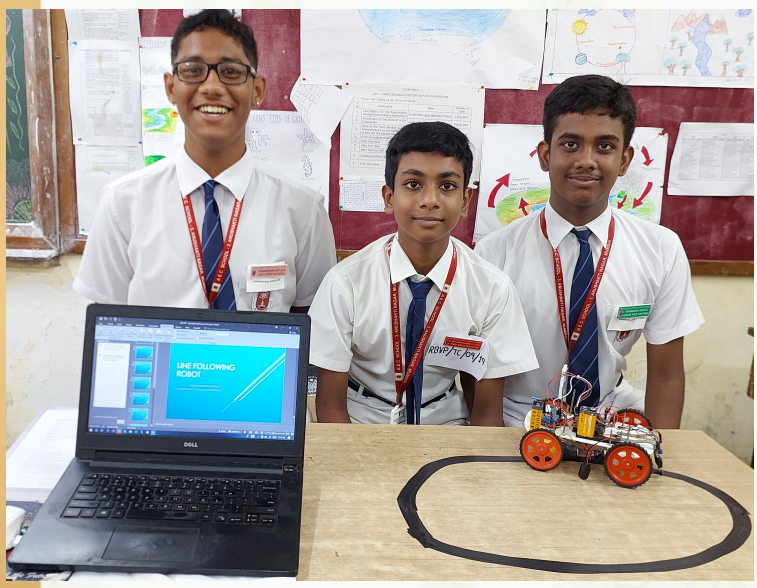
SYNOPSIS

This project explains the working of the Panama Canal with special focus on its lock gate system. The canal uses a series of locks to raise and lower ships between different water levels. Each lock gate opens and closes using powerful mechanical and hydraulic systems, allowing water to flow in or out of the chambers. This controlled movement lifts ships up to higher levels and safely lowers them back to sea level. The project highlights the canal's engineering excellence and its importance in global maritime transport.



EXHIBIT CODE: RBVP/TC/9/19
NAME OF THE EXHIBIT: LINE FOLLOWING ROBOT
NAME AND CLASS OF PARTICIPANTS: SAI SRICHARAN J. 9A
GHANAKSHA SINGH JAT 9A
HARIHARASUDHAN M. KONAR 9A

YOUTUBE VIDEO LINK: HTTPS://YOUTU.BE/A9ZLVYOAZE4?SI=APTYCS75MYIYR6-R



SYNOPSIS

This project involves the design and working of a line following robot that moves along a predefined path. The robot uses two IR sensors to detect the line. Since IR sensors do not detect black colour, black tape is used to create the path. An Arduino UNO acts as the brain of the robot, processing signals from the sensors. Based on these signals, the Arduino sends commands to the motor driver, which controls the motors and guides the robot along the line. This project demonstrates basic robotics, sensor technology, and automation principles.

EXHIBIT CODE: RBVP/TC/10/21
NAME OF THE EXHIBIT: HYDROGEN CARS
NAME AND CLASS OF PARTICIPANTS: JAISUDHA KHATUA 10A

YOUTUBE VIDEO LINK: HTTPS://YOUTU.BE/FKXGOIU35WY?SI=J1EGHT_97716FSGK



SYNOPSIS

This project explores the working of hydrogen-powered cars using magnesium hydride and water as a source of hydrogen. When magnesium hydride reacts with water, hydrogen gas is released. This hydrogen is then used to generate energy for running the vehicle. The project highlights an alternative clean energy source for transportation and demonstrates how hydrogen fuel can help reduce pollution and dependence on fossil fuels.

WASTE MANAGEMENT



EXHIBIT CODE: RBVP/WM/6/22
NAME OF THE EXHIBIT: FOOD AND WASTE MANAGEMENT
NAME AND CLASS OF PARTICIPANTS: MANASI PANKAJ PATIL 6A
JANHAVI AMOL PAWAR 6A
RIDDHI ASHISH GADGE 6A

YOUTUBE VIDEO LINK: HTTPS://YOUTU.BE/YZGHVYGH5DM?SI=1UTMOCQF9R7SFDJF



SYNOPSIS

This project focuses on an integrated waste management system where waste collected in dustbins is transported to a processing factory. The waste is sent underground to a crusher, where it is broken down and mixed with oil for further processing. The processed waste is then converted into biogas, which can be used as a renewable fuel. In addition, recyclable materials are separated to produce reusable products. This project highlights sustainable waste disposal, energy generation, and resource recovery.

EXHIBIT CODE: RBVP/WM/6/23
NAME OF THE EXHIBIT: PROCESSING , MANAGING AND RECYCLING OF E-WASTE
NAME AND CLASS OF PARTICIPANTS: SUHANYA SAHOO 6A
RIDHDI DEVIDAS PAWAR 6A
KIMAYA AIWALE 6A

SYNOPSIS

This project focuses on the safe processing, management, and recycling of electronic waste (e-waste). Discarded electronic items are collected and segregated into reusable and non-reusable components. Valuable materials such as metals, plastics, and glass are recovered through proper recycling processes, while hazardous substances are safely treated. The project highlights the importance of responsible e-waste management to reduce environmental pollution and conserve natural resources.



EXHIBIT CODE: RBVP/WM/7/24
NAME OF THE EXHIBIT: PLASTIC RECYCLE
NAME AND CLASS OF PARTICIPANTS: KESHAV KANKHAR 7B



SYNOPSIS

This project focuses on effective plastic waste management by recycling waste plastic into useful new products. Collected plastic waste is sorted, cleaned, and processed through shredding and melting. The recycled plastic is then moulded into items such as tiles, containers, benches, or decorative products. This project highlights the importance of recycling plastic to reduce pollution, conserve resources, and promote sustainable environmental practices.

EXHIBIT CODE: RBVP/WM/7/25
NAME OF THE EXHIBIT: SMART DUSTBIN
NAME AND CLASS OF PARTICIPANTS: DHYAN NARYN 7A
ANSH NILESH HARKE 7A
SAURABH KHARE 7A

YOUTUBE VIDEO LINK: https://youtu.be/4tZxHz0NBfg?si=kLFhk0ypVVkEmnP2

SYNOPSIS

This project presents an automated waste separation system using an Arduino Uno, Adafruit Motor Shield, and multiple sensors. An ultrasonic sensor detects the presence of waste, a proximity sensor identifies metal objects, and an IR sensor detects plastic. Based on the detected material, servo motors guide the waste into the appropriate bins. A DC motor drives a conveyor belt to transport the waste through the system. This project demonstrates efficient waste segregation using automation and sensor technology.

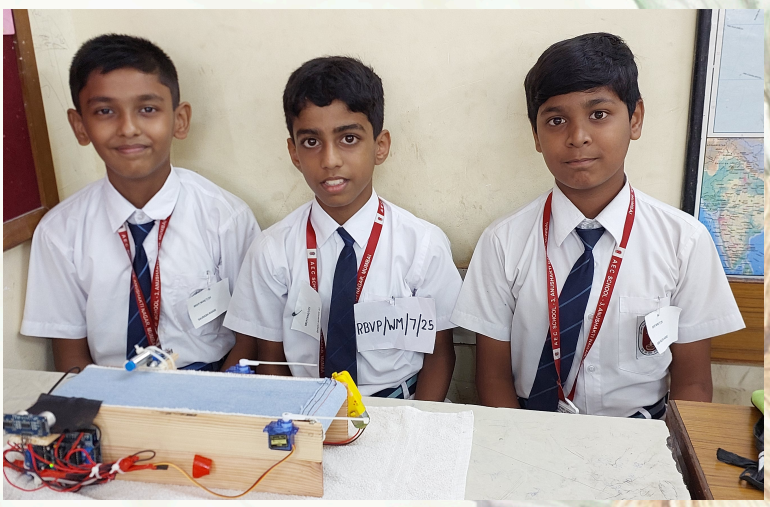


EXHIBIT CODE: RBVP/WM/7/26
NAME OF THE EXHIBIT: SMART CITY WASTE MANAGEMENT
NAME AND CLASS OF PARTICIPANTS: SHLOK DIGHE 7A
VEDANT MANDAVKAR 7A

YOUTUBE VIDEO LINK: https://youtu.be/grQh9orJl3o?si=FFdnSgAhXmBTmtF_



SYNOPSIS

This project focuses on effective waste management through the principles of reducing, reusing, and recycling. It emphasises minimising waste generation, converting waste into reusable materials, and promoting sustainable practices to protect the environment. The project demonstrates practical methods for managing household, industrial, and electronic waste, highlighting its importance for a cleaner and healthier Earth.

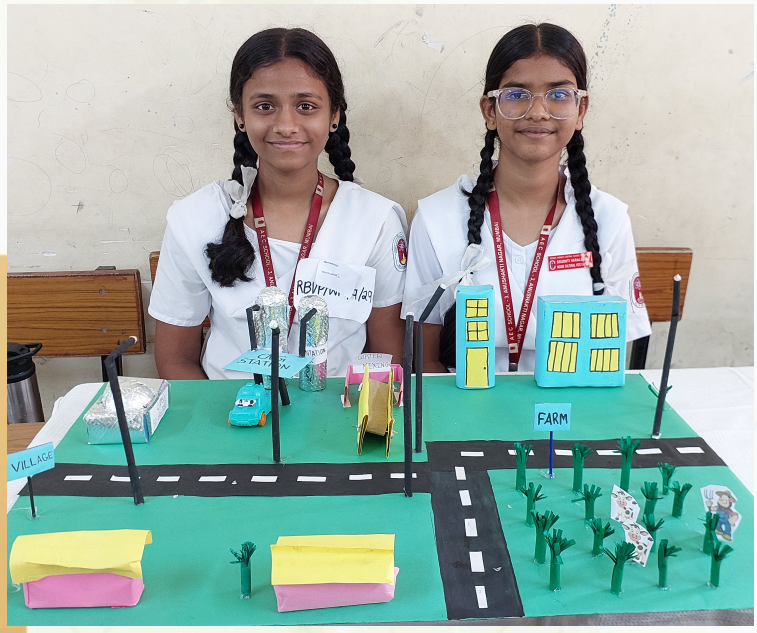
EXHIBIT CODE: RBVP/WM/8/27
NAME OF THE EXHIBIT: RAIN WATER HARVESTING
NAME AND CLASS OF PARTICIPANTS: SAMARTH DHAVALE 8B

SYNOPSIS

This project demonstrates how collected rainwater can be made suitable for other uses through filtration. Rainwater is collected and passed through layers of pebbles, sand, charcoal, and cotton to remove impurities. The filtered water can then be used for domestic purposes, gardening, or other non-drinking needs. This project emphasises water conservation and promotes sustainable use of natural resources.



EXHIBIT CODE: RBVP/WM/8/28
NAME OF THE EXHIBIT: BIODEGRADABLE WASTE MANAGEMENT
NAME AND CLASS OF PARTICIPANTS: SRUSHTI CHAVAN 9A
SRUSHTI VARALE 9A



SYNOPSIS

This project demonstrates an effective model for managing biodegradable waste through collection, segregation, and composting. It shows how organic materials are converted into nutrient-rich compost using eco-friendly techniques. The project highlights hands-on methods to minimise environmental impact and promote sustainable waste management practices.

EXHIBIT CODE: RBVP/WM/9/29
NAME OF THE EXHIBIT: E-WASTE MANAGEMENT
NAME AND CLASS OF PARTICIPANTS: TANISHK SHARMA 9B
PARTH PATIL 9A

YOUTUBE VIDEO LINK: https://youtu.be/eeQZsB3VhJ8?si=tBLfImDbwmMziiw_

SYNOPSIS

This project presents a model of an E-Waste Management and Recycling Centre. It demonstrates how electronic waste can be safely collected, sorted, and recycled. The model explains the recovery of valuable metals like gold and the prevention of health and environmental hazards from harmful chemicals. It highlights practical, eco-friendly solutions for sustainable electronic waste management.




LUMINA

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PROJECT NUMBER – S1
TITLE OF THE PROJECT - AUTOMATIC TABLE FAN
NAME OF THE PARTICIPANT STUDENTS - NAKUL HARSHAL KHAIRNAR – 4A
ADARSH MANGAL MAURYA – 4A



SYNOPSIS -

This project presents a battery-free automatic fan powered by mechanical energy from rubber bands, using cardboard and sticks. It demonstrates energy conversion from potential to kinetic as the bands release, spinning the blades. The model highlights principles of mechanical force and energy transfer, showcasing innovative, electricity-free solutions for everyday applications.

PROJECT NUMBER – S2
TITLE OF THE PROJECT - WATER RECYCLING
NAME OF THE PARTICIPANT STUDENTS - KAVISH SANTOSH MAGAR 4A,
AARUSH AKASH DANANE 4A

SYNOPSIS -

This project demonstrates water recycling, showing how wastewater is treated for reuse in irrigation and industry. Using cardboard, cotton, stones, and paints, the model illustrates the hydrologic cycle, including evaporation, condensation, and precipitation. It emphasises water conservation, purification processes, and resource protection, providing a practical, visual representation of sustainable water management.



PROJECT NUMBER – S3
TITLE OF THE PROJECT - SOLAR SYSTEM
NAME OF THE PARTICIPANT STUDENTS - ATHARV AJIT 4A
DEEP AMRIT PURTY 4A



SYNOPSIS -

This project illustrates the solar system, showcasing planetary motion around the Sun using LED bulbs and painted cardboard. It explains Earth's rotation (causing day and night), revolution (causing seasons), and gravitational forces. The model introduces astronomy concepts, highlighting the Sun's role as an energy source and unique planetary features, engaging young learners with simple, creative materials.

PROJECT NUMBER – S4
TITLE OF THE PROJECT – GO, GREEN, GO SOLAR
NAME OF THE PARTICIPANT STUDENTS - MANASVI MAHESH BIRJE 4A, SHARANYA RAMDAS CHAVAN 4A

SYNOPSIS -

This project showcases the Surya Ghar – Muft Bijli Yojna, demonstrating how solar panels generate free electricity via the photovoltaic effect. Using solar panels, wires, and LEDs, the model shows battery charging and powering small appliances. It promotes renewable energy for cost savings, pollution reduction, and sustainability, encouraging adoption of solar power for environmental benefits.



PROJECT NUMBER – S5
TITLE OF THE PROJECT - POLYHOUSE FARMING IN INDIA
NAME OF THE PARTICIPANT STUDENTS - NIYAAN KRISHNAJI MAHADESHWAR 4A, AARAV MEENA 4A



SYNOPSIS -

This project explores polyhouse farming, a greenhouse technology using transparent covers to regulate temperature, humidity, and light for enhanced crop growth. The model, built with cardboard, transparent sheets, and planting cups, demonstrates increased crop yield, water conservation, and off-season cultivation of fruits, vegetables, and flowers. It highlights how polyhouses protect crops from pests and adverse weather, promoting sustainable farming and food security.

PROJECT NUMBER – S6
TITLE OF THE PROJECT - WASTE WATER TREATMENT
NAME OF THE PARTICIPANT STUDENTS - SVARA BARNWAL 4A, VIGNESH VINOD JADHAV 4A

SYNOPSIS -

This project features a wastewater treatment model using stones, sand, charcoal, and cotton to filter impurities. It demonstrates stepwise purification for water reuse, highlighting filtration principles and conservation. The model promotes sustainable water management, raising awareness about reducing pollution and ensuring clean water availability through cost-effective methods.



PROJECT NUMBER – S7
TITLE OF THE PROJECT - **GREEN ENERGY FOR A BRIGHTER FUTURE**
NAME OF THE PARTICIPANT STUDENTS - **PANKHURI CHOUDHARY 4A,**
SHIVALIKA CHANDRA 4A



SYNOPSIS -
This project explores renewable energy, demonstrating electricity generation via solar and wind models. Using panels and turbines with LEDs, it shows how photons and mechanical energy produce power. The model, including electric vehicle charging stations, emphasises reduced fossil fuel use, cleaner air, and sustainable energy for environmental preservation and future generations.

PROJECT NUMBER – S8
TITLE OF THE PROJECT - **EARTHQUAKE DETECTOR MODEL**
NAME OF THE PARTICIPANT STUDENTS - **TAKSH SATISH SHEBARE**

SYNOPSIS -
This project presents an earthquake alarm detector using a pendulum-like nut, copper wires, buzzer, and LEDs to signal ground vibrations. The device completes a circuit during shaking, demonstrating seismology principles like inertia and motion sensors. It showcases early warning systems' potential to save lives and guide safer construction in earthquake-prone areas.



PROJECT NUMBER – S9
TITLE OF THE PROJECT - **THE ROCK CYCLE: FORMATION, CHANGE AND RECYCLING**
NAME OF THE PARTICIPANT STUDENTS – **GARGI BAKALKAR 4B,**
SURAVI SAMEL 4B



SYNOPSIS -
This project models the rock cycle, illustrating how rocks transform into igneous, sedimentary, and metamorphic types through melting, cooling, heat, pressure, and erosion. Using a cardboard base, newspaper volcano, and arrows, it demonstrates continuous cycling under natural forces.

PROJECT NUMBER – S10
TITLE OF THE PROJECT - WATER CYCLE MODEL
NAME OF THE PARTICIPANT STUDENTS - KARUNYA GORULE 4B, VINAY METRE 4B

VIDEO LINK – https://youtu.be/VrcCSBHji6M?feature=shared

SYNOPSIS -

This project illustrates the water cycle, showing evaporation, condensation, precipitation, and collection using a mini pump, battery, air tube, LED bulb, and dhoop stick in a transparent container. It simulates water vapour forming clouds and rain, emphasising the cycle's role in rainfall and life sustainability with simple materials.



PROJECT NUMBER – S11
TITLE OF THE PROJECT - RAIN DETECTOR
NAME OF THE PARTICIPANT STUDENTS - NAIVIKA RAVIRAJ KHARAT 4B, AVANI PRAVIN PANSARE 4B



SYNOPSIS -

This project presents a rain detector using a sensor with metal blades that activate a buzzer and LED circuit when wet. It applies conductivity principles to detect environmental changes, with applications in agriculture and home protection. Materials include sensors, wires, batteries, and a mounting board, with optional microcontroller integration.

PROJECT NUMBER - S12,
TITLE OF THE PROJECT - SAVE EARTH SAVE ENVIRONMENT MODEL
NAME OF THE PARTICIPANT STUDENTS - SWARA KISHOR GAVANDE 4B, SNEHA GUPTA 4B

SYNOPSIS -

This project promotes environmental conservation through reducing plastic waste, water, and electricity use. Using cardboard, crafting paper, LEDs, and a motor, it models sustainable practices like recycling and tree planting. It emphasises Earth's life-supporting role and the need for eco-friendly solutions to combat pollution.



PROJECT NUMBER – S13
TITLE OF THE PROJECT - CHANDRAYAAN
NAME OF THE PARTICIPANT STUDENTS - LOKESH M VAIRALKAR 4B, ARNAV A PATIL 4B

VIDEO LINK – https://youtu.be/1HrZY-2WFDI?feature=shared



SYNOPSIS -

This project educates on India's Chandrayaan-3 mission, focusing on lunar science and engineering. Using cardboard, foam board, and markers, it models spacecraft components to explain orbital mechanics, propulsion, and remote sensing. The project highlights mission objectives and scientific insights, drawing from NCERT and ISRO resources.

PROJECT NUMBER – S14
TITLE OF THE PROJECT - WASTE MANAGEMENT
NAME OF THE PARTICIPANT STUDENTS - JEETESH KUMAR S 4B, VASUDHA WAGHMARE 4B

SYNOPSIS -

This project focuses on waste management, applying strategies for collection, transportation, and recycling to minimise health and environmental risks. Using recycled paper, plastic, wooden sticks, and compost, it demonstrates waste processing to protect humans, wildlife, and ecosystems. The model emphasises efficient disposal methods for sustainable resource management.



PROJECT NUMBER – S15
TITLE OF THE PROJECT - MICROSCOPE,
NAME OF THE PARTICIPANT STUDENTS - ESHWAR ANAND 4B, VEER SONURE 4B



SYNOPSIS -

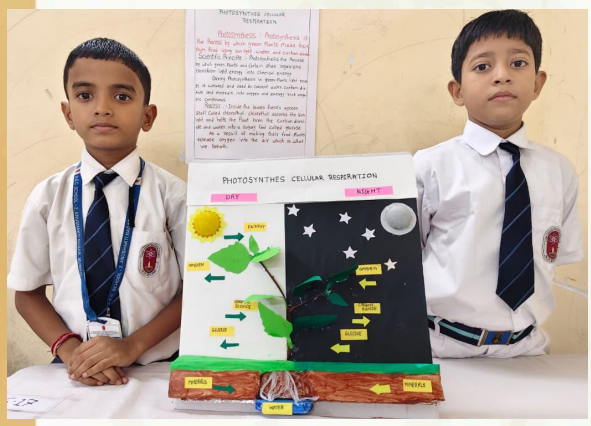
This project explores the microscope, invented by Robert Hooke in 1666, which magnifies small objects for detailed study. It highlights applications in education, research, and hobbies, covering simple, compound, and digital microscopes. The overview demonstrates optical principles for enlarging minute details, serving as an educational introduction to this scientific tool.

PROJECT NUMBER – S16
TITLE OF THE PROJECT - WATER FILTER
NAME OF THE PARTICIPANT STUDENTS - KAVYANSH VIVEK BHAGADIA 4B , AMOL PRAJAPATI 4B



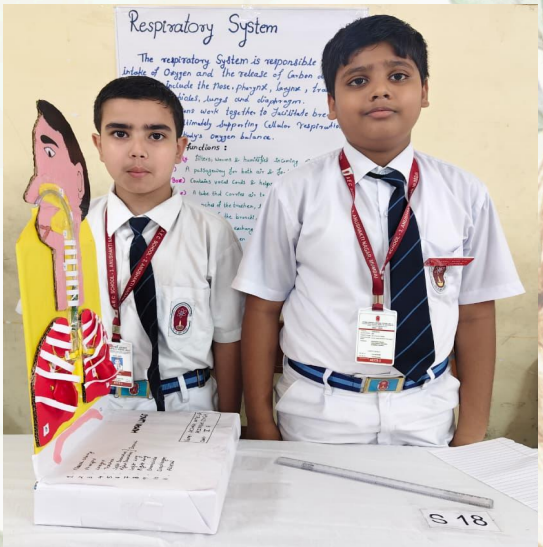
SYNOPSIS -
This project demonstrates a natural water purification system using rocks, cotton, sand, pebbles, and charcoal in a modified plastic bottle. Dirty water is filtered through these layers, producing clean water. It applies filtration principles to remove impurities, promoting access to clean water using simple, recycled materials.

PROJECT NUMBER – S17
TITLE OF THE PROJECT - PHOTOSYNTHESIS CELLULAR RESPIRATION
NAME OF THE PARTICIPANT STUDENTS - VIRAJ D. PATIL 4B
KARAMPURI SAI 4B



SYNOPSIS -
This project explains photosynthesis, where plants use chlorophyll to convert sunlight, water, and carbon dioxide into glucose and oxygen. It highlights the transformation of light energy into chemical energy, emphasising plants' role in producing breathable air. The model uses basic principles to demonstrate this essential life process.

PROJECT NUMBER – S18
TITLE OF THE PROJECT - HUMAN RESPIRATORY SYSTEM
NAME OF THE PARTICIPANT STUDENTS - AKSHRAJ PATEL 5A,
PRIYANSHU SINGH 5A



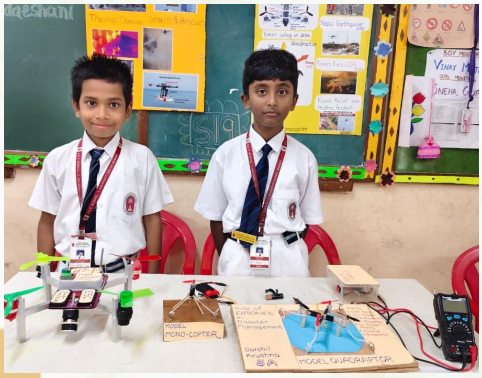
SYNOPSIS -
This project models the human respiratory system, using balloons as lungs and straws as airways to simulate breathing. A syringe demonstrates inhalation and exhalation, illustrating gas exchange via pressure changes. It highlights the biological processes of oxygen intake and carbon dioxide removal.

PROJECT NUMBER – S19

TITLE OF THE PROJECT - **ROLE OF DRONES FOR DISASTER MONITORING AND EMERGENCY RELIEF**

NAME OF THE PARTICIPANT STUDENTS - **DARSHIL KAMBLE 5A, KRUSHNA LOKHANDE 5A**

VIDEO LINK – https://youtu.be/x7JXvyJTpJ0?feature=shared
https://youtu.be/QOSkopVOAfg?feature=shared



SYNOPSIS -

This project explores drones for disaster management, using cameras and delivery systems for monitoring and relief in floods, earthquakes, and fires. Built with a plastic or aluminium frame, motors, and propellers, it demonstrates lift and thrust principles, showcasing drones' potential for rapid response and victim assistance.

PROJECT NUMBER – S20

TITLE OF THE PROJECT - **GLOBAL WARMING & RENEWABLE ENERGY**

NAME OF THE PARTICIPANT STUDENTS - **YASHVI S KUSHWAHA 5A**

VIDEO LINK – https://youtu.be/G2FFedWDuyM?feature=shared



SYNOPSIS -

This project addresses global warming by promoting renewable energy sources like solar, wind, and hydro to reduce greenhouse gas emissions. It models clean energy systems to demonstrate non-emissive power generation, emphasising sustainable development and environmental protection for a cleaner future.

PROJECT NUMBER – S21

TITLE OF THE PROJECT - **HUMAN FOLLOWING ROBOT**

NAME OF THE PARTICIPANT STUDENTS - **S. MANSASHREE 5A, OVI JABRE 5A**

SYNOPSIS -

This project showcases a human-following robot-drone using sensors for autonomous tracking in health care, defence, and assistance. Built with a cardboard box, DC motor, and control card, it demonstrates sensor-based navigation and Bluetooth connectivity, highlighting practical applications of robotics in real-world scenarios.



PROJECT NUMBER – S22
TITLE OF THE PROJECT - EARTHQUAKE ALARM WORKING MODEL
NAME OF THE PARTICIPANT STUDENTS - MANAS BHUSHAN SHINDE 5A, MUGDHA AJIT SHETYE 5A



SYNOPSIS -
This project presents an earthquake detector alarm using a vibration sensor to trigger a buzzer and LED. Built with cardboard, copper wires, and a 9V battery, it detects ground movements, applying sensor principles to provide early warnings for safety in earthquake-prone areas.

PROJECT NUMBER – S23
TITLE OF THE PROJECT - BUOYANCY
NAME OF THE PARTICIPANT STUDENTS - RAAGYA PRADHAN 5A, PRIT MORE 5A



SYNOPSIS –
This project applies basic principles of science to explore floating and sinking in water, focusing on density and buoyancy. Using a glass bowl with water, thermocol, marble, coin, various shaped objects, and a measuring flask, it demonstrates how density determines if objects float or sink and how buoyancy allows heavy items like iron ships to float by displacing water. Procedure involves dropping objects, measuring displaced water, and discussing real-world examples like swimming pools and boat holes.

PROJECT NUMBER – S24
TITLE OF THE PROJECT - VOLCANO ERUPTION
NAME OF THE PARTICIPANT STUDENTS - DAKSHITA CHAVAN 5A,



SYNOPSIS –
This project explores volcano eruptions, demonstrating the process using a model made from cardboard, newspaper, and baking soda-vinegar reactions to simulate lava flow. It explains volcanic activity, magma movement, and gas release, highlighting safety and environmental impacts. The model engages learners with simple materials, illustrating tectonic plate interactions and eruption triggers, fostering an understanding of geological processes and their effects on Earth's landscape.

PROJECT NUMBER – S25
TITLE OF THE PROJECT - OMNI-DIRECTIONAL MOVEMENTS ON A VEHICLE
NAME OF THE PARTICIPANT STUDENTS - HADI ABDUL SALAM 5A,
OMKAR KAHAR 5A



SYNOPSIS -

This project features a vehicle with Mecanum wheels for omni-directional movement, enhancing navigation in confined spaces. Using a Pico W microcontroller, motors, and a custom steel body, it is controlled via a mobile app. The model demonstrates efficient manoeuvrability, inspired by engineering principles and Mecanum wheel technology.

PROJECT NUMBER – S26
TITLE OF THE PROJECT - WASTE WATER PURIFICATION MODEL
NAME OF THE PARTICIPANT STUDENTS - DIVYA BODHARE 5A,
SPRIHA PATIL 5A



SYNOPSIS -

This project demonstrates wastewater purification using a cardboard-based filtration system with pebbles, sand, and cotton. It channels purified water for reuse in gardens or homes, applying filtration principles to remove impurities and promote environmental cleanliness through sustainable water management.

PROJECT NUMBER – S27
TITLE OF THE PROJECT - MAKING A SIMPLE HYDROGEN GENERATOR
NAME OF THE PARTICIPANT STUDENTS - SWARAJ GOVINDA KOLI 5A,
ANSH RAJBHAR 5A

SYNOPSIS -

This project demonstrates a hydrogen generator using electrolysis with old battery electrodes and salt water. Materials include metal plates, copper wires, a plastic jar, and a lighter to test the gas. It shows how recycled materials can produce hydrogen, applying basic electrochemical principles for sustainable energy exploration.

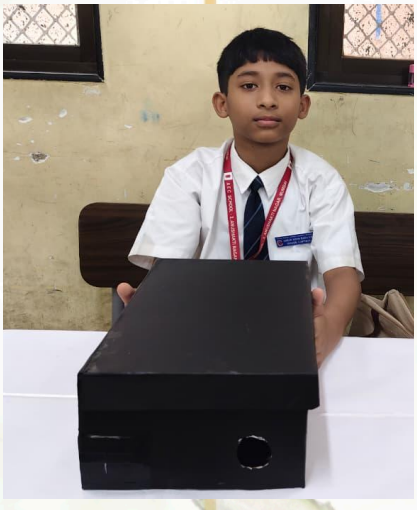


PROJECT NUMBER – S28
TITLE OF THE PROJECT - MAGNETIC LEVITATION TRAIN – A GLIMPSE INTO THE FUTURE OF TRANSPORTATION
NAME OF THE PARTICIPANT STUDENTS - CRYSTAL ANN MATHEW 5B, KARRI SREENIDHI 5B



SYNOPSIS -
This project demonstrates a Maglev train model using magnet repulsion for frictionless travel, powered by a solar panel concept. Built with PVC casing, disc magnets, and a fan, it showcases high-speed, clean-energy transportation, highlighting magnetic principles for future transport solutions.

PROJECT NUMBER – S29
TITLE OF THE PROJECT - EXPERIMENT ON LIGHT
NAME OF THE PARTICIPANT STUDENTS - AARON KEVIN BARA 5B



SYNOPSIS -
This project demonstrates light dispersion using a prism to separate white light into seven colours. A light source and screen show the spectrum, illustrating how colours bend differently in a denser medium, highlighting optical principles of light's component separation.

PROJECT NUMBER – S30
TITLE OF THE PROJECT – HYDROPONICS
NAME OF THE PARTICIPANT STUDENTS - DHANASHREE B. SAWANT BHOSALE 5B, SHRUTI MANE 5B



SYNOPSIS -
This project demonstrates hydroponics, growing plants without soil using water and nutrients. Using plastic cups, moong seeds, and cotton, it compares hydroponic and soil-based growth, highlighting faster results and modern farming benefits. Observations over 5-7 days show root and plant health differences.

PROJECT NUMBER – S31
TITLE OF THE PROJECT - **SEED GERMINATION (NATURAL FARMING)**
NAME OF THE PARTICIPANT STUDENTS – **BHAVIK PATIL 5B,**
CHAITANYA SANJAY BELEKAR 5B

SYNOPSIS -
This project explores seed germination in natural farming, using soil, pulse seeds, and glasses to observe root and shoot growth. It demonstrates the plant life cycle, showing how seeds develop into seedlings under suitable conditions, emphasising natural agricultural processes.

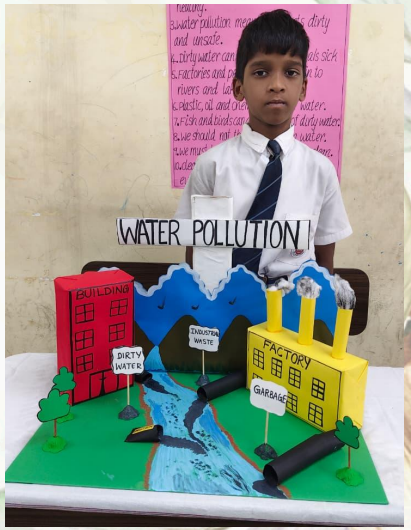


PROJECT NUMBER – S32
TITLE OF THE PROJECT - **RAINWATER HARVESTING**
NAME OF THE PARTICIPANT STUDENTS - **TEJASVI RAJENDRA KOKARE 5B,**
PRANJAL VIJAY JADHAVAR 5B



SYNOPSIS -
This project demonstrates rainwater harvesting using a cardboard model with tubing, pebbles, and a container to collect and filter roof runoff. It applies hydrology and gravity principles to store water for irrigation or flushing, promoting water conservation and groundwater maintenance.

PROJECT NUMBER – S33
TITLE OF THE PROJECT - **WATER POLLUTION**
NAME OF THE PARTICIPANT STUDENTS - **JEROME CHINNA JANDRAPALLI 5B**



SYNOPSIS -
This project addresses water pollution's impact on health, nature, and equity, modelling polluted water sources with harmful substances. It demonstrates degradation effects and suggests protective measures, emphasising the importance of clean water and community action amid climate change challenges.

PROJECT NUMBER – S34
TITLE OF THE PROJECT - DIGESTIVE SYSTEM
NAME OF THE PARTICIPANT STUDENTS - VEDIKA NARENDRA HEDAU 5B, RITHIKA RAVI BALRAM 5B



SYNOPSIS -
This project models the digestive system, using cardboard, PVC pipes, and syringes with coloured water to simulate food breakdown and nutrient absorption. It demonstrates mechanical and chemical digestion, illustrating how the body processes food for energy and growth.

PROJECT NUMBER – S35
TITLE OF THE PROJECT - UNIQUE HYDROELECTRIC POWER PLANT
NAME OF THE PARTICIPANT STUDENTS - MILIN BALWANTBHAI KANTHARIA 5B, SWARAJ S DHAGE 5B



SYNOPSIS -
This project presents a hydroelectric power plant using river water to rotate turbines and a DC dynamo for village electricity. Built with a turbine, dynamo, and belt, it offers a dam-free, sustainable energy solution, harnessing kinetic energy for rural power needs.

PROJECT NUMBER – S36
TITLE OF THE PROJECT - SOLAR SYSTEM
NAME OF THE PARTICIPANT STUDENTS - PARINEETI YOGESH SWAMI 5B, MONISHA ARUNDADHIYAR 5B



SYNOPSIS -
This project illustrates the solar system, showcasing planetary motion around the Sun using a creative model with painted cardboard and coloured objects representing planets. It demonstrates Earth's rotation (causing day and night) and revolution (causing seasons), along with gravitational forces. The model highlights the Sun's role as an energy source and introduces astronomy concepts, engaging learners with simple materials like paint and paper, fostering an understanding of cosmic structure.

PROJECT NUMBER – S37

TITLE OF THE PROJECT - THE GREENHOUSE EFFECT AND GLOBAL WARMING

NAME OF THE PARTICIPANT STUDENTS - PARMAR KAUSHAL 5B ,
RUTURAJ RAHUL SURYAWANSHI 5B



SYNOPSIS -

This project raises awareness about the greenhouse effect and global warming, showing how pollution traps heat and disrupts ecosystems. Using cardboard, recycled bottles, and toy models, it contrasts healthy and polluted Earth, promoting sustainability through education on reducing environmental impact.

PROJECT NUMBER – S38

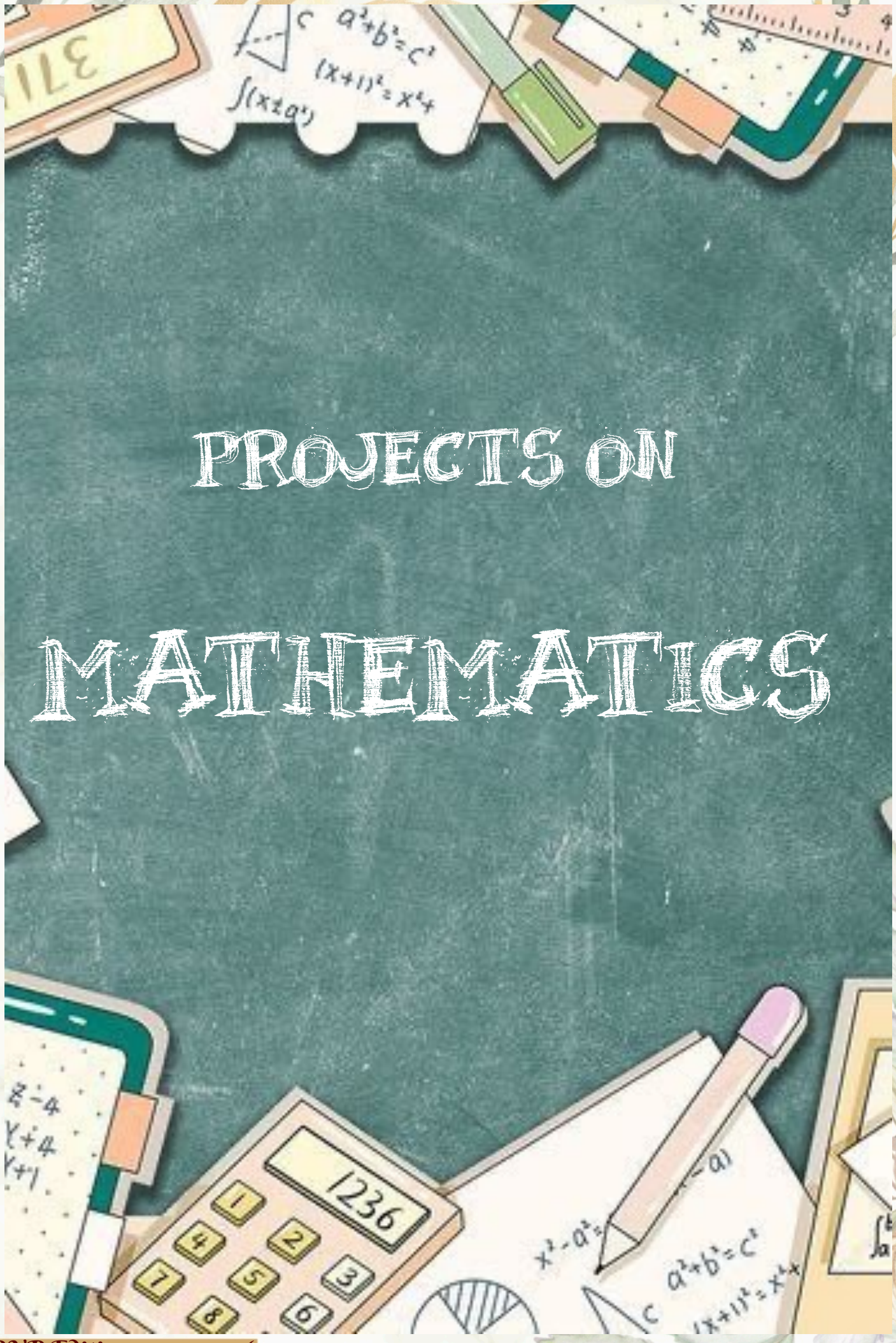
TITLE OF THE PROJECT - RENEWABLE SOURCES OF ENERGY

NAME OF THE PARTICIPANT STUDENTS - VIHAN PANDIT PAWAR 5B,
KARAN SANTOSH CHAUHAN 5B



SYNOPSIS -

This project models renewable energy sources like solar, wind, and water, using thermodynamics and electromagnetism to demonstrate sustainable power generation. It highlights the environmental benefits of clean energy, promoting a shift from conventional sources for a sustainable future.


PROJECTS ON
MATHEMATICS

PROJECT NUMBER – M1
TITLE OF THE PROJECT - MULTIPLICATION CALCULATOR
NAME OF THE PARTICIPANT STUDENTS - AVIKA CHATURVEDI – 4A
VARADA VIKRAM JAGTAP – 4A

VIDEO LINK – https://youtu.be/2L2KEsXT_nI?feature=shared



SYNOPSIS -

This project develops a multiplication calculator using cardboard and sliding number strips inspired by Napier's bones. It simplifies calculations for young learners by aligning factors on a grid to reveal products quickly and accurately.

PROJECT NUMBER – M2
TITLE OF THE PROJECT - 3D SHAPES: WORKING MODEL
NAME OF THE PARTICIPANT STUDENTS - ADVAIT DHANAJI CHANDEKAR – 4A
BHARGAV RAVISH MORE – 4A

VIDEO LINK – https://youtu.be/4eDtdfL7Wl8?feature=shared



SYNOPSIS -

This interactive model teaches 3D shapes such as cubes and spheres through geometry and basic electrical circuits on a cardboard base. Buttons connect to LEDs and a buzzer, lighting up and sounding for correct shape-name matches. It boosts recognition, observation, and reasoning skills via hands-on learning with materials like LEDs and a 9V battery.

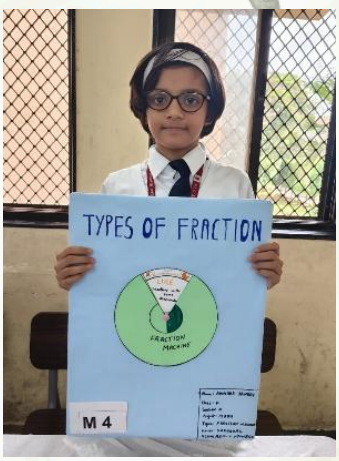
PROJECT NUMBER – M3
TITLE OF THE PROJECT - MEASURING TOOLS
NAME OF THE PARTICIPANT STUDENTS - SAMYAK ANANDA INGALE – 4A
SOHAN VINOD PARAB – 4A



SYNOPSIS -

This project explores various measuring tools for length, weight, volume, time, and temperature, applying key mathematical principles. Handmade devices include cardboard rulers, stick-based balance scales, and simple containers to demonstrate accurate measurements

PROJECT NUMBER – M4
TITLE OF THE PROJECT - FRACTIONS
NAME OF THE PARTICIPANT STUDENTS - ANWESHA PANDEY – 4A
VIDEO LINK – https://youtu.be/ngtJDySitMQ?feature=shared



SYNOPSIS -
The Fraction Wheel model visualises fractions with colourful divided circles on cardboard, illustrating proper, improper, and equivalent types. It shows relationships and real-world uses, such as sharing pizza or dividing resources. Built with chart paper and pins for rotation, it supports conceptual learning through interactive exploration.

PROJECT NUMBER – M5
TITLE OF THE PROJECT - DIVISION: WORKING MACHINE
NAME OF THE PARTICIPANT STUDENTS - NIYATI NILESH JAWALIKAR – 4A
RIDDHI WANKHEDE – 4A
VIDEO LINK – https://youtu.be/EB2pLomlnKk?feature=shared
SYNOPSIS -
The Division Machine demonstrates division via repeated subtraction using cardboard, chart paper, and ice cream sticks. Selecting dividend and divisor pops out a peg showing the quotient, making abstract concepts tangible. It engages students in fun, hands-on exploration, improving understanding and learning outcomes.



PROJECT NUMBER – M6
TITLE OF THE PROJECT - TYPES OF ANGLES
NAME OF THE PARTICIPANT STUDENTS - TEJAS B NILEWAD – 4A
TEJASHWINI B NILEWAD – 4A



VIDEO LINK – https://youtu.be/ozE60BL-cbA?feature=shared
SYNOPSIS -
This project explores acute, right, and obtuse angles using geometry principles on a cardboard model with adjustable arms and a protractor. It demonstrates how lines form angles and measures them accurately. Materials like paper and glue create visual examples, enhancing comprehension.

PROJECT NUMBER – M7
TITLE OF THE PROJECT - **GEOMETRICAL PARK**
NAME OF THE PARTICIPANT STUDENTS - **SHARAYU S CHAVAN – 4A**



VIDEO LINK – https://youtu.be/2JyrCfdfkDE?feature=shared

SYNOPSIS -

This project designs a park model incorporating geometric shapes like squares, circles, and cubes to apply area, volume, symmetry, and spatial reasoning concepts. Built with cardboard, craft sticks, and paints, it showcases geometry's practical role in creating functional and aesthetic spaces.

PROJECT NUMBER – M8
TITLE OF THE PROJECT - **MATHS IN DAILY LIFE**
NAME OF THE PARTICIPANT STUDENTS - **AYUSHMAN SHARMA – 4A**
YUKTA DEVENDRA NAGARKAR – 4A

VIDEO LINK – https://youtu.be/NmaTHwW8gh8?feature=shared



SYNOPSIS -

This project highlights mathematics' essential role in daily activities across professions like cooking, farming, painting, doctoring, engineering, music, and tailoring. It emphasises how arithmetic smooths tasks in kitchens, sports, business, travel, and shopping. Through visual examples and explanations, it showcases math's universal relevance and encourages its application for perfection in life.

PROJECT NUMBER – M9
TITLE OF THE PROJECT - **CLOCK AND ANGLES**
NAME OF THE PARTICIPANT STUDENTS - **ANUMEGHA ACHARYA – 4B**
HARSHITA S. PATIL – 4B

SYNOPSIS -

This project demonstrates clock angles, exploring acute, obtuse, and right types formed by hour and minute hands on a cardboard model. Movable paper hands and a protractor illustrate time-angle relationships through rotation. It enhances geometry understanding in everyday time-telling, making learning fun and practical.



PROJECT NUMBER – M10
TITLE OF THE PROJECT - **SHAPES**
NAME OF THE PARTICIPANT STUDENTS - **TANAY KOLI – 4B**
ADHIRAJ SHINDE – 4B



SYNOPSIS -
This project introduces 2D and 3D shapes like triangles, squares, circles, and cubes, detailing properties and real-world examples on cardboard cutouts with coloured paper and strings. It creates an interactive display for identifying shapes, calculating perimeters, and areas. Hands-on activities foster spatial reasoning and observation, encouraging appreciation for geometry in daily life.

PROJECT NUMBER – M11
TITLE OF THE PROJECT - **DIVISION**
NAME OF THE PARTICIPANT STUDENTS - **AADITYA MAHAWAR – 4B**



SYNOPSIS -
This project models division as sharing and grouping with visual aids on cardboard, using beads and dividers to demonstrate quotients and remainders interactively. It allows students to divide numbers hands-on, reducing errors and promoting conceptual understanding in arithmetic.

PROJECT NUMBER – M12
TITLE OF THE PROJECT - **TYPES OF ANGLES**
NAME OF THE PARTICIPANT STUDENTS - **DEVESH PATIL – 4B**



VIDEO LINK – https://youtu.be/-_ifxG2O6mg?feature=shared

SYNOPSIS -
This project models angle types including acute, right, obtuse, straight, and reflex using geometric principles on coloured paper and cardboard with a protractor. It visually demonstrates measurements and formations for better comprehension. The interactive tool aids learning angles in navigation, design, and everyday objects.

PROJECT NUMBER – M13
TITLE OF THE PROJECT - ROMAN NUMERALS
NAME OF THE PARTICIPANT STUDENTS - RIYA SAWANE – 4B
ANVIKA JOGU – 4B



SYNOPSIS -
This project explores Roman numerals, used in clocks, books, and events like the Super Bowl. Students created a model with cardboard, numeral strips, and index cards attached with split pins to display Roman numerals interactively. Roman numerals are still used in various contexts, including clock faces, book chapters, and historical dates on buildings. They are also used in the names of sporting events like the Super Bowl and the Olympics, as well as in royal families to denote generational succession.

PROJECT NUMBER – M14
TITLE OF THE PROJECT - LCM
NAME OF THE PARTICIPANT STUDENTS - PANSHUL SARPOLE – 4B
RUDRA JADHAV – 4B



SYNOPSIS -
This project simplifies finding the LCM using the division method, aiding mathematical operations like fractions. Students use beads, paper cutouts, and trays to create a model, following steps to divide by prime numbers and multiply divisors.

PROJECT NUMBER – M15
TITLE OF THE PROJECT - MEASUREMENTS
NAME OF THE PARTICIPANT STUDENTS - RIYA KOLAMBEKAR – 4B
SWARA NITIN SALUNKE – 4B



SYNOPSIS -
This project examines measurement units for length, weight, and capacity, applying them to real-life scenarios like shopping and cooking. Using rulers, weighing scales, and containers made from cardboard, it demonstrates conversions and accuracy.

PROJECT NUMBER – M16
TITLE OF THE PROJECT - TYPES OF ANGLES
NAME OF THE PARTICIPANT STUDENTS - KHUSHEE HUMBRE – 4B
AAROHI ROKADE – 4B



SYNOPSIS -
This project showcases angle types using cardboard, chart paper, and a protractor, aiding navigation, and design understanding. A stick in a rotating circle demonstrates angles, offering a novel, hands-on approach to geometric concepts.

PROJECT NUMBER – M17
TITLE OF THE PROJECT - PLACE VALUE SYSTEM
NAME OF THE PARTICIPANT STUDENTS - AVIN MAJUMDAR – 4B
PRANJAL RAJU KAMBLE– 4B



SYNOPSIS -
This project illustrates the place value system for understanding large numbers, using columns for units, tens, hundreds, and beyond. Built with cardboard charts, coloured beads, and number cards, it allows interactive placement to form and read numbers.

PROJECT NUMBER – M18
TITLE OF THE PROJECT - MEASUREMENT TOOLS
NAME OF THE PARTICIPANT STUDENTS - RUDRA KASAR – 5A
VIHAN SABLE – 5A



SYNOPSIS -
This project explores tools for measuring length, weight, volume, time, and temperature, applying mathematical principles. It builds a foundation in measurement concepts, enhancing problem-solving skills and appreciating real-life applications through hands-on activities.

PROJECT NUMBER – M19
TITLE OF THE PROJECT - FRACTIONS
NAME OF THE PARTICIPANT STUDENTS - HIMANSHU IDE – 5A



SYNOPSIS -
This project visualises fractions through divided shapes and real-life examples like dividing food or money. Using cardboard wheels, coloured papers, and pins, it demonstrates proper, improper, and equivalent fractions interactively.

PROJECT NUMBER – M20
TITLE OF THE PROJECT - MATHS IN DAILY LIFE
NAME OF THE PARTICIPANT STUDENTS - ADVIKA JANU – 5A
ELINA TAMBOLI – 5A



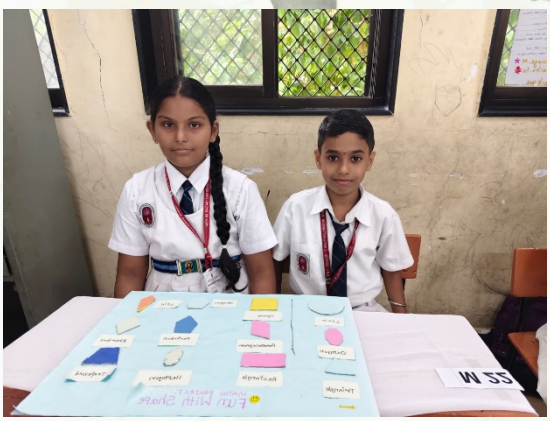
SYNOPSIS -
This project reveals math's role in daily tasks like shopping, cooking, and time management using arithmetic, percentages, and graphs. Built with recycled cardboard and LED lights, it promotes awareness of math's practical importance, encouraging logical thinking and optimisation in routines for students.

PROJECT NUMBER – M21
TITLE OF THE PROJECT - ATM
NAME OF THE PARTICIPANT STUDENTS - SHANAYA MANE – 5A
MANISHA DEVIDAS GAJRE – 5A

SYNOPSIS -
This project models an Automatic Teller Machine (ATM) to demonstrate money management, addition, subtraction, and budgeting. Using cardboard, paper currency replicas, and buttons, it simulates transactions and balance calculations.



PROJECT NUMBER – M22
TITLE OF THE PROJECT - FUN WITH SHAPES
NAME OF THE PARTICIPANT STUDENTS - KOMAL KAMBLE – 5A
ANISH ADE – 5A



SYNOPSIS -
This project engages students with geometric shapes through games and puzzles, exploring properties like sides, angles, and symmetry. Built with cardboard tangrams, coloured cutouts, and strings, it encourages shape manipulation to form figures.

PROJECT NUMBER – M23
TITLE OF THE PROJECT - TYPES OF TRIANGLES
NAME OF THE PARTICIPANT STUDENTS - TRISHA SHETTY – 5A
HARSHITA NANGARE – 5A



SYNOPSIS -
This model explains triangle types based on sides and angles, where the sum is 180°. Built to aid understanding, it uses a fun approach to showcase classifications, enhancing mathematical concepts. It serves as an educational tool for better triangle comprehension.

PROJECT NUMBER – M24
TITLE OF THE PROJECT - EXPLANATION OF ROMAN NUMBERS
NAME OF THE PARTICIPANT STUDENTS - AUSTIN KIRO – 5A
ADVAIT KATE – 5A



SYNOPSIS -
This project aims to educate about Roman numerals, which are not widely known, using basic principles of mathematics. It seeks to explain their use and significance, enabling students to apply this knowledge. The rationale emphasises the need for awareness, making it an educational tool for better understanding.

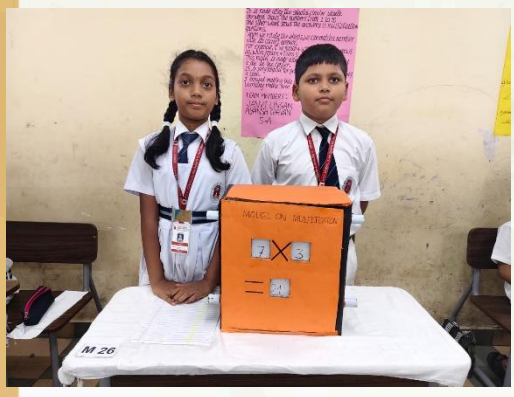
PROJECT NUMBER – M25
TITLE OF THE PROJECT - **TYPES OF ANGLES**
NAME OF THE PARTICIPANT STUDENTS - **PARTH BADGUJAR – 5A**
KHUSHAL GAWADE – 5A



SYNOPSIS -
This project models six angle types (acute, right, obtuse, etc.) using geometry principles. Constructed with coloured paper, cardboard, and a protractor, it visually demonstrates angle measurements, aiding comprehension. It's an interactive tool for learning geometric concepts effectively.

PROJECT NUMBER – M26
TITLE OF THE PROJECT - **MODEL OF MULTIPLICATION**
NAME OF THE PARTICIPANT STUDENTS - **HYANSH CHAVAN – 5A**
JANVI LINGAM – 5A

VIDEO LINK – https://youtu.be/oIuS6KAvLSg?feature=shared



SYNOPSIS -
This rotating model simplifies multiplication for primary students through visual and kinaesthetic learning, addressing memorisation challenges. Using repeated addition, it fosters understanding with a hands-on approach. It makes math engaging and practical for younger learners.

PROJECT NUMBER – M27
TITLE OF THE PROJECT - **LCM**
NAME OF THE PARTICIPANT STUDENTS - **SWAPNIL TIDKE – 5A**



SYNOPSIS -
This project simplifies finding the LCM using the division method, aiding mathematical operations like fractions. Students use beads, paper cutouts, and egg trays to create a model, following steps to divide by prime numbers and multiply divisors. It enhances understanding of LCM through hands-on learning.

PROJECT NUMBER – M28
TITLE OF THE PROJECT - PYTHAGORAS THEOREM WORKING MODEL
NAME OF THE PARTICIPANT STUDENTS - ARNAV GAJANAN SONURE – 5B
SIDDHANT PAPPU MHASKE – 5B



SYNOPSIS -
This project explains the Pythagorean theorem, relating hypotenuse to leg squares in right triangles, with applications in navigation and construction. Though details are sparse, it highlights practical uses, fostering mathematical problem-solving skills through theoretical exploration.

PROJECT NUMBER – M29
TITLE OF THE PROJECT - DIVISION MACHINE
NAME OF THE PARTICIPANT STUDENTS - AVANTHIKA S – 5B
TIRTHA YOGESH JEJURKAR – 5B

VIDEO LINK – https://youtu.be/iH7siQ-I9Wg?feature=shared



SYNOPSIS -
This model uses repeated subtraction to teach division, helping beginners grasp the concept visually. Built with cardboard, chart paper, and ice cream sticks, it demonstrates quotient and remainder using sticks, making math interactive and educational.

PROJECT NUMBER – M30
TITLE OF THE PROJECT - MATHEMATICAL SHAPES WORKING MODEL
NAME OF THE PARTICIPANT STUDENTS - AYAN AKHTAR – 5B
KRITVI PAILAWAT – 5B



SYNOPSIS -
This project raises awareness of shapes like triangles and rectangles using coloured cardboard and a battery-driven needle. It aids in solving trigonometry and mensuration problems by teaching area, perimeter, and volume, offering a hands-on learning experience through self-designed methods.

PROJECT NUMBER – M31
TITLE OF THE PROJECT - **PIZZA TOPPINGS FRACTION**
NAME OF THE PARTICIPANT STUDENTS - **GOPIKA MADHVARAJ BHAT – 5B**
TRISHA BHAGWANDIN KANOJIYA – 5B



SYNOPSIS -
This project illustrates fractions' role in cooking and construction using a rotating cardboard circle with coloured papers. It demonstrates fraction rules and real-life applications, making learning interactive with a refill stick.

PROJECT NUMBER – M32
TITLE OF THE PROJECT - **AREA AND PERIMETER**
NAME OF THE PARTICIPANT STUDENTS - **DISHITA SANTOSH WALUNJ – 5B**
MANSI BHUSHAN SHINDE – 5B



SYNOPSIS -
This project explores area and perimeter using square grid paper and string to demonstrate their real-life applications in tiling and fencing. It calculates these for shapes like rectangles, enhancing geometric understanding through hands-on activities.

PROJECT NUMBER – M33
TITLE OF THE PROJECT - **TYPES OF ANGLES WORKING MODEL**
NAME OF THE PARTICIPANT STUDENTS - **NILESH M KONAR – 5B**
RIDDHANT TATUDE – 5B

SYNOPSIS -
This model showcases angle types using cardboard, chart paper, and a protractor, aiding navigation and design understanding. A stick in a rotating circle demonstrates angles, offering a novel, hands-on approach to geometric concepts.



PROJECT NUMBER – M34
TITLE OF THE PROJECT - **GEOMETRICAL PARK**
NAME OF THE PARTICIPANT STUDENTS - **SAMIKSHA SIDDHAPPA MADBAL – 5B**
TANISHA RAKESH PRASAD – 5B



SYNOPSIS -
Geometrical Park is a creative project that demonstrates the beauty of mathematics through a park model made with cardboard, coloured papers, and threads. The park showcases different geometric shapes, angles, and circles in an engaging way. It helps students visualise and understand basic geometry concepts beyond textbooks. The activity promotes hands-on learning, creativity, and problem-solving. It effectively links classroom learning with practical application, making geometry fun and interactive.

PROJECT NUMBER – M35
TITLE OF THE PROJECT - **REAL LIFE EXAMPLES OF REAL NUMBERS**
NAME OF THE PARTICIPANT STUDENTS - **VIKAT LOKHANDE – 5B**
DAKSH DIPAK MESHRAM – 5B



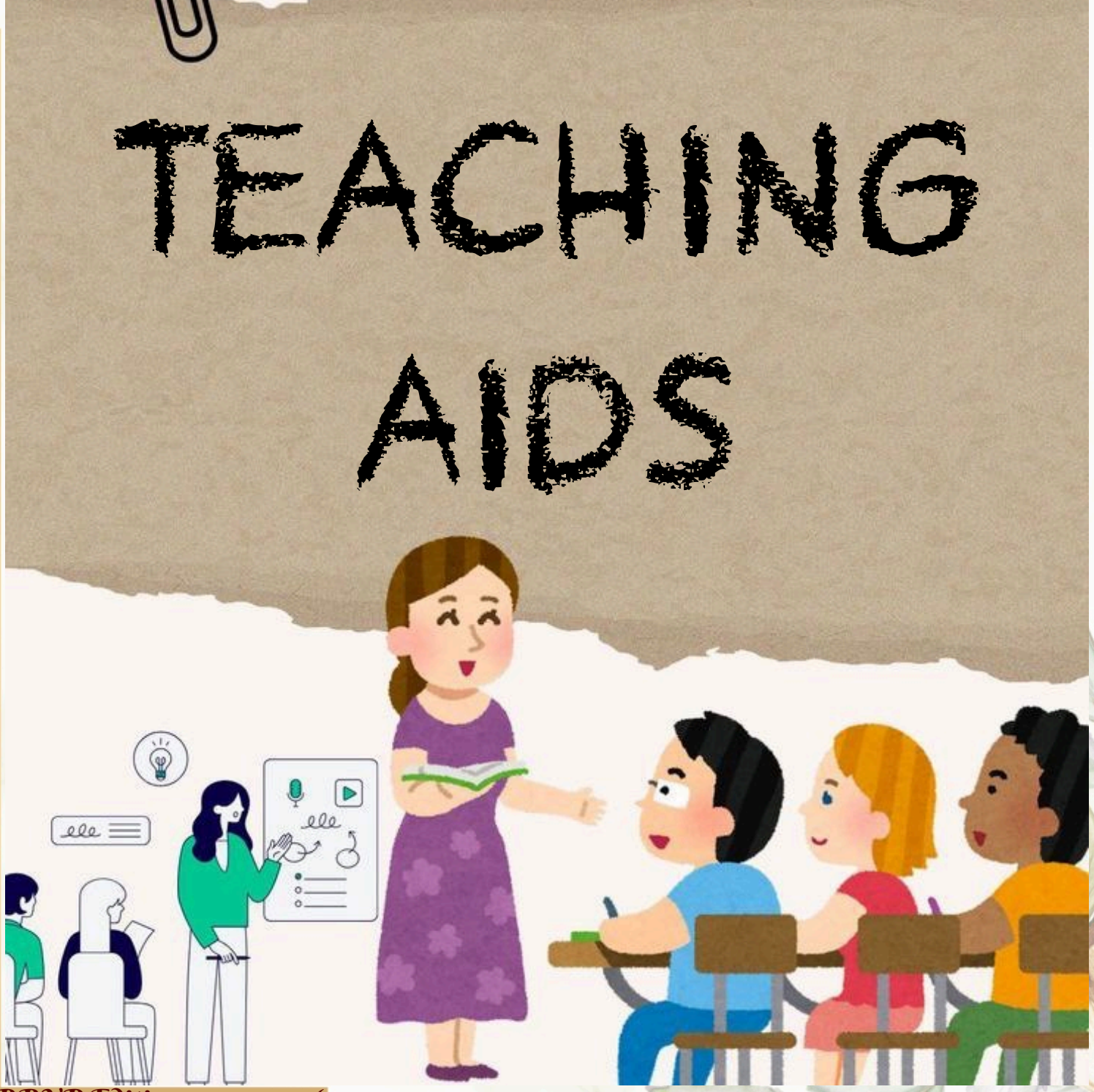
SYNOPSIS -
This exhibit uses a painted wooden board with cardboard segments to display real numbers' (rational and irrational) real-life examples. It enhances understanding of quantities and measurements, mounted on a roller base, promoting practical mathematical application.

PROJECT NUMBER – M36
TITLE OF THE PROJECT - **NUMBER SYSTEM**
NAME OF THE PARTICIPANT STUDENTS - **ANJALI VIJAY JADHAV – 5B**
SWARA VIJAY JADHAV – 5B



SYNOPSIS -
This project simplifies understanding number types—odd, even, prime, composite, whole, natural, rational, and irrational—using a thermocol model with coloured cutouts. It highlights their roles in basic operations, with an interactive approach for sorting numbers, enhancing conceptual clarity for students in a fun way.

TEACHING AIDS



TEACHING AID: **PYTHAGORAS THEOREM**

NAME OF THE TEACHER: **MRS. SUKANYA MAJUMDAR (TGT-MATHEMATICS)**

SYNOPSIS

A simple and engaging teaching aid to demonstrate the Pythagorean theorem can be created using coloured dice. Arrange three sets of dice to form squares along the sides of a right-angled triangle—one set on each of the two shorter sides (a and b), and the largest set on the hypotenuse (c). By ensuring the number of dice on the squares of sides a and b visually equals the total number of dice used on the square of side c, students can clearly observe that $a2 + b2 = c2$. This hands-on activity helps learners understand the geometric relationship of the theorem through counting and visual comparison, making the concept both fun and memorable.

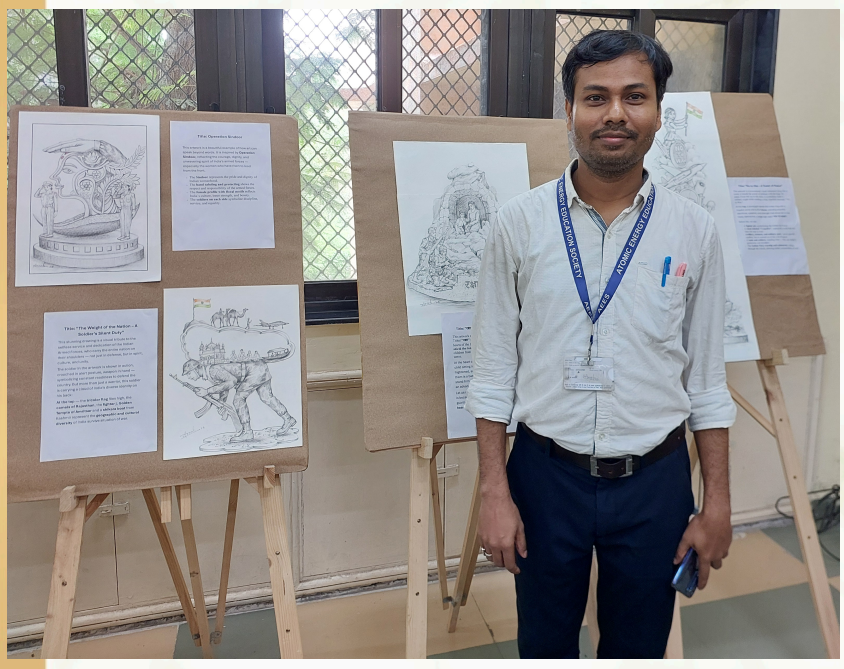


TEACHING AID: **OPERATION SINDOOR – THE WEIGHT OF THE NATION, RAKSHA, NO TO WAR**

NAME OF THE TEACHER: **MR. ARNAB KHATUA (TGT-ART)**

SYNOPSIS:

This exhibition of drawings honours the sacrifice, strength, and responsibility of Indian soldiers. Operation Sindoor depicts the valour and courage of soldiers who safeguard the nation, symbolising their readiness to shed blood for our freedom. The Weight of the Nation – A Soldier's Silent Duty reminds us how each soldier silently carries the hopes, safety, and pride of an entire country on their shoulders.



Raksha symbolises the protective bond between soldiers and citizens, where every soldier stands as a shield to guard our lives and our future.

No to War conveys a powerful message that while soldiers are ready to fight, the ultimate goal is peace — war should be the last option, and harmony the first.

Together, these artworks inspire students to respect the armed forces, value peace, and understand the true meaning of patriotism — courage with compassion.

TEACHING AID: **FACTORISATION OF QUADRATIC EQUATIONS BY SQUARES AND RECTANGLES**

NAME OF THE TEACHER: **MRS. ATHULYA R. (TGT-MATHEMATICS)**

SYNOPSIS:

The topic Factorisation of Quadratic Equations by Squares and Rectangles aims to make the concept of factorisation simple and visual for students. The objective of this teaching aid is to help students understand how quadratic expressions can be represented and solved geometrically. Using chart paper or board drawings along with cut-outs of squares and rectangles, the terms of a quadratic equation such as , , and are shown as geometric shapes. The square represents , the rectangles represent linear terms, and the small square represents the constant. By arranging these shapes into a larger rectangle, students can see how the middle term is split for factorisation.



TEACHING AID: **GUESS THE ELEMENTS**

NAME OF THE TEACHER: **MRS. VIJAYA PRAMOD (TGT SS)- SCIENCE**



SYNOPSIS:

The periodic table is the foundation of chemistry, and understanding periodicity helps students build strong scientific concepts. This Teaching-Learning Material (TLM) presents the first 20 elements as an engaging game using riddles that highlight their properties and real-life applications across fields like medicine, industry, environment, and technology.

Vibrant colours, icons, and images make the material visually appealing and support visual learners, while riddles promote curiosity, critical thinking, and problem-solving. By gamifying learning, this TLM turns rote memorisation into an interactive experience, helping students understand the names, symbols, uses, and relevance of the first 20 elements in everyday life.

TEACHING AID: संधि

NAME OF THE TEACHER: MRS. RUPINDER KAUR (TGT-HINDI)



SYNOPSIS:

यह रंग-बिरंगा संधि-चार्ट संधि के प्रकारों को क्रमबद्ध रूप में समझाने के लिए बनाया गया है। इसमें अकारांत, इकारांत, उकारांत तथा अन्य स्वर-संधियों के उदाहरण स्पष्ट रूप से लिखे गए हैं। प्रत्येक घेरा एक नई संधि और उसके नियमों को दर्शाता है। यह चार्ट छात्रों को शब्दों के मेल-विच्छेद की प्रक्रिया आसानी से समझने में मदद करता है और व्याकरण को रोचक बनाता है।

TEACHING AID: शब्दांच्या जाती

NAME OF THE TEACHER: MRS. ANJALI UMALE (TGT-MARATHI)



SYNOPSIS:

मराठी व्याकरणात शब्दांच्या आठ जाती आहेत—नाम, सर्वनाम, विशेषण, क्रियापद, क्रियाविशेषण अव्यय, शब्दयोगी अव्यय, उभयान्वयी अव्यय आणि केवलप्रयोगी अव्यय. यापैकी नाम, सर्वनाम, विशेषण व क्रियापद हे विकारी शब्द असून त्यांत लिंग, वचन व विभक्तीनुसार बदल होतो. उर्वरित चार अव्यय प्रकार अविकारी असून त्यांत कोणताही बदल होत नाही.

शब्दांच्या जाती पुढीलप्रमाणे आहेत:

नाम—व्यक्ती, वस्तू, स्थान किंवा पदार्थाचे नाव.

सर्वनाम—नामाऐवजी वापरले जाणारे शब्द.

विशेषण—नामाबद्दल अधिक माहिती देणारे शब्द.

क्रियापद—क्रिया दर्शविणारे शब्द.

क्रियाविशेषण अव्यय—क्रियापदाची विशेष माहिती देणारे अविकारी शब्द.

शब्दयोगी अव्यय—नामाचा क्रियापदाशी संबंध दर्शविणारे शब्द.

उभयान्वयी अव्यय—दोन शब्द किंवा वाक्य जोडणारे शब्द.

केवलप्रयोगी अव्यय—भावना व्यक्त करणारे शब्द.

TEACHING AID: **GUARDING OUR COMPUTER WORLD**
NAME OF THE TEACHER: **MRS. PREETI KUMARI (PRT)**



SYNOPSIS:

This teaching aid introduces young learners to basic cyber safety. It explains how a "Cyber Security Guard" protects computers from dangers like viruses, unsafe websites, and strangers online. Through simple visuals and examples, students learn good habits—using strong passwords, not sharing personal information, and staying safe while using digital devices.

TEACHING AID: **PREPOSITIONS**
NAME OF THE TEACHER: **MRS. SWATI RAMAKANT KADAM (PRT SS)**

SYNOPSIS:

teaching aid was basically prepared for students of Classes 1,2 &3. It was exhibited during the Science & Mathematics Exhibition held on the 11th of July 2025. The teaching aid would help understand the relationship between a noun or a pronoun and the other words in a sentence. This 3 D teaching aid would enable the students to understand the concept in a very lucid way. The teaching aid primarily dealt with the prepositions like- in, on, under, behind, over, in front of, near, up, down in a simple manner.

Students will get a hands on experience while learning the concept of prepositions using this teaching aid which in turn will benefit the pupils in the teaching learning process.



TEACHING AID: संज्ञा के प्रकार

NAME OF THE TEACHER: श्रीमती अर्चना सिंह (PRT, एस. एस)

श्री अरुण कुमार (PRT)



SYNOPSIS:

यह प्रोजेक्ट हिंदी व्याकरण के एक महत्वपूर्ण अंग **संज्ञा (Noun)** पर आधारित है। संज्ञा वह शब्द है जिससे किसी व्यक्ति, वस्तु, स्थान, गुण या भाव का बोध होता है और यह वाक्य की मूल इकाई है। इसमें संज्ञा की परिभाषा, महत्व और उसके पाँच प्रमुख प्रकारों – व्यक्तिवाचक, जातिवाचक, भाववाचक, द्रव्यवाचक और समूहवाचक संज्ञा – का अध्ययन किया गया है। प्रत्येक प्रकार को उदाहरणों के माध्यम से स्पष्ट किया गया है ताकि समझ आसान हो। यह प्रोजेक्ट छात्रों को भाषा की नींव समझने, व्याकरणिक ज्ञान बढ़ाने और शुद्ध व प्रभावी वाक्य रचना करने में मदद करता है। निष्कर्ष - संज्ञा का सही ज्ञान भाषा को अधिक सशक्त और अभिव्यंजक बनाता है।

TEACHING AID: ADDITION MACHINE USING PAPER CUPS

NAME OF THE TEACHER: MRS. BINDU PILLAI (PRT SS)

MR. NANDKISHOR MAHADEV KHANGAR (PRT)



SYNOPSIS:

The Addition Machine is a simple and interactive teaching aid designed for Class 1 and 2 students to make learning addition fun and hands-on. The model is made using paper cups, number cards, and small objects (like beads, pebbles, or seeds).

Students often struggle with abstract numbers at the early primary level. This teaching aid provides a concrete, visual, and playful method for understanding addition.

TEACHING AID: स्वर व व्यंजन

NAME OF THE TEACHER: MRS. NILAM BHUNESAR (PRT)

SYNOPSIS:

मुलांना स्वर व व्यंजन यांविषयी स्पष्टीकरण देण्यासाठी वेगवेगळ्या शैक्षणिक साहित्याचा उपयोग करावा लागतो. मुलांना सहजपणे स्वर,व्यंजन शिकवता येते व मुलेही साहित्यांचा आस्वाद घेतात व त्यांना सहजरित्या ओळखता येतात आणि वाचू शकतात. त्याचप्रमाणे मुलांना स्वर व व्यंजन यांपासून तयार होणारे दोन अक्षरी शब्द व तीन अक्षरी शब्द बनवता येतात. अशाचप्रकारे वेगवेगळ्या शैक्षनिक साहित्य दाखवून मुलांना उत्तेजित करता येते.



TEACHING AID: ARTICLES “A” AND “AN”

NAME OF THE TEACHER: MRS. MEENA SHIVDAS (BV TR. SS)

SYNOPSIS:

This project is a teaching aid for pre-primary children to help them identify and use the indefinite articles “a” and “an” correctly. It introduces the basic rule: “a” is used before words beginning with a consonant sound, while “an” is used before words beginning with a vowel sound. Children practice article usage in both spoken and written English through engaging activities. The visual and activity-based approach makes grammar simple and fun. This project also improves vocabulary, sentence formation, and oral communication skills. Overall, it strengthens the foundation of English language learning in an easy and playful manner.



TEACHING AID: **NUMBO'S MAGICAL COUNTING ADVENTURE**
NAME OF THE TEACHER: **MRS. PRITI ROHRA (BV TR. SS)**



SYNOPSIS:

Numbo's Magical Counting Adventure is an innovative teaching aid created to develop number recognition and counting skills from 1 to 10. The aid features Numbo, a colourful monster with star-decorated arms and a tummy slot for number cards. Children count the stars, identify the correct number, and place it into Numbo's tummy. This playful, story-based activity strengthens number sense, accuracy, and fine motor skills. It makes early numeracy joyful, interactive, and confidence-building for young learners.

TEACHING AID: **COMBINED COLOUR AND SHAPE SORTING ACTIVITY**
NAME OF THE TEACHER: **MRS. SARITA JHA (BV TR.)**



SYNOPSIS:

In this activity, a child sorts items into categories based on two attributes simultaneously. This helps them move from simple categorisation (sorting by colour or shape separately) to more complex, multi-attribute thinking. Sorting tasks require students to categorise items based on shared attributes, such as shape, colour, or size. For young children, these activities are foundational for developing critical thinking, visual perception, and early math skills.

TEACHING AID: **CLIMB THE WORDS : READ AND ACT**
NAME OF THE TEACHER: **MRS. Y. SAVITHA KUMARI (BV TR.)**



SYNOPSIS:
This is a snakes and ladders inspired game for Balvatika 3 learners to strengthen CVC word reading. Rolling the dice, reading aloud, and acting out words. turns literacy into play and joyful learning

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TEACHING AID: **SENSE ORGANS**
NAME OF THE TEACHER: **MS. VARSHARANI BHISE (PRT)**
MS. BHAVNA ADHIKARI (PRT)

SYNOPSIS:



This 3D pop-up model is designed on the topic *Sense Organs* to introduce children to these five sense organs – eyes, ears, nose, tongue, and skin. Each organ is shown with real-life examples like a rose for smell and ice cream for taste. The model, made with chart paper and images, makes learning interactive and fun. It can be used in Nursery to Grade 2 for EVS/Science lessons, encouraging participation, curiosity, and better memory retention among young learners.

TEACHING AID: **LANDS OF EARTH**
NAME OF THE TEACHER: **MRS. VANDANA DANI (TGT-SOCIAL SCIENCE)**
MS. SARITA SINGH (TGT-SOCIAL SCIENCE)

SYNOPSIS:
This project describes the different types of land forms.



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LUMINA

WHAT IS LUMINA?

The Science Behind Light



ART ENLIGHTEN LIVES

Masterpieces That Shine

GET CREATIVE

The Projects to Brighten Your Day


LUMINA
ILLUMINATING YOUR DREAMS