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Shikaripura – 577 427, Shivamogga Road, Shivamogga Dist.
: 08187 – 222383, 222067 kumadvathibed@gmail.com www.kumadvathibed.in

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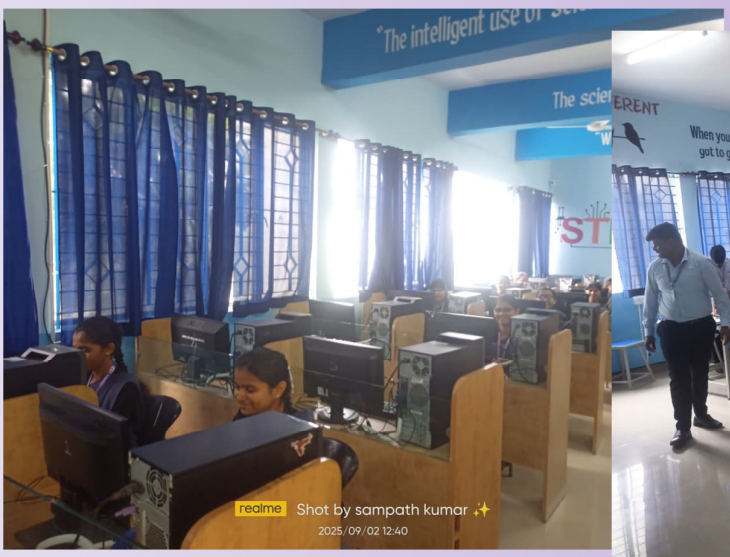
2024-25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I year B.Ed Student Teacher

Science Club 2024-25 Members Address List

Sl. No.	Address	Phone number & E - Mail ID	Photo
1	**Abhishek** S/o Nagaraj Jadar, Hireidagodu, Anavatti -577413, Soraba Taluk, Shivamogga Dist	9353543085 abhisheknjadar2002@gmail.com	
2	**Akshatha Balaganooru** D/o Hanumareddappa, Jalihal-584128, Sindanur Taluk, Raichur Dist.	7483336382 akshathab902@gmail.com	
3	**Amith C** S/o Chikkappa, Bannihatti, Veerapura -581210, Hirekerur Taluk, Haveri Dist.	7892432601 amit30dc@gmail.com	
4	**Anusha C** D/o Chandrappa H, Thimmapura, Anavatti- 577413, Soraba Taluk Shivamogga Dist.	7829249107 anushac882@gmail.com	
5	**Arpitha B** D/o Bangarappa D G, Jade (P) - 577419, Soraba Taluk, Shivamogga Dist,	8792085719 arpithabarpitha123@gmail.com	
6	**Bindu M A,** D/o Anandappa M N, Ambligola (P) - 577214, Shikaripura Taluk, Shivamogga Dist.	6362673084 binduma2002@gmail.com	
7	**Gulafshan** D/o P P Gulzar Ahmad, Azad Nagara, Anavatti - 577413, Soraba Taluk, Shivamogga Dist.	8310827758 abubakarabbu53@gmail.com	

8	**Kalpana S** D/o Subbaraya, Amblikoppa, Bennuru (P)- 577429 Soraba Taluk, Shivamogga Dist.	8792083564 ks7836079@gmail.com	
9	**Lavanya Annappa Naik,** D/o Annappa Naik, Bhashi (P) - 581318, Sirsi Taluk, Uttara Kannada Dist.	9591638367 naiklavanyanaik19@gmail.com	
10	**Monika B,** D/o Basavaraja, Tekkuru, Tavanandi (P), Soraba - 577429 Shivamogga Dist.	8904131857 bsmmonika953@gmail.com	
11	**Pallavi K R,** D/o Ramachandrappa K, Ramagondanahalli - 577514, Davanagere Taluk, Davanagere Dist.	7204220314 pallavikrpallavi0@gmail.com	
12	**Pavithralakshmi T M,** D/o Thimmappa A, Ajjagolmane, Arundi (P) -577223, Nyamathi Taluk, Davanagere Dist.	9632052166 pavitralakshmi240@gmail.com	
13	**Priyanka R** D/o Ramesh H M, Thimmapura, Anavatti- 577413 Soraba Taluk, Shivamogga Dist.	9110291056 priyanka056a@gmail.com	
14	**Ramya H R** D/o Rajappa H D, Near Government School, Hitturu, Bhairanakoppa (P) -577416 Shivamogga Taluk, Shivamogga Dist.	9972359193 ramyahr350@gmail.com	

15	**Savitha B** D/o Bhaskara, Chalamane, Yadajigalemane (P) - 577401Sagara Taluk, Shivamogga Dist.	6361649324 savithacb002@gmail.com	
16	**Saniya Parveen** D/o Rahamathulla M, Vinayaka Nagara, 14th Cross, Shikripura - 577427 Shivamogga Dist.	8296736428 saniya3309@gmail.com	
17	**Sharvari A M** D/o Manjunatha, Agasadi, Guddekoppa (P) - 577414, Thirthahalli Taluk, Shivamogga Dist.	9481500631 sharvariamsharvariam@gmail.com	
18	**Siddaraju Pujar** S/o Ashok Pujar, Baganakatte, Shikaripura Taluk - 577427, Shivamogga Dist.	9353989534 siddarajupujar@gmail.com	
19	**Shruthi R** C/o Prakash T M, Near Shadi Mahal, Hale Medhara Keri, Shikaripura -577427, Shivamogga Dist.	8088132910 shru80881@gmail.com	
20	**Suhaana K A** D/o Abdul Rahiman Kalekhan, Nehru colony, 2nd cross, Shiralakoppa -577428, Shikaripura Taluk, Shivamogga Dist.	7019918218 suhaanaka31@gmail.com	
21	**Yashodha** D/o Umesh, Third ward M B Nagara, Yaradona -583229, Karatagi Taluk, Koppala Dist.	9353389148 yashuhk48@gmail.com	

22	**Ajith Kumar** S/O Joseph, K.Mariammana Halli Raichur (Dist), Lingasguru (Tq) - 584125	7411384825 ajithkumarpenegounda@gmail.com	
23	**Asha K H** D/O krishnappa Ulli Gangamma layout shikaripura -577427	9353026202 chandru.r072024@gmail.com	
24	**Bhavana S Y** D/O Yallappa, Masadi, Masadi (post), Honnali (Tq), Davanagere (dist) - 577217	8861738698 bhavanasy2311@gmail.com	
25	**Bhavya K C** D/O Of Chandrashekhar chari islapura beedi Mallapura, savalanga (post), Shivamogga (Taluk), Shivamogga (dist). - 577225	8867068622 : kcbhavyamallapura@gmail.com	
26	**Chaithra H U** D/O Umesha H P Kolagi (AT) Shikaripura(TQ) Shivamogga(D) - 577433	6363167179 chaithrahuchaithrahu@gmailcom	
27	**Deeksha G** D/o Ganeshappa KP Karekoppa (AT), Shikaripura(TQ) Shivamogga(D)- 577447	9019998960 deekshadee1612@gmail.com	
28	**Girija S M** D/o of Maheswarppa S Nidage (Post), shimoga (taluk), shimoga (district). - 577222	9480036372 girijasmsushella@gmail.com	

29	**Kavana P T** D/O of Thimmappa, Nilogallu, Daginakatte (post), channagiri (Tq), Davanagere (Dist) - 577551.	7483433859 kavanapt2003@gmail.com	
30	**Kavya Shankarappa Lamani** D/o Shankrappa.Nukapura(V), Honnatti (p) Ranebennur (T) Haveri(D) - 581120	7204475202 kavyasl7520@gmail.com	
31	**Kavya Sunagar** D/O Chandrappa Kelavarakoppa, 581120 Di: Haveri Tq: Hanagal - 581120	9972057910 kcsunagar@gmail.com	
32	**Manikantha Ganavari** S/o Jagadish Ganavari Hanamasagar, tq:kustagi Dt:Koppal - 583281	9900119987 manikanthaganavari601@gmail. com	
33	**Maruti Kadur** S/O Revanappa Kadur, Madhaga Haranahalli(AT), Suragihalli(PO), Shikaripura(TQ), Shimoga(DT) - 577427	8884213273 marutikadur1213@gmail.com	
34	**Nayana S** D/o Shankra Naik, Nallinakoppa, Hosur (P) Shikaripura, shimoga - 577427	9148380475 ns6590636@gmail.com	
35	**Priyanka H R** D/O Rudrappa, Honnanayakana Halli Channagiri (T) , Davanagere(D). - 577213	6363164381 priyankahr1999@gmail.com	

36	**Puneeth Kumar K M** S/o Mallikarjuna G, Janani Nivasa, 2nd cross, Saraswathipura Kumbargundi Shikaripura, Shikaripura(T), Shimoga(D). - 577427	7204475537 kmpuneethkumar5537@gmail. Com	
37	**Rajani k** D/o of giriyappa soratur (post), Honnali (Taluk),Davangere (dist) - 577217	8217620489 rajani.khnldvg123@gmail.com	
38	**Rakshitha G N** D/O Nagaraja G M Channakeshava nagara 24th cross, shikaripura. Shikaripura(T), Shimoga(D) - 577427	9686050514 gnrakshithaskp@gmail.com	
39	**Ramya Y P** D/O Yogishappa P Sunnadakoppa (v)(P) Shikaripura(T) Shivamogga(D) – 577427	7899312941 ramyakallu14@gmail.com	
40	**Shilpa H R** D/O HM Ravi, #328, Doddakeri, Shikaripura - 577427	9019954670 shilpahr0812@gmail.com	
41	**Shobha B R** D/O Of Rajappa taralabaalu badavane, Mallapura, savalanga (post), Shivamogga (T), Shivamogga (D) - 577225	6364237468 shobhabrshobhabr972@gmail.com	
42	**Shrinidhi Ramakrishna choudhari** D/0 Ramakrishna choudhari market road, Banavasi, Sirsi (T) Uttara kannada (D) - 581318	8088530013 nidhishrinidhi0@gmail.com	

43	**Sumati Patil** D/O Rudrugouda R Patil Malagi(At), Rattihalli(T) Haveri(D) - 581115	9148399322 sumatipatil2305@gmail.com	
44	**Swathi H B** D/O Basavarajappa H Gogga, Hosur(P) Shivamoga(D) Shikaripura (T) - 577427	8971680763 swathihb7@gmail.com	
45	**Vandana J R** D/O Ramachandrappa Ranganathpura Colony S/L Road Shikaripura 577427	7259348014 vandanajr47512@gmail.com	
46	**Yashaswini N A** D/O N S Anand, Mudubasiddapura (V) Ambligola (P) Shikaripura (T) Shivamogga (D) - 577214	8123286719 yashaswinina8123@gmail.com	

WONDERS OF GRAVITY

Introduction to Gravity

Gravity is one of the most important forces in nature. It is the invisible force that pulls everything towards the centre of the Earth. When you drop a ball, it falls to the ground that happens because of gravity.

The famous scientist Sir Isaac Newton discovered gravity in the 17th century. One day, while sitting under an apple tree, he saw an apple fall to the ground. This made him think: "Why did the apple fall downward and not upward?" His curiosity led to the discovery of the law of universal gravitation.

Newton explained that every object in the universe attracts every other object with a force called gravity. The heavier the object, the stronger the gravitational pull. The Earth's gravity keeps everything air, water, people, animals, and buildings fixed to the ground.

How Gravity Works

Gravity acts between any two objects that have mass. Even you and I have a tiny gravitational pull, but it is so small that we cannot feel it. The Earth, being huge, has a strong gravity that pulls everything toward its centre.

The Moon also has gravity, but it is much weaker than Earth's. That's why astronauts on the Moon can jump higher and

move lightly. Gravity is also responsible for keeping the Moon in orbit around the Earth and the planets in orbit around the Sun. Without gravity, the planets would drift away into space.

Gravity also affects oceans and tides. The Moon's gravity pulls the water on Earth, causing high tides and low tides. This show how powerful gravity is, even though we cannot see it.

Wonders and Importance of Gravity

Gravity makes many wonderful things possible in our universe.

Here are some wonders of gravity:

- **Planets and stars stay in orbit:** Gravity holds the solar system together and keeps planets revolving around the Sun.
- **Tides on Earth:** Caused by the gravitational pull of the Moon and the Sun.
- **Rocket launches and space travel**: Scientists study gravity to send rockets beyond Earth's pull.

- **Rainfall and atmosphere**: Gravity helps rain fall to the ground and keeps the atmosphere around Earth.
- **Movement and balance**: Gravity helps us walk, run, and stay grounded.

Without gravity, there would be no life on Earth. Objects, air, and even oceans would float away into space. Everything we know would be different.

Conclusion:

Gravity is truly a wonder of nature. It connects everything in the universe — from tiny dust particles to giant stars. It keeps our feet on the ground and planets in motion. Though invisible, its power is everywhere. The study of gravity has helped scientists understand the mysteries of the universe, and its wonders continue to inspire curiosity in every human mind.

Ajith Kumar
I Year Student Teacher

BIODIVERSITY

Biodiversity is the foundation of life on Earth. It refers to the wide variety of living organisms that exist in different ecosystems — from tiny microorganisms to huge animals and tall trees. This diversity of life helps maintain the balance of nature and supports essential natural processes like pollination, oxygen production, and climate regulation. Every species, no matter how small, plays a vital role in sustaining the web of life. Human beings depend on biodiversity for food, water, medicine, and shelter. However, with rapid industrialization, pollution, and deforestation, biodiversity is under serious threat today. Understanding and conserving biodiversity is therefore one of the most important responsibilities of humankind.

Meaning and Definition of Biodiversity

Biodiversity refers to the variety of all living organisms on Earth — including plants, animals, fungi, and microorganisms — and the ecosystems they form. It includes diversity within species, between species, and of ecosystems.

For example, a forest has trees, insects, birds, and mammals that depend on one another for survival.

Biodiversity ensures the balance of nature. It provides food, oxygen, medicines, and raw materials for human use. Every organism, big or small, plays an important role in maintaining the stability of the ecosystem

Importance of Biodiversity

Biodiversity is vital for human existence and the health of our planet. It provides:

- Food and Medicine: Many of our foods, spices, and medicines come from plants and animals found in nature.
- Ecological Balance: Forests, oceans, and wetlands purify air and water, regulate climate, and prevent soil erosion.
- Economic Value: Tourism, agriculture, and forestry depend on rich biodiversity.
- Cultural and Aesthetic Value: Nature has inspired art, culture, and traditions around the world.

Without biodiversity, ecosystems would collapse, and life on Earth would be at great risk.

Types of Biodiversity

Biodiversity can be classified into three main types:

- Genetic Diversity: Variety of genes within a species.
- Example: Different varieties of rice or dogs.
- Species Diversity: Variety of species within a region.

  Example: Forests with tigers, elephants, birds, and plants.
- Ecosystem Diversity: Variety of ecosystems in an area.

  Example: Deserts, rainforests, coral reefs, and grasslands.

All three types are interconnected — protecting one helps maintain the others.

Threats to Biodiversity

Unfortunately, biodiversity is decreasing at an alarming rate due to human activities. Major threats include:

- Deforestation: Clearing of forests for farming or industries destroys habitats.
- Pollution: Air, water, and soil pollution harm living organisms.
- Climate Change: Rising temperatures and irregular rainfall affect habitats and species survival.
- Overexploitation: Overfishing, hunting, and overuse of natural resources reduce populations.
- Introduction of Invasive Species: Non-native species sometimes destroy local ecosystems.

If these threats continue, many species may go extinct forever.

Conservation of Biodiversity

To protect biodiversity, both individuals and governments must take action. Important conservation methods include:

- In-situ Conservation: Protecting species in their natural habitats — for example, National Parks and Wildlife Sanctuaries.
- Ex-situ Conservation: Protecting species outside their natural habitats — for example, Zoos, Botanical Gardens, and Seed Banks.
- Afforestation: Planting trees to restore forest cover.
- Waste Reduction: Reducing plastic and pollution to protect ecosystems.
- Awareness and Education: Teaching people about the importance of biodiversity and how to conserve it.

Every person can contribute by saving water, reducing waste, and respecting nature.

biodiversity is not just about the variety of living organisms; it is about the survival of life on Earth itself. It provides us with everything we need to live — food, clean air, water, and a stable climate. Protecting biodiversity means protecting our own future. Governments, organizations, and individuals must work together to conserve forests, wildlife, and natural resources. Simple actions like planting trees, avoiding pollution, and using resources wisely can make a big difference. By respecting and preserving biodiversity, we ensure a healthy and sustainable planet for generations to come.

Asha K H
I Year Student Teacher

PRESERVING THE OZONE LAYER WITH MODERN SOLUTIONS

Introduction

The ozone layer is a thin, invisible shield of gas that surrounds the Earth in the stratosphere. It plays a vital role in protecting life on Earth by absorbing most of the Sun's harmful ultraviolet (UV) radiation. Without it, humans, animals, and plants would face severe damage — such as skin cancer, eye cataracts, reduced crop yields, and ecosystem imbalance. In recent decades, the ozone layer has been threatened by human activities, particularly through the release of ozone-depleting substances. However, modern science and global cooperation have provided effective solutions to preserve and restore it.

Causes of Ozone Layer Depletion

The main cause of ozone layer depletion is the release of chlorofluorocarbons (CFCs) and similar chemicals used in air conditioners, refrigerators, aerosol sprays, and foam products. When these substances reach the stratosphere, they release chlorine and

bromine atoms under UV radiation, which destroy ozone molecules.

Other contributors include:

- Halons (used in fire extinguishers)
- Carbon tetrachloride and methyl chloroform (used in solvents and cleaning agents)

These chemicals remain in the atmosphere for many years, continuing to damage the ozone layer.

Effects of Ozone Layer Depletion

The thinning of the ozone layer allows more UV radiation to reach the Earth's surface, leading to:

- Increased skin cancer and cataracts in humans
- Damage to crops and marine ecosystems due to excess UV exposure
- Climate imbalance, as ozone depletion affects atmospheric circulation patterns
- The discovery of the ozone hole over Antarctica in the 1980s was a major warning to the world.

Modern Solutions to Preserve the Ozone Layer

1. Implementation of the Montreal Protocol (1987):

This international treaty successfully united countries to phase out the use of ozone-depleting substances (ODS). It is one of the most successful environmental agreements in history.

2. Adoption of Eco-Friendly Refrigerants:

Scientists have developed alternatives such as hydrofluorocarbons (HFCs) and hydrofluoroolefins (HFOs) that do not harm the ozone layer.

3. Green Cooling Technologies:

Energy-efficient and natural refrigerants like ammonia, carbon dioxide, and hydrocarbons are being used in modern cooling systems.

4. Promoting Renewable Energy:

Reducing fossil fuel consumption indirectly helps maintain atmospheric balance and reduces the emission of harmful gases.

5. Recycling and Responsible Disposal:

Proper disposal of old refrigerators, air-conditioners, and aerosol cans prevents the release of CFCs into the atmosphere.

6. Public Awareness and Education: Educational campaigns, World Ozone Day (celebrated on September 16), and eco-friendly policies encourage citizens to make environmentally responsible choices.

7. Research and Satellite Monitoring:

Modern technology allows scientists to monitor ozone levels through satellites and predict future changes, helping governments make data-driven policies.

Achievements and Future Outlook

Thanks to global cooperation and scientific advancement, the ozone layer is slowly recovering. Reports by the United Nations show that if current efforts continue, the ozone layer could return to its 1980 levels by the middle of the 21st century. Continued research, stricter environmental policies, and international collaboration will ensure that the ozone layer remains protected for future generations.

Conclusion

The preservation of the ozone layer is one of humanity's greatest environmental successes, showing how collective action and modern science can reverse environmental damage. By using eco-friendly technologies, enforcing global agreements, and maintaining environmental awareness, we can ensure a healthy and sustainable planet. Protecting the ozone layer is not just a scientific duty — it is a moral responsibility toward all life on Earth.

Bhavana S Y
I Year Student Teacher

THERMOMETER

A thermometer is an instrument used to measure temperature. It detects changes in temperature and displays the corresponding value, usually in Celsius(°c), Fah -renheit (°F), or Kelvin (k).

Types of thermometer

1. Mercury Thermometer: Contains mercury in a glass tube. Mercury expands or contracts with temperature. Accurate but not commonly used now due to mercury toxicity.

2. Alcohol Thermometer: uses alcohol dyed with Colour. Safer than mercury and used in cold

regions (alcohol freezer at a lower temperature)

3. Digital Thermometer: Uses electronic Sensors (like thermistors). . Fast and easy. Common for medical, Kitchen and environmental use.

4. Infrared Thermometer: Measures thermal radiation from an object. can measure temperature without touching the object used in forehead thermometers, industrial settings and food services.

5. Bimetallic Strip thermometer: Has two metals bonded together that expand at different rates. The strip bends with temperature change, moving a Pointer. Used in ovens and HVAC Systems.

6. Thermo Couple: Two wires of different metals joined at one end. voltage changes with temperature difference. Used in industrial and Scientific applications.

7. Smart Thermometers: Connected to apps or systems via Bluetooth wi-fi provide data tracking and remote monitoring.

How Does thermometer work

It detects changes in physical properties that vary with temperature. Expansion of liquids or solids: Electrical resistance, Infrared radiation.

Common uses:

- Medical (body temperature)
- weather forecasting
- Cooking
- Industrial monitoring
- Scientific research
- HVAC systems

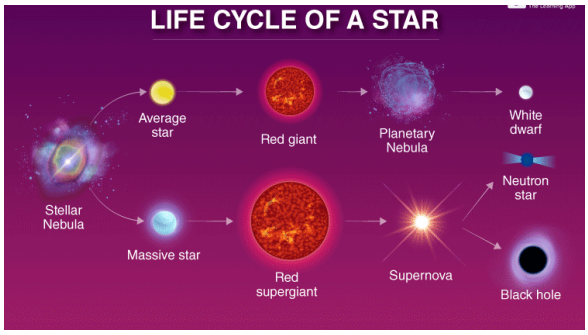
The life cycle of a star

Stars go through a natural cycle, much like any living beings. This cycle begins with birth, expands through a lifespan characterized by change and growth, and ultimately leads to death. The time frame in the life cycle of stars is entirely different from the life cycle of a living being, lasting in the order of billions of years. In this piece of article, let us discuss the life cycle of stars and its different stages.

Bhavya K C
I Year Student Teacher

SEVEN MAIN STAGES OF A STAR

Stars come in a variety of masses and the mass determines how radiantly the star will shine and how it dies. Massive stars transform into supernovae, neutron stars and black holes while average stars like the sun, end life as a white dwarf surrounded by a disappearing planetary nebula. All stars, irrespective of their size, follow the same 7 stage cycle, they start as a gas cloud and end as a star remnant.



1. Giant Gas Cloud

A star originates from a large cloud of gas. The temperature in the cloud is low enough for the synthesis of molecules. The Orion

cloud complex in the Orion system is an example of a star in this stage of life.

2. Protostar

When the gas particles in the molecular cloud run into each other, heat energy is produced. This results in the formation of a warm clump of molecules referred to as the Protostar. The creation of Protostars can be seen through infrared vision as the Protostars are warmer than other materials in the molecular cloud. Several Protostars can be formed in one cloud, depending on the size of the molecular cloud.

3. T-Tauri Phase

A T-Tauri star begins when materials stop falling into the Protostar and release tremendous amounts of energy. The mean temperature of the Tauri star isn't enough to support nuclear fusion at its core. The T-Tauri star lasts for about 100 million years, following which it enters the most extended phase of development – the Main sequence phase.

4. Main Sequence

The main sequence phase is the stage in development where the core temperature reaches the point for the fusion to commence. In this process, the protons of hydrogen are converted into atoms of helium. This reaction is exothermic; it gives off more heat than it requires and so the core of a main-sequence star releases a tremendous amount of energy.

5. Red Giant

A star converts hydrogen atoms into helium over its course of life at its core. Eventually, the hydrogen fuel runs out, and the internal reaction stops. Without the reactions occurring at the core, a star contracts inward through gravity causing it to expand. As it expands, the star first becomes a subgiant star and then a red giant. Red giants have cooler surfaces than the main-sequence star, and because of this, they appear red than yellow.

6. The Fusion of Heavier Elements

Helium molecules fuse at the core, as the star expands. The energy of this reaction prevents the core from collapsing. The core shrinks and begins fusing carbon, once the helium fusion ends. This process repeats until iron appears at the core. The iron fusion reaction absorbs energy, which causes the core to collapse. This implosion transforms massive stars into a supernova while smaller stars like the sun contract into white dwarfs.

7. Supernovae and Planetary Nebulae

Most of the star material is blasted away into space, but the core implodes into a neutron star or a singularity known as the black hole. Less massive stars don't explode, their cores contract instead into a tiny, hot star known as the white dwarf while the outer material drifts away. Stars tinier than the sun, don't have enough mass

to burn with anything but a red glow during their main sequence. These red dwarves are difficult to spot. But, these may be the most common stars that can burn for trillions of years.

Facts about Stars

- There are 9,096 stars visible to the naked eye in the entire sky. To see more, you have to use a telescope to reveal stars fainter than your eyes can see.
- You can only see about 2,000 stars on a very dark night with the naked eye from any given place on Earth. To do this, you need to observe on a moonless night and be far away from sources of light pollution.
- Astronomers estimate there are a trillion stars in the Milky Way Galaxy.
- Stars are born in batches in their stellar nurseries. Over time, they travel through the Milky Way, far from their crèches.
- Most stars travel the galaxy with companions or in clusters. But not all stars do that; our Sun, for example, moves through the galaxy without a stellar companion.
- When you look at a star (or any object in space) you are seeing how it looked in the past. The Sun appears as it was 8.5 minutes ago. The view of Alpha Centauri is 4.3 years old, while the appearance of Sirius is more than 8 years old.
- The more massive a star, the shorter its lifespan. A very massive star may live only tens of millions of years, while a cool dwarf will shine on for billions of years. At an age of about 4.5 billion years, our Sun is considered middle-aged.
- The oldest accurately dated star chart appeared in ancient Egyptian astronomy in 1534 BC.
- In 185 AD Chinese astronomers were the first to record a supernova, this is now classified as SN 185.
- The furthest distance an individual star has been observed from is about 100 million light years from the Earth in the M100 galaxy of the Virgo Cluster.

Chaithra H U
I Year Student Teacher

ARTIFICIAL INTELLIGENCE IN SCIENCE

Artificial Intelligence (AI) is one of the most revolutionary technologies of the 21st century. It refers to computer systems that can perform tasks traditionally requiring human intelligence, such as learning, reasoning, problem-solving, and decision-making. In recent years, AI has become an essential tool in scientific research and development. It is transforming the way scientists study nature, conduct experiments, analyze data, and develop new solutions.

AI is especially useful in science because modern research generates huge amounts of data, which are difficult for humans to interpret manually. With the help of AI, scientists can process information faster, identify hidden patterns, and make accurate predictions. This improves efficiency in laboratories, industries, and the world of research.

Role of AI in Scientific Research

AI helps scientists perform complex tasks at great speed. It can simulate experiments that may take months or years in real life. AI reduces errors, saves time, and lowers cost. Machine learning, a major field of AI, allows computers to learn from data and improve performance automatically. Deep learning, another branch, helps in recognizing images, language, speech, and patterns.

In science, AI is used to design new experiments, analyze experimental results, and even develop new theories. It assists researchers in discovering new materials, medicines, and technologies. It can also monitor natural systems such as climate, oceans, and forests to predict environmental changes.

Implications of AI in Various Scientific Fields

1. Medicine and Healthcare

AI has become a powerful tool in medical science. It helps diagnose diseases faster and more accurately than traditional methods. For example, AI systems can analyze medical images like X-rays, CT scans, and MRI scans to detect abnormalities such as tumors or fractures. AI-based tools help doctors predict the risk of diseases, design treatment plans, and monitor patients.

Drug discovery, which used to take many years, is now faster with AI. During the COVID-19 pandemic, AI helped scientists analyze the virus and develop vaccines more

quickly. AI-powered robots assist surgeons during operations and help in caring for patients.

2. Biotechnology

In biotechnology, AI is used to study genes, proteins, and cells. It helps scientists understand how diseases spread at the molecular level. AI models can predict how organisms respond to different environments, helping develop better crops and medicine.

3. Astronomy and Space Science

AI plays an important role in space exploration. Space telescopes collect enormous amounts of data, which AI helps analyze. It identifies planets, stars, and galaxies much faster than human astronomers. AI helps scientists control robots and rovers on planets like Mars. It also predicts the movement of asteroids and other space objects.

4. Environmental Science

AI helps monitor climate change, pollution levels, and natural disasters. For example, AI can predict floods, earthquakes, and cyclones, allowing governments to take preventive action. In wildlife conservation, AI can identify animals, track their movement, and protect endangered species.

5. Chemistry and Material Science

AI helps chemists design stronger, safer, and more affordable chemicals. It also helps scientists develop new materials for industries. AI models can predict the properties of materials before they are made physically, saving time, energy, and money.

Advantages of AI in Science

1. High Speed and Accuracy – AI completes tasks faster and with fewer mistakes.
2. Efficient Data Analysis – It can handle large amounts of data easily.
3. Innovation – AI helps discover new products, materials, and medicines.
4. Cost-Effective – AI reduces the need for large teams and long experiments.
5. Automation – Many repetitive tasks can be automated, allowing scientists to focus on creativity.

Challenges of AI in Science

- ✓ Despite many benefits, AI also has some challenges.
- ✓ High Cost: Developing AI systems is expensive.
- ✓ Need for Skilled Experts: Proper knowledge is required to use AI tools.
- ✓ Data Privacy: Personal data must be protected.
- ✓ Bias in Data: Incorrect data may lead to wrong conclusions.
- ✓ Scientists must use AI responsibly to avoid misuse and errors.

Future of AI in Science

The future of AI in science is very promising. As technology advances, AI

systems will become smarter and more efficient. In the future, AI may help cure incurable diseases, discover life on other planets, develop sustainable energy, and solve environmental problems. It may also help humans understand the origin of the universe.

AI will work like a partner with scientists, helping them achieve their goals faster and more effectively. It will create opportunities for new discoveries, inventions, and applications that we cannot imagine today.

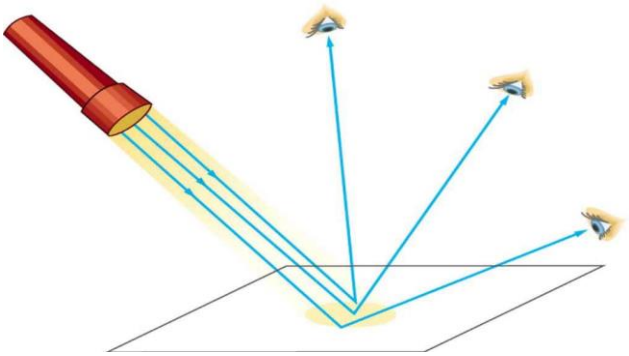
Conclusion

Artificial Intelligence has brought a major revolution in scientific research. It has improved accuracy, speed, and innovation in various fields such as medicine, space science, biotechnology, environmental studies, and chemistry. Though challenges exist, responsible use of AI can make science more powerful and beneficial for society. In the coming years, AI will continue to transform science and contribute to the betterment of humanity.

Deeksha G
I Year Student Teacher

LIGHT

Light is a form of electromagnetic radiation and a fundamental force that enables vision, sustains life through processes like photosynthesis, and has symbolic meaning in art and religion. Scientifically, it behaves as both a wave and a particle, travels at a constant speed in a vacuum, and interacts with matter through reflection and refraction. Beyond its physical properties, light is a powerful metaphor for knowledge, hope, and energy in human culture.



Scientific and physical properties

- **Nature:** Light is a form of energy composed of electromagnetic waves, visible to the human eye as a spectrum of colors. It also exhibits particle-like behavior, as it is made of photons, or minute packets of energy.
- **Speed:** It travels incredibly fast, at approximately 299,792299 comma 792 299,792 kilometers per second). This speed is constant in a vacuum, allowing light to travel through space where there is no medium.
- **Interaction with matter:** Natural light, like that from the sun, is produced by

nuclear fusion. Artificial light sources include bulbs, lasers, and candles, which are man-made objects that emit light.

Importance for life and the planet

- **Vision:** Light is the primary way humans and many animals perceive their surroundings, receiving about
- **Photosynthesis:** The sun's light is the primary energy source for the food chain. Plants use it in photosynthesis to convert carbon dioxide and water into energy usable by other organisms.
- **Regulation of biological cycles:** Sunlight helps regulate the body's internal clock, which influences mood, energy levels, and sleep patterns.

Symbolic and cultural significance

- **Symbolism:** Light is a powerful symbol in literature and culture, often representing knowledge, truth, purity, and hope. Conversely, darkness can symbolize ignorance, despair, or evil.
- **Spiritual meaning:** Many religions and spiritual traditions use light as a metaphor for divine energy, a higher consciousness, or an inner spiritual source, which can be accessed through practices like meditation.
- **Human activity:** The availability of light, both natural and artificial, affects human activity, productivity, and well-being, from the simple act of reading to the architecture of buildings.

Light is a fundamental force that enables vision and shapes our perception of the world, and its behavior can be understood through scientific principles like its straight-line propagation, reflection, and wave properties. Its importance extends to technology through optics and lasers, and its nature is deeply connected to the broader electromagnetic spectrum. Light is also a source of metaphorical and spiritual meaning in many cultures, representing knowledge, hope, and truth.

Girija S M
I Year Student Teacher

GLOBAL WARMING

Global warming refers to the long-term rise in Earth’s average surface temperature due to human activities, primarily the emission of greenhouse gases like carbon dioxide and methane. These gases trap heat in the atmosphere, leading to various climatic changes. You need to teach your child to write essay on global warming so that they will be able to undVerstand the topic very well while writing.

Causes Of Global Warming

Global warming is primarily caused by the increased concentration of

greenhouse gases in Earth's atmosphere, largely due to human activities. The burning of fossil fuels like coal, oil, and natural gas for energy and transportation releases vast amounts of carbon dioxide (CO2), the main contributor. Deforestation further aggravates this by reducing the number of trees that can absorb CO2. Industrial processes and agriculture release other potent greenhouse gases like methane and nitrous oxide. These activities enhance the natural greenhouse effect, trapping more heat in the atmosphere, leading to the warming of the planet and significant climatic changes

Effects Of Global Warming

The effects of global warming are extensive and multifaceted, impacting the environment, human health, wildlife, and economies globally. Here's a breakdown of some of the key effects:

1. Climate Change

Extreme Weather: Global warming leads to more frequent and severe weather events like hurricanes, heatwaves, droughts, and heavy rainfall.

Changing Precipitation Patterns: Altered rain patterns, lead to flooding in some areas and droughts in others.

Increased Temperatures: Rising average temperatures worldwide, leading to longer and more intense heat waves.

2. Environmental Impact

Melting Ice Caps and Glaciers: This contributes to rising sea levels, which can inundate coastal areas and islands.

Ocean Acidification: Increased CO2 levels lead to higher acidity in oceans, harming marine life.

Disruption of Ecosystems: Shifts in climate zones affect plant and animal habitats, leading to changes in biodiversity.

3. Human Health

Heat-related Illnesses: Higher temperatures increase the risk of heat strokes and dehydration.

Spread of Diseases: Warmer climates can expand the range of disease-carrying insects like mosquitoes, leading to the spread of diseases like malaria and dengue.

Respiratory Problems: Increased air pollution and allergens exacerbated by global warming can lead to respiratory issues.

4. Agriculture and Food Security

Crop Yields: Changing climate patterns affect crop growth cycles, potentially reducing food production in certain regions.

Water Resources: Altered precipitation patterns can lead to water scarcity, impacting irrigation and drinking water supply.

5. Economic Consequences

Infrastructure Damage: Extreme weather events can cause significant damage to infrastructure, leading to high economic costs.

Resource Scarcity: Increased competition for natural resources like water and arable land.

Impact on Industries: Sectors like agriculture, fishing, and tourism can be severely affected by climate change.

6. Social and Geopolitical Effects

Migration: Climate change can lead to displacement of people, especially from areas severely affected by sea-level rise or extreme weather.

Increased Conflicts: Resource scarcity could heighten geopolitical tensions and conflicts.

Solutions of Global Warming

You can teach your children to combat global warming by encouraging simple yet effective habits: using energy-efficient appliances, practicing recycling and waste reduction, switching to LED bulbs, and minimizing water usage. Encourage walking, biking, or public transportation to reduce carbon footprints. Planting trees and starting a home garden can teach kids about the importance of green spaces. Discussing the benefits of renewable energy and instilling a mindset of conservation and respect for the environment from a young age are key steps towards a sustainable future.

The Challenge of Global Warming

Global warming presents a formidable challenge that demands immediate attention and action. It results from the accumulation of greenhouse gases in the atmosphere, primarily due to human activities like deforestation, industrial processes, and the burning of fossil fuels. These gases trap heat, causing the Earth's temperature to rise, leading to climate change. The effects of global warming are diverse and alarming: extreme weather events like hurricanes and heatwaves, melting glaciers, rising sea levels, and the loss of biodiversity. For students and kids, understanding the impact of these changes is crucial. They are the future custodians of our planet, and their actions can make a significant difference. They can help by learning about and practicing sustainable

living, like using energy efficiently, reducing waste, and supporting clean energy initiatives. Education about global warming should not only focus on the challenges but also empower young minds to be part of the solution through innovative and sustainable practices.

Action Against Global Warming

Global warming is a reality that we can no longer afford to ignore. It is a crisis primarily caused by the increase in greenhouse gases due to human activities like the extensive burning of fossil fuels, industrial emissions, and deforestation. This crisis leads to a rise in the Earth's temperature, causing drastic changes in climate patterns. These changes result in severe weather conditions, negatively impacting wildlife, human health, and agriculture. It's crucial for students and kids to understand the role they can play in combating global warming. Simple, everyday actions such as using public transportation, reducing electricity usage, recycling, and supporting renewable energy can have a profound impact. Educating the younger generation about the importance of these actions is essential. They need to be aware that their choices and behaviours can contribute to a healthier, more sustainable world. By taking action now, they can help ensure a better future for themselves and generations to come.

Conclusion

In conclusion, essay on global warming represents one of the most significant challenges of our time, with far-reaching implications for our planet's climate, ecosystems, human health, and societies. The increase in Earth's average temperature, primarily due to the excessive release of greenhouse gases from human activities, has triggered a cascade of environmental and socio-economic consequences. The melting of ice caps, rising sea levels, extreme weather events, and shifts in biodiversity are just the tip of the iceberg in terms of the impacts we are witnessing.

Kavana P T
I Year Student Teacher

POLLUTION OF PLASTIC & IT'S SOLUTIONS

Introduction

Plastic is one of the most widely used materials the the world from Packaging & household Pterms to vehicles & technology plastic has become an inseparable part of human life, However the very features that make plastic useful in durability. To decay-hare also love cost Et resistance turned A one of the greatest environment challenges of over time, plastic pollution has reached alarming levels threatening ecosystems, wildlife and even human health,

Causes of plastic pollution:-

The main causes of plastic pollution is the excessive we & improper disposal of plastic products, Single we plastic Such as bottles bags. & Strews core discorded after only a few mentees of use. But they take hundreds of years to decompose. As a result they accumulates in landfills revers. Oceans. Each year. Millions of tons of plastic waste enter the sea creating massive floating garbage patches & harming marine life.

Effects of plastic pollution :-

Wildlife harm: Marine animals often mistake plastic for food leading to choking. Starvation or Poisoning

Human Health: Micro plastics are now found in seafood, salt & even the air we breathe,

Solutions to plastic pollution:-

1) Reduce & Replace : Minimizing the us Single plastics in the first step. Replacing then with eco-friendly alternative such as cloth bag paper strands & biodegradable packaging car reduce waste Siemeficantly.

2) Reuse & Recycle: people should reuse plastic products as such much as possible Recycling planets should be development to convert use plastic into new products like furniture. Clothing etc.

3) waste management Systems: Governments must Enforce proper waste collection & Segregation Systems. Banning plastic littering & promoting Recycling habits can make a major difference.

4) Awareness campaigns: Educating people about the harmful effects of plastic pollution will encourage "eco-friendly practices. Schools effectively organ Batons can spread awareness effectively .

Plastic pollution is a big problem for our earth. It harms animals, plants, and even people. We see plastic waste everywhere — in water, on land, and in the air.

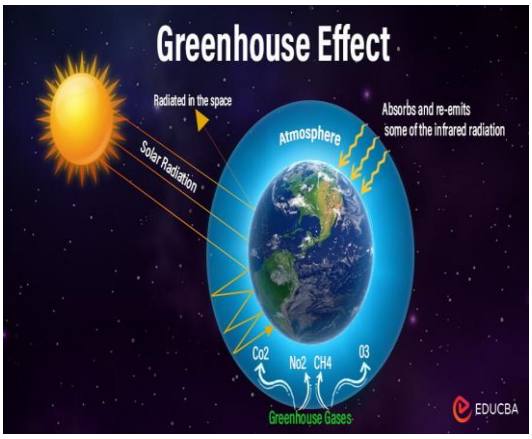
To solve this problem, we should reduce the use of plastic, reuse things instead of throwing them away, and recycle plastic properly. People should use cloth or paper bags and say no to single-use plastics.

Conclusion: Plastic pollution is a big problem for our earth. It harms animals, plants, and even people. We see plastic waste everywhere — in water, on land, and in the air if everyone works together to use less plastic and keep our surroundings clean, we can make the Earth a safer and healthier place to live.

Kavya S L
I Year Student Teacher

GREEN HOUSE EFFECT

The greenhouse effect is a natural process where certain gases in the Earth's atmosphere trap heat from the sun, which warms the planet and makes it habitable. Sunlight enters the atmosphere and warms the Earth's surface; when the Earth cools, it releases heat as infrared radiation. Greenhouse gases, such as carbon dioxide and water vapor, absorb some of this outgoing heat, preventing it from escaping into space and warming the planet. While essential for life, human activities like burning fossil fuels have increased the



concentration of these gases, enhancing the effect and causing global warming.

How it works ?

- **Sunlight enters:** Solar energy in the form of visible light passes through the atmosphere to warm the Earth's surface.
- **Heat is radiated:** The warmed Earth then releases energy back into the atmosphere as infrared radiation (heat).
- **Gases trap heat:** Greenhouse gases in the atmosphere absorb this infrared radiation, slowing the rate at which heat escapes into space.
- **Planet warms:** This trapped heat keeps the Earth's temperature warmer than it would be otherwise, which is crucial for life.

Greenhouse gases

- **Carbon Dioxide (CO_2):** The most significant contributor, released mainly through burning fossil fuels and deforestation.
- **Methane (CH_4):** Produced by sources like livestock farming, landfills, and natural gas systems.
- **Nitrous Oxide (N_2O):** Emitted from agricultural and industrial activities, as well as the burning of fossil fuels.
- **Water Vapor (H_2O):** A natural greenhouse gas whose concentration increases as the atmosphere warms.
- **Fluorinated Gases:** Synthetic gases used in products like aerosols and refrigerants.

Human impact

- Human activities, particularly the burning of fossil fuels, have released large amounts of greenhouse gases, increasing their concentration in the atmosphere.
- This excess of gases traps more heat than normal, causing the Earth's average temperature to rise—a phenomenon known as global warming.
- The enhanced greenhouse effect leads to significant climate changes, such as shifts in weather patterns, rising sea levels, and more extreme weather events.

Manikant Ganavari
I Year Student Teacher

PHARMACOLOGICAL ACTIVITIES OF MANGO (MANGIFERA INDICA)

Introduction

Medicinal plants play a crucial role in global health care, forming the basis of numerous traditional and modern medicines. The World Health Organization (WHO) estimates over 21,000 plant species are used medicinally, and nearly 30% of pharmacological drugs originate from plants. Mango (*Mangifera indica L.*) is a tropical fruit native to South Asia and is the national fruit of India and the Philippines. It ranks second among tropical fruits in production, after bananas. Mango fruits are rich in micronutrients, vitamins, polyphenols, and carotenoids, which support human growth and overall health.

Taxonomy and Description

- **Kingdom:** Plantae
- **Order:** Sapindales
- **Family:**Anacardiaceae
- **Genus:***Mangifera*
- **Species:** *M. indica*

The mango tree is large (10–40 m), evergreen, with dark grey bark and a dense root system. Leaves are simple, shiny green, 15–45 cm long. Flowers are small, fragrant, and borne in panicles. Fruits are fleshy drupes varying in color, size, and flavor, containing a single seed.

Ethnomedicinal Uses

All parts of the mango tree—roots, bark, leaves, flowers, fruits, and seeds—are used traditionally:

- **Bark/Roots:** Astringent, anti-inflammatory, anti-syphilitic, useful in diarrhea and wounds.
- **Leaves:** Treat cough, ulcers, dysentery; ash used for burns.
- **Flowers:** Used for anemia, dyspepsia, and bleeding disorders.
- **Fruits:** Unripe fruits aid digestion; ripe fruits act as tonic and laxative.
- **Seed Kernel:** Anthelmintic, astringent, and effective in diarrhea, diabetes, and menorrhagia.

Phytochemicals and Nutrients

Mango is rich in carotenoids (β-carotene, lutein), polyphenols (quercetin, mangiferin, gallic acid, catechins), and omega-3 and -6 fatty acids. The compound mangiferin, a xanthonoid, is recognized for

its potent antioxidant, anti-diabetic, anticancer, and immune modulatory activities.

Pharmacological Activities

1. Anticancer: Polyphenolic extracts and mangiferin exhibit cytotoxic effects on various cancer cell lines (breast, lung, colon, leukemia, prostate). Mechanisms include apoptosis induction, telomerase inhibition, and cell cycle arrest.

2. Antidiabetic: Leaf, bark, and root extracts significantly reduce blood glucose levels in diabetic rats and rabbits. Mango extracts enhance insulin sensitivity and inhibit carbohydrate-hydrolyzing enzymes.

3. Anti-inflammatory: Mangiferin inhibits **cyclooxygenase-2 (COX-2)** and **iNOS** expressions, regulates cytokine balance, and reduces prostaglandin synthesis, showing strong potential in treating inflammation and fever.

4. Hepatoprotective: Mango pulp and seed extracts protect liver tissue from oxidative stress by modulating antioxidant enzymes and reducing lipid peroxidation.

5. Antimicrobial: Aqueous and ethanolic extracts inhibit Staphylococcus aureus, E. coli, Salmonella typhi, Candida albicans, and others. Gallotannins and mangiferin are key antibacterial agents.

6. Antifungal & Antiviral: Effective against *Alternaria alternata*, herpes simplex virus (HSV-1, HSV-2), hepatitis B, and HIV. Mangiferin inhibits viral replication and cytopathic effects.

7. Antimalarial & Anthelmintic: Stem bark extracts show **antiplasmodial** activity against *Plasmodium falciparum* and nematode infections, suggesting potential as antiparasitic agents.

8. Gastroprotective & Antidiarrheal: Leaf and seed extracts reduce gastric ulcers, control diarrhea, and enhance antioxidant defense in the gastrointestinal tract.

9. Cardioprotective: Mangiferin reduces lipid peroxidation, normalizes cardiac enzymes, and improves myocardial function in animal models.

10. Hypolipidemic: Mango leaf extract lowers total cholesterol, triglycerides, LDL, and VLDL while increasing HDL, demonstrating lipid-regulating properties.

11. Immunomodulatory: Mangiferin enhances immune response, increases antibody production (IgM, IgG), and protects against immune suppression.

12. Neuroprotective: Improves recognition memory and increases levels of nerve growth factor (NGF) and TNF-α, indicating its role in cognitive health.

Conclusion

Mangifera indica is not only a valuable fruit crop but also a potent medicinal plant with diverse pharmacological activities. Rich in bioactive compounds like mangiferin, it exhibits anticancer, antidiabetic, anti-inflammatory, hepatoprotective, antimicrobial, and immunomodulatory properties. Its broad therapeutic potential supports its role as a natural, multi-purpose medicinal resource, aligning with modern pharmacological research and traditional Ayurvedic knowledge. Future studies should focus on clinical validation and drug development from its active constituents.

Maruti Kadur
I Year Student Teacher

ROAD SAFETY: ENSURING A SAFER JOURNEY FOR ALL

Introduction

Road safety is a critical concern in today's fast-paced world. With the increase in vehicles and urban population, the risk of accidents has also surged. Ensuring road safety is not only the responsibility of government authorities but also of every individual who uses the road. A focus on safety can save countless lives, prevent injuries, and reduce economic losses caused by accidents.

Importance of Road Safety

The significance of road safety cannot be overstated. According to global statistics, thousands of people die each year due to

road accidents. These incidents often result from reckless driving, over-speeding, poor infrastructure, and neglect of traffic rules. Prioritizing road safety helps protect lives, reduces healthcare costs, and promotes a sense of social responsibility.

Common Causes of Road Accidents

1. **Speeding:** Excessive speed reduces the driver's ability to react to sudden obstacles and increases the severity of accidents.
2. **Drunk Driving:** Alcohol impairs judgment and slows reaction times, making accidents more likely.
3. **Distracted Driving:** Using mobile phones, eating, or other distractions while driving leads to fatal mistakes.
4. **Ignoring Traffic Signals:** Running red lights or ignoring road signs causes collisions.
5. **Poor Road Conditions:** Potholes, lack of proper signage, and poorly lit streets contribute to accidents.
6. **Weather Conditions:** Rain, fog, or ice can make roads slippery and decrease visibility, increasing accident risks.

Key Road Safety Measures

1. **Obey Traffic Rules:** Following speed limits, traffic signals, and pedestrian crossings is fundamental. It ensures predictability and reduces the likelihood of accidents.
2. **Wear Safety Gear:** Helmet for two-wheelers and seatbelts for cars save lives during collisions. Safety gear acts as a protective barrir against severe injuries.
3. **Avoid Distractions:** Drivers should avoid mobile phones and other distractions. Concentration is key to anticipating hazards on the road.
4. **Never Drive Under Influence:** Driving under alcohol or drugs impairs reflexes. Strict adherence to sobriety laws is crucial.
5. **Maintain Vehicles Properly:** Regular maintenance, including brakes, lights, and tires, prevents mechanical failures that can lead to accidents.
6. **Use Pedestrian Crossing:** Pedestrians should use designated crossings and wait for signals to ensure their safety.

Role of Education in Road Safety

Road safety education plays a vital role in creating awareness among all road users. Schools, colleges, and communities must emphasize traffic rules, responsible driving, and first aid knowledge. Awareness campaigns through media and social platforms help reinforce safe practices and reduce reckless behavior on roads.

Government Initiatives

Many governments have implemented measures to improve road safety, such as:

- Stricter enforcement of traffic laws
- Installation of speed cameras and red-light cameras
- Road infrastructure improvement

- Public awareness campaigns on safe driving practices
- Licensing regulations and driving tests
- Technology and Road Safety
- Technological advancements have contributed significantly to safer roads. Examples include:
- Anti-lock Braking Systems (ABS): Prevents wheels from locking during emergency braking.
- Airbags: Protects occupants in collisions.
- Advanced Driver Assistance Systems (ADAS): Alerts drivers about lane departures, collisions, and blind spots.
- GPS and Navigation Tools: Help drivers choose safer routes and avoid congested areas.

Role of Community and Individuals

- While government measures are important, individual responsibility is equally crucial. Citizens can contribute
- Reporting road hazards or reckless driving
- Participating in awareness campaigns
- Educating children and peers about road safety
- Volunteering in community traffic monitoring programs

Conclusion

Road safety is a shared responsibility that requires cooperation among drivers, pedestrians, authorities, and communities. By following traffic rules, practicing safe driving, educating others, and leveraging technology, we can reduce accidents and create a safer environment for everyone. Every step toward road safety is a step toward preserving life and ensuring a safer journey for all.

Nayana S
I Year Student Teacher

NUTRITION

Introduction

Nutrition is the process of taking in food and using it for growth, energy, and maintaining good health. It plays a vital role in our lives because the food we eat

affects how our body functions and how we feel. Without proper nutrition, our body cannot perform its daily activities effectively. Good nutrition helps us to stay fit, fight diseases, and live a long and healthy life. Our body needs six main nutrients carbohydrates, proteins, fats, vitamins, minerals, and water. Each of these has a special role to play. Carbohydrates are the main source of energy. They are found in foods like rice, wheat, bread, and potatoes. Proteins help to build and repair tissues and muscles. They are found in milk, eggs, pulses, meat, and fish. Fats provide energy and help the body absorb certain vitamins, but too much fat can be harmful. Vitamins and minerals are needed in small amounts but are very important for keeping our body healthy and preventing diseases. Water is also an essential nutrient because it helps in digestion, keeps the body cool, and removes waste.

A balanced diet means eating the right amount of all these nutrients every day. It should include a variety of foods such as fruits, vegetables, grains, pulses, milk, and nuts. Eating too much or too little of any nutrient can cause health problems. For example, lack of vitamins can cause diseases like night blindness or anemia, while overeating fatty foods can lead to obesity and heart problems.

Good nutrition is especially important for children and teenagers, as they are in the growing stage. Proper food helps them develop strong bones, sharp minds, and healthy bodies. For adults, good nutrition maintains energy and prevents lifestyle diseases like diabetes and high blood pressure. For older people, nutritious food helps in maintaining strength and improving immunity.

In today's world, many people prefer fast food because it is quick and tasty. However, most fast foods are unhealthy as they contain too much oil, salt, and sugar. Eating such food regularly can cause obesity, fatigue, and other serious health problems. That is why we must choose our food wisely. We should prefer home-cooked meals, fresh fruits, salads, and plenty of water.

Besides eating well, it is also important to maintain good eating habits such as eating at regular times, chewing food properly, and avoiding overeating. Regular exercise and adequate sleep also play an important part in keeping our body healthy along with good nutrition.

Nutrition is the foundation of a healthy and happy life. A balanced diet gives us the strength to work, learn, and enjoy life. By making the right food choices and developing healthy habits, we

can build a strong body and a positive mind. Good nutrition is not just about eating, it is about living well.

Priyanka H R
I Year Student Teacher

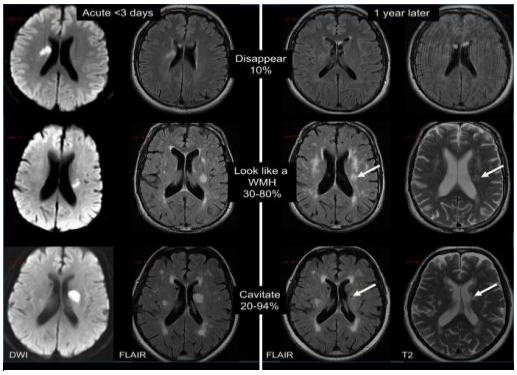
NEUROPLASTICITY

Introduction:

Neuroplasticity, also known as brain plasticity, refers to the brain's amazing ability to change and adapt throughout life. It means that the connections between nerve cells (neurons) in the brain are not fixed, but can be strengthened, weakened, or even newly formed through experiences, learning, and practice.

In the past, scientists believed that the brain stopped developing after childhood. However, modern research has proved that the brain remains flexible and capable of change at any age. Neuroplasticity allows people to learn new skills, store memories, and recover from brain injuries. For example, when someone learns to play a musical instrument or speak a new language, new connections are created in the brain. Similarly, after a stroke, undamaged parts of the brain can take over lost functions, showing the brain's ability to reorganize itself.

Neuroplasticity is also important in education and mental health. Repeated practice, positive thinking, and



mindfulness can reshape thought patterns and improve focus, memory, and emotional control. It shows that our brains can grow stronger with use — much like a muscle.

Types of Neuroplasticity:

1. **Structural Plasticity:** The brain's ability to physically change its structure by forming new connections (synapses) between neurons.

Example: Learning a new skill increases gray matter in certain brain regions.

2. **Functional Plasticity:**

The brain's ability to move functions from damaged areas to undamaged areas.

Example: After a stroke, another part of the brain may take over speech functions.

Examples:

- Learning a new language or musical instrument.
- Recovery after brain injury or stroke.
- Developing new habits or breaking old ones.
- Strengthening memory through practice and repetition.

Importance of Neuroplasticity:

- Enables learning and memory formation.
- Helps in rehabilitation after injury.
- Allows adaptation to new experiences and environments.
- Supports mental health, as therapy and mindfulness can rewire negative thought patterns.

Conclusion:

Neuroplasticity proves that the human brain is not fixed but flexible. It continuously changes with experience and learning. This concept gives hope for lifelong learning, recovery, and personal growth. It reminds us that with effort and practice, we can truly change the way we think, feel, and act.

Puneeth Kumar K M
I Year Student Teacher

ENVIRONMENTAL POLLUTION AND ITS IMPACT ON LIFE

Introduction:

The environment is the foundation of life on Earth. It provides us with air to breathe, water to drink, food to eat, and all the natural resources necessary for survival. However, in recent decades, rapid industrialization, urbanization, and human negligence have disturbed this natural balance. The result is environmental pollution a major threat to life on our planet. Pollution not only harms human beings but also affects animals, plants, and the entire ecosystem.

Meaning of pollution

Pollution refers to the introduction of harmful substances or products into the environment. These substances are called pollutants, and they can be in the form of solid, liquid, or gas. Pollution makes the

environment unhealthy and unsafe for living organisms. It reduces the quality of air, water, and soil, which are the basic elements of life.

Types of pollution

1. Air pollution: Air pollution occurs when harmful gases and particles mix with the air we breathe. The main sources are vehicles, factories, power plants, and the burning of fossil fuels like coal and petrol. These release pollutants such as carbon monoxide, sulfur dioxide, and nitrogen oxides.

Air pollution causes many health problems, including asthma, bronchitis, and heart diseases. It also contributes to global warming and the depletion of the ozone layer, which protects us from harmful ultraviolet rays.

2. Water Pollution: Water pollution is caused when harmful substances like sewage, chemicals, plastics, and industrial waste are dumped into water bodies such as rivers, lakes, and oceans. Contaminated water affects aquatic life and leads to the death of fish and other organisms.

Humans who use polluted water for drinking or agriculture suffer from diseases like cholera, typhoid, and hepatitis. The pollution of oceans also affects marine biodiversity and the balance of aquatic ecosystems.

3. Soil Pollution: Soil pollution occurs due to the use of chemical fertilizers, pesticides, and industrial waste. These chemicals destroy the natural nutrients of the soil, making it less fertile. As a result, crop yields decrease and the quality of food is affected. Soil pollution also harms organisms living in the soil and disturbs the food chain.

4. Noise Pollution: Noise pollution is caused by loud sounds from vehicles, factories, loudspeakers, and construction work. Though it does not directly destroy nature, it has serious effects on human health, such as stress, hearing loss, and sleep disturbances. Animals also suffer, as loud noises interfere with their communication and natural habitats.

5. Thermal and Radioactive Pollution: Thermal pollution happens when industries release hot water or waste into rivers, raising the temperature and affecting aquatic life. Radioactive pollution comes from nuclear power plants and improper disposal of radioactive materials, which can cause severe health hazards like cancer and genetic mutations.

Causes of Environmental Pollution

The main cause of pollution is human activity. With the rise of industrialization, more factories release smoke and waste into the environment.

Deforestation for agriculture and housing has led to soil erosion and reduced air quality. The increase in vehicles has also added to air pollution.

Urbanization and population growth create more waste and sewage, which often go untreated. Overuse of plastics, careless dumping of garbage, and mining activities further add to environmental degradation.

Effects of Pollution on Life

Pollution has a wide range of effects on living beings and the planet.

On Human Health: Air and water pollution cause respiratory and waterborne diseases. Long-term exposure to polluted environments can lead to serious illnesses like cancer and cardiovascular diseases.

Conclusion

Environmental pollution is a critical challenge that threatens ecosystems, huma n health, and the sustainability of our plane t, necessitating immediate and collective a ction to mitigate its effects.

Rajani K
I Year Student Teacher

SAVE NATRAL RESOURCES

Natural resources are the greatest gift of nature to humanity. They include air, water, soil, forests, minerals, fossil fuels, and sunlight. These resources are the foundation of our survival and progress. From the food we eat to the fuel we use, everything comes from nature. However, reckless exploitation, pollution, and overpopulation are rapidly depleting these valuable resources. If we do not act now, future generations will face scarcity and environmental crises.

Natural resources are the backbone of human existence and economic development. They include renewable resources such as water, forests, sunlight, and soil, as well as non-renewable resources such as coal, petroleum, and minerals. While renewable resources can be replenished naturally, they too are being degraded due to overuse and pollution. Non-renewable resources, once exhausted, cannot be replaced within a human

lifetime. This makes their conservation even more urgent.

Importance of Natural Resources

1. Basic Human Needs

- ✓ Food and Water: Agriculture depends on fertile soil, clean water, and favorable climatic conditions.
- ✓ Shelter and Clothing: Wood, bamboo, cotton, wool and other natural products provide housing and clothing.
- ✓ Energy: Fossil fuels, solar, wind, and hydropower are essential to cooking, heating, lighting, and transport.

2. Economic Development

- ✓ Industrial Growth: Minerals like iron, copper, and bauxite are the backbone of industries such as construction, electronics, and automobiles.
- ✓ Employment: Farming, fishing, forestry, and mining provide livelihoods for millions.
- ✓ Trade and Economy: Countries rich in oil, coal, or minerals often earn huge revenue through exports.

3. Environmental Balance

- ✓ Oxygen and Climate Regulation: Forests absorb carbon dioxide, release oxygen, and control rainfall patterns.
- ✓ Soil Fertility: Natural vegetation prevents erosion and maintains fertility.
- ✓ Water Cycle: Rivers, lakes, and oceans regulate global temperature and rainfall.

4. Biodiversity and Ecosystem Support

- ✓ Natural resources provide habitats for countless species of plants and animals.
- ✓ Forests, oceans, and wetlands maintain biodiversity, which is crucial for ecological stability.
- ✓ Each resource is interlinked—for example, forests protect rivers, and rivers support marine life.

5. Cultural and Social Importance

- ✓ Many civilizations (like the Indus Valley, Mesopotamia, Nile Valley) developed near rivers.
- ✓ Forests, mountains, and rivers are considered sacred in many cultures.
- ✓ Natural resources inspire art, literature, and tradition.

6. Technological and Scientific Development

- ✓ Minerals and metals are the foundation of modern technology, from smartphones to spacecraft.
- ✓ Renewable resources like solar and wind are leading innovations in clean energy.

- ✓ Medical resources such as herbs and plants are used in Ayurveda, homeopathy, and modern medicine.

7. National Security and Strategic Value

- ✓ Energy resources like oil and natural gas influence global politics and international relations.
- ✓ Control over natural resources strengthens a nation's economy and defense.
- ✓ Many conflicts in the world are linked to the control of water, oil, and minerals.

Ways to Save Natural Resources

1. Water Conservation: Use water wisely, fix leaks, and adopt rainwater harvesting.

2. Energy Conservation: Switch off unused appliances, use renewable energy like solar and wind, and reduce dependence on fossil fuels.

3. Afforestation: Planting more trees and protecting forests help maintain ecological balance.

4. Reduce, Reuse, Recycle: Minimizing waste can save raw materials and reduce pollution.

5. Sustainable Practices: Using eco-friendly products, organic farming, and public transport reduce pressure on natural resources.

Present Challenges

1. Deforestation is destroying biodiversity and reducing oxygen supply.

2. Water Scarcity is a global crisis, according to the UN; 1 in 3 people lack access to safe drinking water.

3. Fossil Fuel depletion is leading to energy insecurity, as petroleum reserves may get out in the coming decades.

4. Climate Change caused by overuse of natural resources is resulting in floods, droughts, and rising temperatures.

Role of Individuals and Government

Every individual can contribute by adopting simple habits like switching off lights, reducing water wastage and preferring public transport. Governments must enforce strict laws against overexploitation. Invest in renewable energy and spread awareness. Companies, international cooperation, is also necessary since environmental issues go beyond national bodies.

Conclusion

Natural resources are treasures that sustain life on Earth. Saving natural resources is the responsibility of every individual. Small steps taken today can lead to big changes tomorrow. By adopting sustainable lifestyles and spreading

awareness, we can ensure that these precious gifts of nature are available not only to us but also to the generations to come. Conserving natural resources is not a choice but a necessity for our survival and the well-being of future generations.

Rakshitha.G.N
I Year Student Teacher

THE OCTOPUS – AN AMAZING SEA ANIMAL

Introduction

An octopus is an eight-armed, boneless marine mollusk known for its intelligence, camouflage abilities, and unique physiology, including three hearts and blue blood. They belong to the class Cephalopoda and are found in all oceans, typically living on the seafloor near reefs or in crevices.

The octopus is one of the most interesting animals in the ocean. It belongs to the Mollusca family, just like squids and cuttlefish. The special thing about an octopus is that it has no bones. Because of this, it can bend and squeeze through very small spaces to hide from its enemies.

The octopus has eight long arms, and each arm is covered with small suckers. These suckers help it to hold things, feel objects, and even taste food. With its arms, the octopus catches crabs, fish, and other sea animals. It also has a sharp beak, like a parrot's, which it uses to break open shells.

This animal is very clever. Scientists have found that octopuses can open jars, play with toys and escape from tanks. They are known as one of the smartest animals without a backbone.

The octopus can also change its body colour and skin texture. This helps it hide from bigger fish and other predators. If it is in danger, it can release black ink into the water. The ink confuses the enemy and gives the octopus a chance to swim away. Most octopus live alone, usually in holes or dens at the bottom of the sea.they do not live very long- only a few months to a years. Even though their life is short, they are very important for the balance of life in the ocean.

In short,the octopus is a wonderful sea creature with its eight arms, smart brain and ability to hide,it truly shows us how amazing nature can be.

Conclusion:

The conclusion about the octopus is that they are incredibly intelligent and adaptable creatures with unique reproductive strategies, whose study offers insights into resilience and diversity.

Ramya Y P
I Year Student Teacher

INDIAN SPACE RESEARCH ORGANISATION

Introduction:

The Indian Space Research Organisation (ISRO) is the space agency of the Government of India, founded on August 15, 1969 by Dr. Vikram Sarabhai. It was established to develop and use space technology for the nation's progress in communication, education, weather forecasting, and scientific exploration.

ISRO's headquarters is located in Bengaluru, Karnataka, and it operates under the Department of Space. The organization has achieved great success with missions like Chandrayaan, Mangalyaan, and Aditya-L1, making India one of the leading space powers in the world.

Aims and Objectives of ISRO

Aims

- To advance space technology and use it for national development.
- To achieve self-reliance in space science and technology.
- To develop satellites, launch vehicles, and related technologies.
- To explore outer space and carry out planetary missions.
- To strengthen India's position in global space research and cooperation.

Objectives

- Satellite Development: Design and launch satellites for communication, weather forecasting, remote sensing, and navigation.

- Space Applications: Use space technology for agriculture, resource management, education, health, and disaster management.
- Launch Vehicle Program: Develop indigenous launch vehicles like PSLV, GSLV, and SSLV for satellite deployment.
- Space Exploration: Conduct interplanetary missions like Chandrayaan (Moon) and Mangalyaan (Mars).
- Research and Development: Promote innovation in space science and technology.

General Satellite program in ISOR

- INSAT: Communication, TV, weather, and disaster monitoring.
- IRS: Remote sensing for agriculture, forestry, water, and land management.
- GSAT: Advanced communication and internet services.
- NAVIC: India's regional navigation system.
- ASTROSAT: Space observatory for studying stars and galaxies.
- Chandranan& Mangalyaan: Moon and Mars exploration missions.

Application of ISRO

- Communication: Provides satellite-based TV, radio, telephone, and internet services.
- Weather Forecasting: Helps predict cyclones, rainfall, and other weather conditions.
- Disaster Management: Monitors floods, earthquakes, and natural disasters for relief operations.
- Agriculture: Supports crop monitoring, soil health, and irrigation planning.
- Navigation: Provides accurate positioning through NAVIC for transportation and logistics.
- Resource Management: Monitors forests, water, minerals, and land use
- Space Exploration: Conducts scientific missions to the Moon, Mars, and other celestial bodies.
- Education & Research: Encourages scientific learning and satellite-based education programs.

CONCLUSION

The Indian Space Research Organisation (ISRO) has established itself as a global leader in space exploration, achieving remarkable milestones and significantly contributing to India's technological advancement and global standing in space research.

Shilpa H R
I Year Student Teacher

MAGNET – A WONDERFUL MAGNET OBJECT

Introduction to Magnet:

A magnet is a special object that attracts materials like iron, nickel, and cobalt. The word "magnet" comes from a place called Magnesia in ancient Greece, where natural magnetic stones were first found.

Magnets have been used for thousands of years. In the old days, sailors used magnetic compasses to find directions at sea. Even today, magnets play an important role in our daily lives — in fans, televisions, radios, speakers, mobile phones, and computers.

Every magnet has two ends called poles the North Pole (N) and the South Pole (S). When two magnets are brought close, like poles repel each other (N–N or S–S), and unlike poles attract each other (N–S).

Types and Properties of Magnets

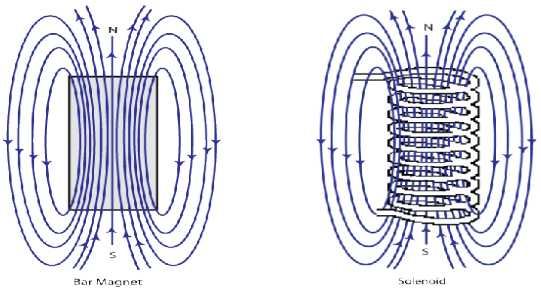
There are mainly two types of magnets:

1. Natural magnets: These are found in nature. Example: Lodestone (Magnetite).

2. Artificial magnets : These are made by humans using iron or steel.

Examples: Bar magnet, Horseshoe magnet, Ring magnet, and Electromagnet.

Properties of Magnets



1. Attractive property: Magnets attract certain metals such as iron and steel.

2. Directive property: A freely suspended magnet always points in the north-south direction.

3. Poles exist in pairs: If a magnet is cut into two, each piece will have both a north and a south pole.

4. Repulsion and attraction: Like poles repel, unlike poles attract.

Magnets can also lose their magnetism if they are dropped, heated, or hammered. To keep them strong, magnets are stored with keepers (soft iron pieces) at their ends.

Magnets are very useful in our daily life and in different fields of science and technology.

Uses of Magnets

In compasses: To show direction.

In electric devices: Like fans, radios, speakers, motors, and generators.

In hospitals: MRI (Magnetic Resonance Imaging) uses strong magnets to take pictures of body parts.

In industries: For separating iron objects from other materials.

In doors and bags: Magnetic locks help to close them easily.

Fun Facts:

The Earth itself acts like a giant magnet with its own north and south poles.

Birds and sea turtles use Earth's magnetic field to find directions while migrating.

Conclusion:

Magnets are small but powerful tools that make our lives easier. From simple toys to complex machines, magnets are everywhere. Understanding magnets helps us appreciate how science works in nature and technology. Truly, the magnet is a wonderful and magical object of nature.

Shobha B R
I Year Student Teacher

THE ROLE OF SCIENCE IN EVERYDAY LIFE

Science is a systematic and logical study into how the universe works. Science is an ever-changing subject. Science is also defined as the systematic observation, experiment, and measurement of the nature and behaviour of the material and physical universe, as well as the formulation of laws to represent these facts in general terms. Science is one of humankind's blessings. It has had a significant part in enhancing the standard of living of mankind. In every aspect of our lives, science is omnipresent and omnipotent. Science is the main protagonist in every part of our lives.

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Importance of Science in Our Daily lives

You ever wondered how we manage to stay cool in the face of air conditioning, fans, and coolers? Humans are naturally curious beings who are interested and curious about the reasons for events. However, how to study the qualities of a certain species or object was a major concern for all humans. There are scientists who have grouped the study of several subjects under the broad discipline of science.

Human beings have benefitted immensely from science. Man, as a logical being, has been strange in his pursuit of environmental concerns, which has resulted in several discoveries in various parts of the globe. The study of the environment is known as science. Animals, chemicals, the force, the earth, plants, and other subjects are studied in several fields of science such as physics, chemistry, and biology.

Einstein said that "All our science measured against reality, is primitive and childlike - and yet is the most precious thing we have." Einstein said that "All our science measured against reality, is primitive and childlike - and yet is the most precious thing we have."

Examples of Importance and Use of Science in Daily lives

Examples of the use of science in everyday life are as follows:

- We use cars, bikes, or bicycles to go from one place to another; these all are inventions of science.
- We use soaps; these are also given by science.
- We use LPG gas and stove etc., for cooking; these are all given by science.
- Even the house in which we live is a product of science.
- The iron which we use to iron our clothes is an invention of science even the clothes we wear are given by science.

Uses of Science across Multiple Fields and Industries

Use of science in different fields are as follows:

Agriculture: In the field of agriculture, science has made its mark by contributing so much. In present days machines are available even for sowing the seeds on fields. Tractor, thresher, drip irrigation system, sprinkler irrigation system, etc., all are given by science. All fertilizers are also given by chemical science.

Medicine: The medical field is based entirely on the usage of science. All the drugs are given by medicinal chemistry.

Tools used in the medical field are also given by science. Machines such as stretchers, the ECG machine, MRI machines and even injections were invented by science.

Transportation: All vehicles are the invention of science. Science has made the world a small place. You can reach Kashmir to Kanyakumari in just a few hours. Cycle, scooters, cars, aircraft, etc., all are inventions of science. We can transport goods easily and faster by the use of machines given by science.

Communication: Science has made the world very small. You can talk to anyone anywhere in a fraction of seconds. Telephones, mobile phones, etc., all are the inventions of science. All these mediums of communications are available at a very low cost as well. So, all are within reach of the common man. Science has made it very easy and cheap to talk to someone using a mobile phone.

Construction: Science is the base of all buildings constructed by us. The construction of buildings is completed based on the technology given by science. Machines used in the construction work such as motor graders, bulldozers, backhoe loaders, etc. given by science.

Photography: Science has given us many machines for photography. Nowadays, it's very easy to click on a picture. The camera has been inserted even in your small mobile phones. Apart from these, science has given us many machines which are useful in each and every aspect of our life, such as computers.

Overall, Observing the magic and importance of science, we can say that it has a vast use in all fields of human life. It is of great importance to make our life easier. It gives an answer to all curiosities related to life. It gives wings to our imagination by its facts and theories.

Conclusion for the role of science in ever yday life

In conclusion, the role of science in e veryday life is profound and multifaceted. It shapes our communication, technology, health, and environment, making our lives easier, healthier, and more exciting. Scienc e provides us with the tools and knowledge to solve problems, innovate, and protect o ur planet. By understanding and appreciati ng the impact of science, we can build a be tter future for everyone.

Sumati Patil
I Year Student Teacher

NATURE

Nature we are surrounded and embrace by her: powerless to separate ourselves from men she plays a game for love, and rejoices the moreher, and powerless to penetrate beyond herd think. With many, her moves are so hidden; that Without asking, or warning, she snatches us up into the game is over before they know it.

That which is most unnatural is still Nature; her circling dance, and whirls us on until we are stupidest philistinism has a touch of her genius. Tired, and drop from her arms. Whoso cannot see her everywhere, sees her no, she is ever shaping new forms: what is, has never where rightly. yet been; what has been, comes not again.

Every She loves herself, and her innumerable eyes and thing is new, and yet nought but the old. Affections are fixed upon herself. She has divided we live in her midst and know her not. She is herself that she may be her win delight. She incessantly speaking to us, but betrays not her secret. Causes an endless succession of new capacities for we constantly act upon her, and yet have no power enjoyment to spring up, that her insatiable sympathy over her. The one thing she seems to aim at is Individuality may be assuaged. She

rejoices in illusion. Whoso destroys it in him.

Yet she cares nothing for individuals. She is always self and others, him she punishes with the sternest building up and destroying; but her workshop is tyranny. Whoso follows her in faith, him she takes inaccessible.as a child to her bosom.

Her life is in her children; but where is the mother? Her children are numberless. To none is she is the only artist; working-up the most uniform altogether miserly; but she has her favourites, on material into utter opposites; arriving, without a trace whom she squanders much, and for whom she makes of effort, at perfection, at the most exact precision, though always veiled under a certain softness. Great sacrifices. Over greatness she spreads her shield. Each of her works has an essence of its own; She tosses her creatures out of nothingness, and each of her phenomena a special

characterisation: tells them not whence they came, nor whither they and yet their diversity is in unity. It is their business to run; she knows the road. She performs a play; we know not whether she sees. Her mechanism has few springs, but they never it herself, and yet she acts for us, the lookers-on. Wear out, are always active and manifold. Incessant life, development, and movement are the spectacle of Nature is always new, for she is in her, but she advances not. She changes for ever always renewing the spectators. Life is her most and ever, and rests not a moment. Quietude is exquisite invention; and death is her expert con-inconceivable to her, and she has laid her curse trance to get plenty of life. upon rest. She is firm. Her steps are measured, she wraps man in darkness, and makes him for everher exceptions rare, her laws unchangeable.

long for light. She creates him dependent upon theShe has always thought and always thinks; though earth, dull and heavy; and yet is always shaking him not as a man, but as Nature. She broods over an until he attempts to soar above it.

Nature is the foundation of life on Earth, providing the resources and beauty that sustain us. It offers not only physical necessities like air, water, and food but also emotional and spiritual nourishment through its serenity and wonders. However, as human activities increasingly threaten the environment, it is essential that we recognise our responsibility to protect and preserve nature. By adopting sustainable practices and respecting the natural world, we can ensure that future generations continue to benefit from its life-giving presence. Nature is a gift that requires our care and attention to thrive, and it is our duty to safeguard it.

Swathi H B
I Year Student Teacher

AMAZING WONDERS OF SCIENCE

Photosynthesis – Nature's Powerhouse

Photosynthesis is the process through which green plants prepare their own food using sunlight, water, and carbon dioxide. This miracle occurs in chloroplasts containing chlorophyll, which absorbs sunlight. The plant converts light energy into chemical energy, producing glucose for food and releasing oxygen into the atmosphere. This oxygen supports all living organisms.

Photosynthesis also helps maintain the balance of gases in the air. Without it, life on Earth could not exist. It forms the base of the food chain and is truly one of nature's most important processes.

Electricity – Energy That Drives the World

Electricity is an essential form of energy that powers our homes, industries, and technology. It is generated by the movement of electrons through a conductor. Electricity can come from various sources such as coal, water, wind, or sunlight. Among these, renewable sources like solar and wind energy are the most environment-friendly. Almost every aspect of modern life — lighting, communication, transport, and medical care depends on electricity. Using electricity wisely is important to reduce pollution and conserve natural resources.

Global Warming – A Growing Threat Global warming is the rise in Earth's average temperature abused by the build-up of greenhouse gases like carbon dioxide and methane. These gases trap the Sun's heat, leading to climate Change, melting glaciers, floods, and droughts. The major causes are deforestation, pollution, and the burning of fossil fuels. To combat this threat, we must plant more trees, use renewable energy, and avoid wasteful habits. Awareness and action are key to protecting our planet for future generations.

DNA – The Blueprint of Life

DNA (Deoxyribonucleic Acid) is the molecule that carries genetic information in all living beings. It determines physical traits such as eye colour, height, and even health conditions. Discovered by Watson and Crick, DNA has a double-helix structure that stores biological instructions for growth and reproduction. Scientists use DNA in medicine to identify diseases, in agriculture to improve crops, and in forensics to solve crimes. The study of DNA has transformed biology and given rise to new fields like genetic engineering and biotechnology. Space Exploration Reaching for the Stars Space exploration is the study of outer space using satellites, telescopes, and spacecraft. It began with the first human landing on the Moon in 1969 and has since expanded to Mars and beyond.

Space agencies like NASA and ISRO explore planets, stars, and galaxies to understand the universe's mysteries. Satellites also help in communication, weather forecasting, and navigation on Earth. Space exploration inspires curiosity and innovation, reminding us that science has no limits.

Conclusion

Science touches every part of our lives from the smallest cell to the largest galaxy. It helps us understand the world, solve problems, and build a better future.

Vandana J R
I Year Student Teacher

THE ROLE OF SCIENCE AND TECHNOLOGY IN MODERN EDUCATION

Introduction

Science and technology have become inseparable from modern education. The 21st century is known as the "age of science and technology," where learning is no longer confined to textbooks or classrooms.

Meaning of Science and Technology

Science is the systematic study of the natural world through observation and experimentation.

Technology is the practical application of scientific knowledge for human welfare.

Impact of Science and Technology on Education

1. Virtual and Remote Learning:

Online platforms like Google Classroom, Zoom, and educational websites make

learning possible anytime and anywhere, breaking geographical barriers.

2. Practical Learning:

Simulations, digital laboratories, and science experiments conducted through virtual models help students understand theories better.

3. Research and Innovation:

Science and technology promote critical thinking and creativity among students, inspiring them to invent, innovate, and find new solutions.

Advantages of Using Technology in Science Education

- Increases student engagement through visuals, animations, and experiments.
- Encourages independent learning and curiosity.
- Saves time and resources by using digital content instead of printed material.

Challenges in Integrating Technology

While there are many benefits, some challenges remain:

- Lack of digital literacy among teachers or students.
- Limited access to internet and devices in rural areas.
- Over-dependence on technology reducing creativity and social interaction.

Future of Science and Technology in Education

The future of education will be driven by Artificial Intelligence (AI), Virtual Reality (VR), and Robotics.

Students will learn through personalized digital experiences, experiments in virtual labs, and collaboration with peers worldwide.

Science and technology together will make education more inclusive, accessible, and learner-centered.

Conclusion

The conclusion for the role of a science teacher is that their role has evolved from being a knowledge transmitter to a facilitator who fosters scientific inquiry, critical thinking, and problem-solving skills in students.

Yashaswini
I Year Student Teacher

BLACK HOLES

Black holes are among the most mysterious cosmic objects, much studied but not fully understood. These objects aren't really holes. They're huge concentrations of matter packed into very tiny spaces. A black hole is so dense that gravity just beneath its surface, the event horizon, is strong enough that nothing – not even light – can escape. The event horizon isn't a surface like Earth's or even the Sun's. It's a boundary that contains all the matter that makes up the black hole.

There is much we don't know about black holes, like what matter looks like inside their event horizons. However, there is a lot that scientists do know about black holes.

Essential Black Hole Facts

Closest: The nearest known black hole, called Gaia BH1, is about 1,500 light-years away.

Farthest: The most distant black hole detected, at the center of a galaxy called QSO J0313-1806, is around 13 billion light-years away.

Bigges: The most massive black hole observed, TON 618, tips the scales at 66 billion times the Sun's mass.

Smallest: The lightest-known black hole is only 3.8 times the Sun's mass. It's paired up with a star.

Spaghettification: A real term that describes what happens when matter gets too close to a black hole. It's squeezed horizontally and stretched vertically, resembling a noodle.

Spin: All black holes spin. The fastest-known – named GRS 1915+105 – clocks in at over 1,000 rotations per second.

Particle accelerators: Monster black holes at the centers of galaxies can launch particles to near light speed.

Gravity's the same: If you replaced the Sun with a black hole of the same mass, the solar system would get a lot colder, but the planets would stay in their orbits.

Finding Black Holes

Black holes don't emit or reflect light, making them effectively invisible to telescopes. Scientists primarily detect and study them based on how they affect their surroundings.

Black holes can be surrounded by rings of gas and dust, called accretion disks that emit light across many wavelengths, including X-rays.

A supermassive black hole's intense gravity can cause stars to orbit around it in a particular way. Astronomers tracked the orbits of several stars near the center of the Milky Way to prove it houses a supermassive black hole, a discovery that won the 2020 Nobel Prize.

When very massive objects accelerate through space, they create ripples in the fabric of space-time called gravitational waves. Scientists can detect

some of these by the ripples' effect on detectors.

Massive objects like black holes can bend and distort light from more distant objects. This effect, called gravitational lensing, can be used to find isolated black holes that are otherwise invisible.

Black Holes Are Not ...

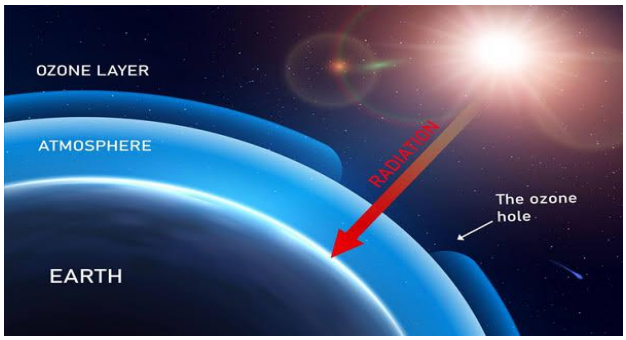
Wormholes. They don't provide shortcuts between different points in space, or portals to other dimensions or universes.

Cosmic vacuum cleaners. Black holes don't suck in other matter. From far enough away, their gravitational effects are just like those of other objects of the same mass.

Shruthi R
II Year Student Teacher

PRESERVING THE OZONE LAYER WITH MODERN SOLUTIONS

The ozone layer is a crucial shield that protects Our planet from the sun's harmful ultraviolet Radiation .as Modern society has evolved, new Technologies have emerged to help mitigate the Threats to this delicate layer of our atmosphere.



Why is it important

Atmospheric shield

The ozone layer acts as a protective filter ,absorbing and reflecting harmful UV rays from the sun.

Vital for life

Without the ozone layer, excessive UV radiation would damage dna, increase skin cancer risk, and disrupt essential biological processes.

Delicate balance

The ozone layer is a fragile part of our atmosphere that must be carefully maintained.

Causes of ozone depletion

- Chemical pollutants
- Climate change
- Human activities

Conventional methods for ozone layer Protection

- **Phasing out ozone depleting substances:** International agreements like the Montreal protocol have mandated the gradual elimination of harmful chemicals

Promoting alternatives: The development and adoption of ozone friendly substitute for industrial and commercial applications

Regulatory oversight: Governments implementing strict laws and policies to monitor and control the use of ozone depleting substances

Public awareness: Educational campaigns inform citizens about the important of the ozone layer and how to contribute to its protection

Emerging technology for ozone layer preservation

Renewable energy: Transitioning to clean, ozone friendly energy sources like solar, wind and geothermal power.

Recycling and waste management: Improving collection and disposal of ozone depleting substance to prevent their release into the atmosphere

Carbon capture and storage: Developing technologies to capture and safety Store greenhouse gases that contribute to ozone depletion

Ozone friendly chemicals: Innovative molecular engineering to create new substance that does not harm the ozone layer

Conclusion

By embracing modern, sustainable solutions,we can safeguard the ozone layer and ensure a healthy, thriving planet for all.together ,we can make a lasting difference in the fight against ozone depletion.

Amith C L
II Year Student Teacher

BIGGEST MYSTERIES IN THE UNIVERSE

From the backyard of our own Solar System to the distant shores of the cosmic ocean, the Universe is full of mysteries. It has always been like that. Centuries ago, ancient astronomers were mystified by the nature of comets and wondered about the chemical make-up of stars.

These old riddles are now solved, but as bigger telescopes and more sensitive instruments peer deeper into space, they have been replaced by new conundrums. Now we ponder questions about black holes, about the very nature of physical laws, and about our place in the Universe.

When you read our roundup of the 9 biggest cosmic mysteries (no solutions guaranteed!) you'll realise that one thing is very clear: the biggest mystery of all is the Universe itself.

Cosmologists are desperately trying to understand its birth, composition and destiny.

They're certainly not there yet, although answers may well be within reach over the coming decades. And by then, who knows what new mysteries we might have learned to ask. In the meantime, here are 9 of the biggest mysteries concerning space, the cosmos, and just about everything in the Universe.

How do galaxies form?

How do galaxies form? The simple answer is: through gravity. Primordial matter in the newborn Universe wasn't spread out evenly.

Areas of slighter greater density attracted more matter and grew bigger over time; empty spaces grew emptier.

Thus, even though the Universe was expanding, matter was pulled into lumps that eventually grew into galaxies like our own Milky Way.

Cosmologists study the birth of galaxies in an expanding Universe by running huge computer simulations, like the giant 'Millennium Run' performed by Durham University scientists.

That's right: astronomers can build a universe in a computer.

The statistics of the resulting galaxy distribution are then compared to the observed large-scale structure of the Universe.

The good news is that one particular model agrees very well with the real thing: a Universe in which most of the matter consists of dark particles that hardly interact with normal atoms.

According to this model, galaxies and clusters of galaxies should be

interconnected by filamentary structures, and some observations seem to support this view.

However, there's a catch.

The models also predict that big galaxies are surrounded by hundreds of smaller ones, and those are not observed.

Also, it's unclear how the first massive galaxies could form so early after the Big Bang.

Abhishek N Jadar
II Year Student Teacher

PHYSICS IN DAILY LIFE

Physical facts are present in all aspects of our lives. From the pre-scientific past to our modern era, physics is everywhere, whether you are walking, running, jumping, tossing, dancing, or simply doing nothing.

Physics is the superhero of science, as it is the basis of all other experimental sciences for students. It helps us to understand why things fall, why the Earth spins, and why humans don't float away into space. Physics in everyday life helps improve our understanding of the natural world while also laying the foundations for many technological developments.

Application of physics in daily life: Walking and Running: One of the simple examples of physics in everyday life is the frictional force which helps us to walk or run easily. It acts like a "grip" between your shoes and the ground, which helps you to walk or run without slipping.

Rollers: Concepts such as gravity, acceleration, and inertia are used here. The roller coaster is initially dragged up a steep hill, storing potential energy.

Fans: Fans, the most needed thing in summer, depend on fluid dynamics and electromagnetic concepts. When a fan is turned on, the blades inside it revolve

Refrigerator: Refrigerators work on thermodynamic and heat transfer principles. Refrigerators use the process of heat transfer to remove the heat from inside and release it outside.

In one way or another, physics governs the whole universe. we can understand the natural world, and improve our daily lives. It gives us the ability to develop original ideas, enhance current procedures, and make wise decisions in our personal and professional lives.

Sharvari A M
II Year Student Teacher

GALAXY

A galaxy is a sprawling space system which is composed of stars, dust, interstellar gas, stellar remnants, and dark matter and all held together by gravity. The word 'Galaxy' is termed from the Greek word '*galaxies*'. It is tough to tell how big the universe is! The universe has many galaxies, and each carries millions of stars which are bounded by a unique force known as gravitational force. There are approximately 70,000 million stars in the universe. The solar system where our earth exists is in the Milky Way Galaxy.

Galaxies differ from each other in shape, size, colour and composition. There are three types of galaxies that we find in the universe.

Elliptical Galaxies

These type of galaxies are like flattened balls of old stars and contain very little gas. It also includes the most massive galaxies containing a trillion stars.

Spiral Galaxies

Spiral galaxies have a flattened shape. They have a bulge in the centre composed of old stars surrounded by a disk of young stars and are arranged in spiral arms.

Irregular Galaxies

As its name suggests, Irregular Galaxies have no particular shape. There are billions of galaxies in the universe, the centre of the galaxy releases a huge amount of heat, radiation, radio waves and x-rays.

Galaxies are too far from us, that is, a spacecraft that moves with a speed of 60,000 km/hr reaches Alpha Centauri Galaxy which is 4.2 light-years after 80,000 years. The Milky Way Galaxy includes the sun, earth, and our solar system. It contains dust particles, huge clouds, and gases that lie throughout it and depths of interstellar space. The term Milky Way refers to the large portion of the Milky Way galaxy that can be seen from earth as well. Stars are celestial objects that can generate their own light. They are mostly made up of hydrogen gas with a little helium in them.A galaxy is a sprawling space system which is composed of stars, dust, interstellar gas, stellar remnants, and dark matter and all held together by gravity.

There are three types of galaxies that we find in the universe:

- Elliptical galaxies
- Spiral galaxies
- Irregular galaxies

Spiral galaxy

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Saniya Parveen
II Year Student Teacher

BIOLUMINESCENCE

Imagine a world where forests glow with an ethereal light, where the ocean depths are illuminated by dancing specks, and where creatures signal to each other not with sound, but with flashes of pure, cold light. This isn't a fantasy; it's the mesmerizing reality of bioluminescence,

the production and emission of light by a living organism.

Bioluminescence is a chemical reaction, a dazzling display orchestrated by an enzyme called luciferase. This enzyme acts upon a molecule called luciferin, and in the presence of oxygen, a flash of light is produced. Unlike a flickering candle or a glowing ember, bioluminescence is "cold light" – very little heat is generated in the process, making it an incredibly efficient form of illumination.

While many associate bioluminescence with the deep sea, its presence is far more widespread. From terrestrial fungi that light up the forest floor to the iconic flash of fireflies on a warm summer night, the diversity of bioluminescent organisms is astonishing.

Life in the Deep, Dark Sea

The ocean's twilight and midnight zones are perhaps the most dramatic stages for bioluminescence. Here, sunlight cannot penetrate, and the ability to produce light becomes a crucial tool for survival. Many deep-sea fish, squid, and jellyfish use bioluminescence for a myriad of purposes. Some employ it as a lure, dangling a glowing appendage to attract unsuspecting prey. Others utilize it as a defensive mechanism, emitting blinding flashes to startle predators or creating a "burglar alarm" effect, drawing the attention of a larger predator to their attacker. Still others use subtle patterns of light to communicate with potential mates, a dazzling courtship display in the perpetual darkness.

Beyond the Ocean Depths

On land, the most familiar example of bioluminescence is the firefly. These charming beetles use specific flashing patterns to attract mates, a complex language of light that varies between species.

Shuhan K A
II Year Student Teacher

CLIMATE CHANGE

Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas.

Burning fossil fuels generates greenhouse gas emissions that act like a

blanket wrapped around the Earth, trapping the sun's heat and raising temperatures.

The main greenhouse gases that are causing climate change include carbon dioxide and methane. These come from using gasoline for driving a car or coal for heating a building, for example. Clearing land and cutting down forests can also release carbon dioxide. Agriculture, oil and gas operations are major sources of methane emissions. Energy, industry, transport, buildings, agriculture and land use are among the main sectors causing greenhouse gases.

Climate change can affect our health, ability to grow food, housing, safety and work. Some of us are already more vulnerable to climate impacts, such as people living in small island nations and other developing countries. Conditions like sea-level rise and saltwater intrusion have advanced to the point where whole communities have had to relocate, and protracted droughts are putting people at risk of famine. In the future, the number of

people displaced by weather-related events is expected to rise.

To decrease the climate change UN framework the actions, three broad categories of actions are cutting emissions, adopting to climate impacts and financing required adjustment.

To degrees climate change firstly we can change our actions that is use the renewable energy resources like solar and wind for replacement of fossil fuels, use the environment friendly materials, prohibit the use of plastics, planting trees helps more to decrease climate change

When we change our life styles then climate change also decrease gradually and we can leave healthy.

Savitha B
II Year Student Teacher

SCIENTISTS IN CHINA DISCOVER RARE MOON CRYSTAL THAT COULD POWER EARTH

Rare lunar crystal found on the near side of the moon is giving scientists hope of providing limitless power for the world forever.

The lunar crystal is made of material previously unknown to the scientific community and contains a key ingredient for the nuclear fusion process, a form of power generation that harnesses the same forces that fuel the Sun and other stars in the galaxy.The crystal was found in lunar basalt particles collected from the moon in 2020 and makes China the third country to discover a new lunar mineral, behind the US and the former Soviet Union. The Chinese moon mission landed in Oceanus Procellarum in December 2020 and was the first lunar sample return mission since the 1970s.

One of the primary ingredients found in this crystal is helium-3, which scientists believe may provide a stable fuel source for nuclear fusion reactors. The element is incredibly rare on Earth, but it seems to be fairly prevalent on the moon. China's next moon mission is expected to be Chang'e 6 in 2024, which will attempt to collect the first samples from the far side of the moon which never faces the Earth.

For decades, scientists have been intrigued by helium-3 and its potential source of fuel for nuclear fusion. Nuclear fusion reactions occur naturally, when two light atoms merge into a heavier one, under extreme pressure and heat. They take place inside stars, but humans have

yet to create a fusion reactor with enough energy to kickstart the process.

Helium-3 is particularly promising as it produces significantly less radiation and nuclear waste than other elements, according to the European Space Agency. The current nuclear fission process, which is used in nuclear power plants, releases not only energy but radioactivity, and spent nuclear fuel must be reprocessed into uranium, plutonium, and other waste. It's a process that has raised serious safety concerns, and as a result, scientists have been searching for a way to create nuclear power from nuclear fusion, rather than fission. During the fusion process, radioactive waste is not produced, potentially making a safer and more efficient fuel source.

Around 25 tonnes of helium-3, equivalent to a fully loaded Space Shuttle cargo bay, could power the US for a year. According to estimates, this means that

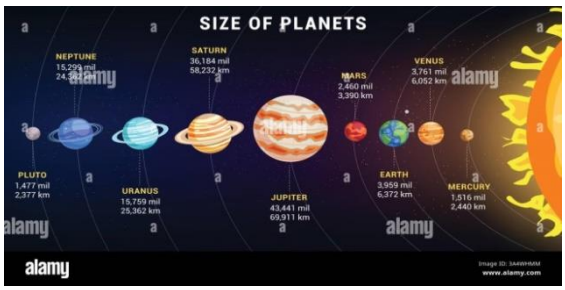
helium-3 has a potential economical value of $3bn a ton.

Multiple private companies and countries with space agencies have signaled their intentions to mine the moon for helium-3, and this latest discovery could kickstart the race.

Ramya H R
II Year Student Teacher

PLANETARY SCIENCE

Planetary science is the study of planets, moons, and planetary systems, including their composition, dynamics, geology, and atmospheres. It covers both our Solar System and exoplanets orbiting other stars. This field combines elements of astronomy, geology, physics, chemistry, and atmospheric science to understand how planets form, evolve, and interact with their environments. Key areas of research include planetary geology, atmospheres, magnetospheres, and the search for extra terrestrial life. Scientists use telescopes, space probes, and rovers to explore planets and gather data.



Key Areas of Planetary Science:

- **Planetary Geology:** Investigates the composition, structure, and surface processes of planetary bodies, such as volcanism, tectonics, and impact cratering.
- **Atmospheric Science:** Studies the atmospheres of planets and moons, focusing on their composition, dynamics, weather patterns, and climate systems.
- **Planetary Interiors:** Explores the internal structure and dynamics of planets and moons, including their core, mantle, and crust.
- **Astrobiology:** Examines the potential for life elsewhere in the universe by studying the conditions necessary for life and searching for biosignatures on other planets and moons.

Recent Developments in Planetary Science:

- **Mars Exploration:** China's Zhurong rover has detected evidence of ancient sandy beaches beneath the Martian

surface, suggesting the presence of a large ocean called Desterilise approximately 3.5 to 4 billion years ago. This discovery enhances our understanding of Mars' climatic history and its potential to have harbored

- **Planetary Alignments:** In late February 2025, a rare celestial event occurred where seven planets—Mercury, Venus, Mars, Jupiter, Saturn, Uranus, and Neptune—aligned in the night sky. Such alignments offer valuable opportunities for observation and study, contributing to our knowledge of planetary motions and interactions.
- **Lunar Resource Utilization:** The prospect of mining the Moon for minerals like water, helium-3, and rare earth elements is being explored, potentially leading to a multibillion-dollar industry. However, astronomers caution that such activities could negatively impact scientific research and necessitate the development of legal frameworks to regulate space mining

Planetary Science Research in India:

In India, institutions like the National Geophysical Research Institute (NGRI) and the Physical Research Laboratory (PRL) are actively engaged in planetary science research. NGRI's Planetary Sciences Division conducts advanced studies on the geology and geophysics of terrestrial planets and the Moon to understand their origin and evolution.

Similarly, PRL focuses on the development of scientific instruments for planetary missions, contributing to India's endeavours in planetary exploration.

Through these diverse research areas and recent developments, planetary science continues to deepen our understanding of the solar system and the potential for life beyond Earth.

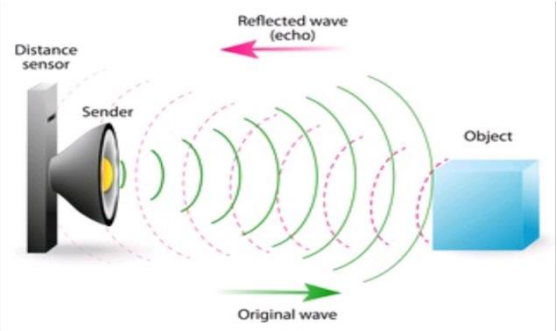
Yashodha
II Year Student Teacher

USES OF MULTIPLE REFLECTION OF SOUND

Multiple reflection of sound occurs when a sound wave strikes a hard surface and bounces back repeatedly before reaching our ears. Just like a ball bounces several times when thrown on the ground, a sound wave also reflects many times when it meets surfaces such as walls, ceilings, buildings, or mountains. In large

halls, tunnels, or auditoriums, the sound does not travel in a straight line; instead, it keeps striking different surfaces again and again. These repeated reflections help the sound travel further and sometimes create effects like echo or reverberation. Multiple reflection of sound is an important concept in physics because it explains how sound behaves in large or enclosed spaces.

This phenomenon has many useful applications in daily life. In auditoriums, cinema halls, and lecture rooms, architects design the walls and ceiling in such a way that multiple reflections help the speaker's voice reach every corner clearly. Instruments like stethoscopes also work on this principle, as the sound from the



patient's body reflects many times inside the tube and becomes louder for the doctor to hear. Devices such as megaphones, horns, and loudspeakers use multiple reflection to increase the strength and direction of sound. Even natural places like caves and hills produce multiple reflections, helping us hear echoes. Thus, multiple reflection of sound plays a major role in improving sound quality and communication in everyday life.

Bindu M A
II Year Student Teacher

THUNDERSTORM

A thunderstorm is a natural weather event characterized by lightning, thunder, heavy rain, and strong winds. These storms form when warm, moist air rises and cools, leading to the development of large cumulonimbus clouds. Thunderstorms can occur anywhere in the world but are most common in warm and humid regions, especially during the summer months.

Formation of Thunderstorms

Thunderstorms develop in three main stages:

- **Cumulus Stage:** Warm air rises, forming clouds as water vapor condenses.
- **Mature Stage:** The storm reaches its peak, producing heavy rain, lightning, thunder, and strong winds. Updrafts and downdrafts circulate within the cloud.

- **Dissipation Stage:** The storm weakens as cool air spreads, cutting off the warm air supply needed to sustain it.

Key Features of Thunderstorms

- **Lightning and Thunder:** Lightning is a sudden discharge of electrical energy, while thunder is the sound produced when the surrounding air rapidly expands due to lightning's heat.
- **Heavy Rain and Hail:** Thunderstorms can bring intense rainfall and, in some cases, hailstones formed by strong updrafts in the storm cloud.
- **Strong Winds and Tornadoes:** Severe thunderstorms can generate damaging winds and, in some cases, spawn tornadoes.

Dangers and Safety Precautions

- Thunderstorms can be dangerous due to flash floods, strong winds, hail, and lightning strikes. To stay safe:
- Seek shelter indoors or in a hard-topped vehicle.
- Avoid open fields, tall trees, and bodies of water.
- Stay away from windows and electrical appliances.

Importance of Thunderstorms

Despite their destructive potential, thunderstorms play a crucial role in nature. They help regulate global temperatures, replenish freshwater supplies, and even contribute to soil fertility through nitrogen fixation in the atmosphere.

Thunderstorms remain a fascinating and essential part of Earth's weather systems, constantly studied by meteorologists to improve forecasting and minimize their risks.

Thunderstorms are among nature's most powerful and dynamic weather events, bringing a mix of beauty and danger. While they can cause destructive winds, lightning, hail, and flash floods, they also play a crucial role in balancing the atmosphere and replenishing freshwater supplies. Understanding their formation, risks, and safety measures can help minimize their impact on human life and property. As meteorologists continue to study thunderstorms, advancements in forecasting and early warning systems can help communities better prepare for these intense weather phenomena. Despite their occasional threat, thunderstorms remain an awe-inspiring display of nature's power and energy.

Arpitha B
II Year Student Teacher

HOME SCIENCE A LUCRATIVE CAREER OPTION FOR STUDENTS

Home Science is a Subject about managing the house - hold This age-old myth about a purely Scientific subject is now broken as the students, are now looking it as a viable Career option.

There was a time when girls were encouraged to take up home Science that will be helpful for them after marriage Now, apart from learning to make round chapatti, home Science is taken up by Students who interested in becoming a qualified nutritionist, textile designer, or family Counsellor.

BSC in home science has five major Parts food and nutritionist, clothing & textile, family resource management, development Communication & extension and human development and family.

As per Namali Singh, faculty of home Science at Maharani's college explains that all the above mentioned subjects have purely Scientific approach that is very useful in the current Socio-economic sceuario.

There is a rise in demand of a nutritionist in gym or in hospitals our students are now Working in hospitals preparing diet plans far cancer, liver damage or kidney damage patients, all of whom needs Condition. In Clothing In clothing and textile, they are able to go for textile designers or management Almost all of our students get employment after college. Said Nimali.

She further explains that students were not interested in taking up this Subject and nearly half of the seats used. Students to make them understand the importance of this subject After Various Sessions with parents and Students, we now being able to fill around 45 Seats out of 50 Said Nimali.

Pallavi K R
II Year Student Teacher

SPACE EXPLORATION

Space exploration is the study and discovery of outer space using spacecraft, satellites, telescopes, and astronauts. It helps us learn more about the universe beyond Earth — such as planets, stars, moons, and galaxies.

Scientists and engineers send rockets, probes, and satellites into space to collect information. Some missions are

manned (with astronauts), while others are unmanned are formed, and whether life exists elsewhere.

It has also led to many useful technologies we use on Earth, such as GPS, weather forecasting, solar panels, and better communication systems.

Importance of Space Exploration

1. **Understanding the Universe:** It helps us learn how the solar system and stars work.
2. **Technological Development:** Encourages invention of new tools and machines.
3. **Earth Observation:** Satellites help study weather, climate, and natural disasters.
4. **Future of Humanity:** It explores the possibility of living on other planets.
5. **Inspiration and Education:** Motivates young people to study science and technology.

Examples

- The **Apollo missions** to the Moon.
- The **Mars Rover** exploring Mars.
- The **International Space Station (ISS)** for experiments in space.
- The **James Webb Space Telescope** observing distant galaxies.

Priyanka R
II Year Student Teacher

GLOBAL WARMING: A GROWING THREAT TO OUR PLANET

Introduction

Global warming is one of the most serious environmental challenges facing our planet today. It refers to the **gradual increase in Earth's average surface temperature** due to the excessive release of greenhouse gases into the atmosphere. This warming is mainly caused by human activities such as burning fossil fuels, deforestation, and industrial pollution.

Causes of Global Warming

1. **Burning of Fossil Fuels:** Coal, oil, and natural gas are used for energy production, releasing large amounts of carbon dioxide (CO_2) into the air.
2. **Deforestation:** Trees absorb CO_2, a major greenhouse gas. When forests

are cut down, this natural process is disrupted, leading to higher CO_2 levels.

3. **Industrial Emissions:** Factories and industries emit greenhouse gases like methane (CH_4), nitrous oxide (N_2O), and CO_2.

4. **Agricultural Activities:** Livestock farming produces methane, and the excessive use of fertilizers releases nitrous oxide.

5. **Transportation:** Vehicles burning petrol and diesel contribute significantly to CO_2 emissions.

Effects of Global Warming

- **Rising Temperatures:** Average global temperatures have increased, leading to more heatwaves and droughts.
- **Melting of Ice Caps:** The polar ice is melting, causing sea levels to rise and threatening coastal regions.
- **Extreme Weather:** Hurricanes, floods, and wildfires are becoming more frequent and intense.
- **Loss of Biodiversity:** Many animal and plant species are at risk as their natural habitats are destroyed.
- **Impact on Human Health:** Heat-related illnesses, food shortages, and water scarcity are becoming more common.

Solutions to Global Warming

1. **Reduce Carbon Emissions:** Use renewable energy sources like solar, wind, and hydro power.

2. **Afforestation:** Planting trees helps absorb CO_2 and balance the ecosystem.

3. **Energy Conservation:** Switch off unused lights, use energy-efficient appliances, and reduce wastage.

4. **Public Transportation:** Encourage cycling, walking, and the use of public transport to reduce vehicle emissions.

5. **Awareness and Education:** Educate people about sustainable living and the importance of protecting the environment.

Conclusion

Global warming is not just an environmental issue—it is a **global responsibility**. Every small action we take today can make a big difference for the future of our planet. By adopting eco-friendly habits and supporting green initiatives, we can slow down global warming and ensure a healthier, safer Earth for generations to come.

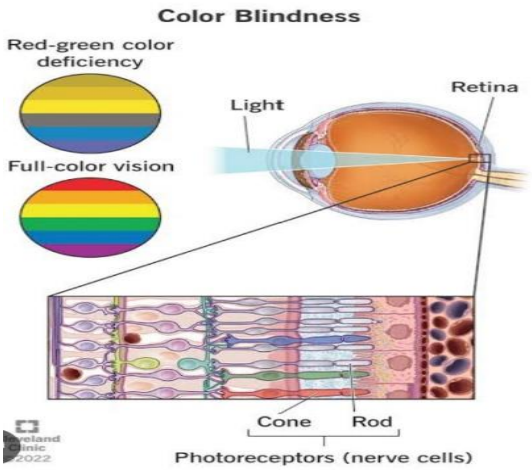
Monika B
II Year Student Teacher

COLOUR BLINDNESS

Colour blindness or colour vision deficiency (CVD) is the decreased ability to see colour or differences in colour. The severity of colour blindness ranges from mostly unnoticeable to full absence of colour perception. Colour blindness is usually a sex-linked inherited problem or variation in the functionality of one or more of the three classes of cone cells in the retina, which mediate colour vision.

Diagnosis of colour blindness is usually done with a colour vision test, such as the Ishihara test. There is no cure for most causes of colour blindness; however there is on-going research into gene therapy for some severe conditions causing colour blindness. Minor forms of colour blindness do not significantly affect daily life and the colour blind automatically develop adaptations and coping mechanisms to compensate for the deficiency. However, diagnosis may allow an individual, or their parents/teachers, to actively accommodate the condition. Color blind glasses (e.g. Chroma) may help the red–green colour blind at some colour tasks, but they do not grant the wearer "normal colour vision" or the ability to see "new" colours. Some mobile apps can use a device's camera to identify colours.

Depending on the jurisdiction, the color blind are ineligible for certain



careers, such as aircraft pilots, train drivers, police officers, fire fighters, and members of the armed forces. The effect of colour blindness on artistic ability is controversial, but a number of famous artists are believed to have been colour blind.

The most common form is caused by a genetic condition called congenital red–green colour blindness (including proton and deutan types), which affects *up to* 1 in 12 males (8%) and 1 in 200 females (0.5 The condition is more prevalent in males, because the opsin genes responsible are located on the X chromosome. Rarer genetic conditions causing colon blindness include congenital blue–yellow colour blindness (tritan type), blue cone monochromic and achromatopsia. Colour blindness can also result from physical or chemical damage to the eye, the optic nerve, parts of the brain, or from

medication toxicity. Colour vision also naturally degrades in old age.

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Anusha C
II Year Student Teacher

SCIENCE AND TEACHNOLOGY

Science is Modern God of Reason that abhors blind faith.It is said that science is the Religion of the modern age.It is also because science has revolutionalized modern life and exposed the Centuries of old beliefs and superstitions.

In this scientific age Man needs conquered by his hopes and aspirations.Hence science rules man's life. It is said to be a double edged sword which has both merits and short comings.Man

however worships science not so much because it has given him new and face ideas But because It has provided by him with a great material, Comforts and

amazing facilities .science brought about great changes in man's life .It was the Lantern Which enhanced our path to progress.

The scientist have given Humanity a number of Means of comfort. Science has made the world smaller. Presure of traveling are reduced. We can fly according to our wish at any velocity. Science has resolutionalized the modes of communications .Telegraph devices ,mobile phones and internet facilities have made communication easy .One of the prominent gifts of science is electricity ,we can't think of a world divoide of light. Science has contributed a lot of entertain. Amuse and exults man.

However with a great power comes great responsibility. Ethical consideration , environmental sustainability and the equitable distribution of Technological benefits must be addressing . As we move forward , the responsible development and application of science and Technology will be crucial in addressing Global issue such as climate change diseases and resource and scarecity.

Lavanya A Naik
II Year Student Teacher

BALANCE CLASSROOM, REAL LIFE EDUCATION

Now a days on the arithmetical abilities of children in the classroom and children selling vegetables in the market has shed useful light on the gap between formal and informal education ,it may help in bridging the gap between the two forms of education ,both of which are important ,a study has shown that children in the market are good at calculating prices and returning the balance even when odd amounts are involved ,the same working children were poor in arithmetic in the classroom ,and part of it in the market ,they found it difficult to do the sums in the abstract form,they did the some arithmetic correctly in the market without paper and pencil. conversely non-working children who were good in the classroom could not do the sums outside,and in the market, what it shows is that learning is fluenced by the method of learning the environment and perhaps the felt need to learn.

Life need and an exercise whose use the child is not fully aware of. There are many studies on the numeracy and literacy deficiencies of children in school, children, especially from weaker backgrounds, are

often found unable to cope with the learning demands in the classroom. The annual status of education reports (ASER) always talks about the inability of children of higher classes to do the calculations and text reading they are taught at lower classes.What it shows is the gap between abstract and practical arithmetic, between theory and life skills,a natural environment and a created space,and between a felt The best education strategies would try to bridge the gap, take the classroom to the market and the market to the classroom.

In a wider sense, it reflects the gap between intuition and knowledge, participation and observation, and experience and concept that is at the heart of understanding. Every skill and gift has in it dissociation between the two modes. Singing is an incomplete rendering of the music in the being and all human knowledge is an approximation of experience. We understand the world through experience, and explanation comes later. The child in the market experiences the world in numbers, It is explained to the child in the classroom, Basically no child is taught an idea or skill by the teacher. The teacher only helps the child to discover what is within. In the market, the child discovers it herself, this is the basic idea of learning and human understanding, and it should guide teaching. The study underlines its truth.

Siddaraju Pujar
II Year Student Teacher

SCIENTISTS DESIGN BATTERY THAT RUNS ON ATOMIC WASTE

Scientists have achieved a major milestone in energy storage after developing a nuclear battery that can convert atomic waste into electricity. A team in the US has already tested the next-generation battery with a prototype device capable of harvesting enough nuclear radiation to power microchips. Nuclear batteries have been hailed for their potential to generate electricity for decades without the need for charging or

maintenance. The breakthrough battery, built by researchers at Ohio State University, works by taking ambient gamma radiation from spent nuclear fuel and converting it to light via scintillator crystals. This light is then converted into

electricity through solar cells. “We’re harvesting something considered as waste and by nature, trying to turn it into treasure,” said Raymond Cao, a professor in mechanical and aerospace engineering at Ohio State University, who led the research.The battery does not incorporate radioactive materials, meaning it is safe to touch, however it is not being developed for public use. Instead, the researchers said they envisioned the batteries being used on nuclear systems for space and deep sea exploration.

The technology is also being developed in China under the country’s 14th Five-Year Plan, with Beijing-based Betavolt saying last year that it is hoping to mass produce nuclear batteries for commercial applications like phones, drones and medical devices. The working prototype built in Ohio, which is roughly the size of a sugar cube, is capable of producing 1.5 microwatts of power, though larger versions are expected to be able to produce significantly more electricity. “These are breakthrough results in terms of power output,” said Ibrahim Oksuz, a research associate in mechanical and aerospace engineering at Ohio State.

“This two-step process is still in its preliminary stages, but the next step involves generating greater watts with scale-up constructs. “The nuclear battery concept is very promising. There's still lots of room for improvement, but I believe in the future, this approach will carve an important space for itself in both the energy production and sensors industry.” A study detailing the nuclear battery, titled ‘Scintillator based nuclear photovoltaic batteries for power generation at microwatts level’, was published in the journal Optical Materials: X.

Pavithralakshmi T M
II Year Student Teacher

GLOBAL WARMING

Global warming is a gradual increase in the earth’s temperature generally due to the greenhouse effect caused by increased levels of carbon dioxide, CFCs, and other pollutants.

Global warming is the phenomenon of a gradual increase in the temperature near the earth’s surface. This phenomenon has been observed over the past one or two

centuries. This change has disturbed the climatic pattern of the earth. However, the concept of global warming is quite controversial but the scientists have provided relevant data in support of the fact that the temperature of the earth is rising constantly.

Causes of Global Warming:

Following are the major causes of global warming:

Deforestation: Plants are the main source of oxygen. They take in carbon dioxide and release oxygen thereby maintaining environmental balance. Forests are being depleted for many domestic and commercial purposes. This has led to an environmental imbalance, thereby giving rise to global warming.

Use of Vehicles: The use of vehicles, even for a very short distance results in various gaseous emissions. Vehicles burn fossil fuels which emit a large amount of carbon dioxide and other toxins into the atmosphere resulting in a temperature increase.

Chlorofluorocarbon: With the excessive use of air conditioners and refrigerators, humans have been adding CFCs into the environment which affects the atmospheric ozone layer. The ozone layer protects the earth surface from the harmful ultraviolet rays emitted by the sun. The CFCs have led to ozone layer depletion making way for the ultraviolet rays, thereby increasing the temperature of the earth.

Industrial Development: With the advent of industrialization, the temperature of the earth has been increasing rapidly. The harmful emissions from the factories add to the increasing temperature of the earth.

Agriculture: Various farming activities produce carbon dioxide and methane gas. These add to the greenhouse gases in the atmosphere and increase the temperature of the earth.

Overpopulation: An increase in population means more people breathing. This leads to an increase in the level of carbon dioxide, the primary gas causing global warming, in the atmosphere.

Volcanoes: Volcanoes are one of the largest natural contributors to global warming. The ash and smoke emitted during volcanic eruptions goes out into the atmosphere and affects the climate.

Water Vapour: Water vapour is a kind of greenhouse gas. Due to the increase in the earth's temperature, more water gets evaporated from the water bodies and stays in the atmosphere adding to global warming.

Melting Permafrost: Permafrost is frozen soil that has environmental gases trapped

in it for several years and is present below Earth's surface. It is present in glaciers. As the permafrost melts, it releases the gases back into the atmosphere, increasing Earth's temperature.

Forest Blazes:

Forest blazes or forest fires emit a large amount of carbon-containing smoke. These gases are released into the atmosphere and increase the earth's temperature resulting in global warming.

There are several causes of global warming, which have a negative effect on humans, plants and animals. These causes may be natural or might be the outcome of human activities. In order to curb the issues, it is very important to understand the negative impacts of global warming.

Gulafshan
II Year Student Teacher

CLIMATE CHANGE

The Burning Issue of Our Time*

Climate change is one of the most pressing issues of our time, with far-reaching consequences for our planet and its inhabitants. The scientific consensus is clear: human activities are causing the Earth's temperature to rise at an alarming rate, with devastating impacts on ecosystems, biodiversity, and human societies.

What is Climate Change?

Climate change refers to the long-term warming of the planet due to an increase in average global temperatures. This is primarily caused by human activities such as burning fossil fuels, deforestation, and pollution, which release

large amounts of greenhouse gases like carbon dioxide and methane into the atmosphere.

Impacts of Climate Change*

The impacts of climate change are widespread and varied, including:

- Rising global temperatures and heatwaves
- More frequent and intense natural disasters (floods, droughts, storms)
- Sea-level rise and coastal erosion

- Changes in precipitation patterns and water scarcity
- Loss of biodiversity and ecosystem disruption

The Current Scenario

The current situation is alarming. Global temperatures have risen by 1°C since the late 1800s, and the consequences are already visible. 2023 was the hottest year on record, with extreme weather events like heatwaves, droughts, and floods affecting millions of people worldwide. The Indian monsoon, which provides 70% of the country's rainfall, is becoming increasingly unpredictable, threatening food security and livelihoods.

A Call to Action

We must act now to mitigate the effects of climate change. Governments, businesses, and individuals must work together to reduce emissions, invest in sustainable technologies, and promote eco-friendly practices. This includes transitioning to renewable energy sources, increasing energy efficiency, and protecting natural habitats. We can make a difference by making conscious choices in our daily lives, such as reducing meat consumption, using public transport, and conserving water.

The Future We Want

A sustainable future is possible if we take immediate action. We can envision a world where cities are powered by 100% renewable energy, industries are carbon-neutral, and ecosystems are thriving. Let's work together to create a world that is equitable, resilient, and sustainable for all.

The time to act is now. Let's join hands to protect our planet and ensure a sustainable future!

Akshatha Balaganoor
II Year Student Teacher

ಪರಿಸರದ ಮಹತ್ವ

ಈ ಗ್ರಹದಲ್ಲಿ ನಮ್ಮ ಜೀವನದ ಅಸ್ತಿತ್ವ ಮತ್ತು ಸುಸ್ಥಿರತೆಯು ನಮ್ಮ ಪರಿಸರದಿಂದ ಮಾತ್ರ ಸಾಧ್ಯ. ಇದು ಮಾನವರು, ಸಸ್ಯಗಳು, ಪ್ರಾಣಿಗಳು, ಮಣ್ಣು, ನೀರು, ಗಾಳಿ ಇತ್ಯಾದಿಗಳನ್ನು ಒಳಗೊಂಡಂತೆ ನಮ್ಮ

ಸುತ್ತಮುತ್ತಲಿನ ಪ್ರತಿಯೊಂದು ಜೀವಂತ ಮತ್ತು ನಿರ್ಜೀವ ಘಟಕವನ್ನು ಒಳಗೊಂಡಿದೆ.

ಗಾಳಿ, ಆಹಾರ, ನೀರು ಮತ್ತು ಸೂರ್ಯನ ಕೆಳಗೆ ವಾಸಿಸುವ ಸ್ಥಳ ಸೇರಿದಂತೆ ನಾವು ಬದುಕಲು ಬೇಕಾದ ಎಲ್ಲವನ್ನೂ ನಮ್ಮ ಭೂಮಿ ನಮಗೆ ಒದಗಿಸುತ್ತದೆ. ಸೌರವ್ಯೂಹದಲ್ಲಿ ಇದು ನಮ್ಮ ಏಕೈಕ ಮನೆಯಾಗಿದೆ.

ನಮ್ಮ ಜೀವಂತ ನೆನಪುಗಳಲ್ಲಿ ಹಿಂದೆಂದಿಗಿಂತಲೂ ನಮ್ಮ ಪರಿಸರವನ್ನು ಉಳಿಸುವ ಮತ್ತು ರಕ್ಷಿಸುವ ತುರ್ತು ಅವಶ್ಯಕತೆಯಿದೆ. ನಮ್ಮ ಮಕ್ಕಳಿಗೆ ಪರಿಸರದ ಮಹತ್ವವನ್ನು ಕಲಿಸುವುದು ಬಹಳ ಮುಖ್ಯ, ಏಕೆಂದರೆ ಅವರು ನಮ್ಮ ಗ್ರಹದ ಭವಿಷ್ಯ.

ಪ್ರಕೃತಿಯು ನಮ್ಮ ಪರಿಸರ ವ್ಯವಸ್ಥೆಯನ್ನು ನಿಖರವಾಗಿ ವಿನ್ಯಾಸಗೊಳಿಸಿದೆ ಅದು ಆರೋಗ್ಯ, ಬದುಕುಳಿಯುವಿಕೆ ಮತ್ತು ಜೀವನದ ಗುಣಮಟ್ಟದಂತಹ ಅಗತ್ಯ ಸೇವೆಗಳನ್ನು ಒಂದು ಸ್ಥಳದಲ್ಲಿ ಜೀವಿಗಳ ಎಲ್ಲಾ ಸಮುದಾಯಗಳಿಗೆ ಖಚಿತಪಡಿಸುತ್ತದೆ. ಇದು ಜೈವಿಕ ಮತ್ತು ಅಜೀವಕ ಘಟಕಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.

ಬದುಕುಳಿಯುವಿಕೆ ಮತ್ತು ಪ್ರಸರಣವನ್ನು ಖಚಿತಪಡಿಸಿಕೊಳ್ಳಲು ಬದಲಾಗುತ್ತಿರುವ ಪರಿಸರಕ್ಕೆ ನಿರಂತರವಾಗಿ ಹೊಂದಿಕೊಳ್ಳುವ ವಿಲಕ್ಷಣ ಸಾಮರ್ಥ್ಯದೊಂದಿಗೆ ನಮ್ಮ ಸ್ವಭಾವವು ಜೀವನದ ಪ್ರತಿಯೊಂದು ರೂಪವನ್ನು ಉಡುಗೊರೆಯಾಗಿ ನೀಡಿದೆ.

ನಮ್ಮ ಭೂಮಿಯ ಮೇಲಿನ ಜೀವನವನ್ನು ಪೋಷಿಸಲು ಎಷ್ಟು ವಿಭಿನ್ನ ಘಟಕಗಳು ಪರಿಪೂರ್ಣ ಸಾಮರಸ್ಯದಿಂದ ಸಂವಹನ ನಡೆಸುತ್ತವೆ ಎಂಬುದು ನಮ್ಮ ಕಲ್ಪನೆಗೆ ಮೀರಿದೆ?

ನಮ್ಮ ಪರಿಸರವನ್ನು ಕಾಡುತ್ತಿರುವ ಆತಂಕಕಾರಿ ಸಮಸ್ಯೆಗಳು

ತ್ವರಿತ ಅಭಿವೃದ್ಧಿಯ ಅನ್ವೇಷಣೆಯಲ್ಲಿ ಮಾನವರು ಪರಿಸರ ಸಂಪನ್ಮೂಲಗಳ ಬುದ್ಧಿಹೀನ ಮತ್ತು ಬೇಜವಾಬ್ದಾರಿ ಶೋಷಣೆಗೆ ಕಾರಣರಾಗಿದ್ದಾರೆ. ಪರಿಸರ ಪ್ರಕ್ರಿಯೆಗಳಲ್ಲಿ ಮಾನವ ಹಸ್ತಕ್ಷೇಪಗಳು ಪರಿಸರದಲ್ಲಿ ಹಲವಾರು ಹಾನಿಕಾರಕ ಮತ್ತು ಬದಲಾಯಿಸಲಾಗದ ಬದಲಾವಣೆಗಳಿಗೆ ಕಾರಣವಾಗಿವೆ.

ಅಸಹಜ ತಾಪಮಾನ ಮತ್ತು ತಂಪಾಗಿಸುವ ಅವಧಿಗಳಿಂದ ಗುರುತಿಸಲ್ಪಟ್ಟಿರುವ ಜಗತ್ತಿನಾದ್ಯಂತ ಹವಾಮಾನದ ಮಾದರಿಗಳಲ್ಲಿ ಈ ಬದಲಾವಣೆಗಳು ಹೆಚ್ಚು ಸ್ಪಷ್ಟವಾಗಿ ಕಂಡುಬರುತ್ತವೆ. ಇದು ಚಂಡಮಾರುತಗಳು, ಪ್ರವಾಹಗಳು, ಭೂಕಂಪಗಳು, ಸುನಾಮಿ ಇತ್ಯಾದಿಗಳ ಆವರ್ತನಗಳನ್ನು ನಿರಂತರವಾಗಿ ಹೆಚ್ಚಿಸುತ್ತಿದೆ.

ಜಾಗತಿಕ ತಾಪಮಾನ

ಇದು ಈಗ ಹಲವಾರು ವರ್ಷಗಳಿಂದ ಬಿಸಿಯಾದ ಚರ್ಚೆಯ ಪರಿಸರ ಸಮಸ್ಯೆಯಾಗಿದೆ. ಕೈಗಾರಿಕೆಗಳು ಮತ್ತು ವಾಹನಗಳಿಂದ ಹೊರಸೂಸುವಿಕೆ, ಪಳೆಯುಳಿಕೆ ಇಂಧನಗಳ ದಹನ, ಮತ್ತು ಕ್ಲೋರೊಫ್ಲೋರೋಕಾರ್ಬನ್ ವಾತಾವರಣದಲ್ಲಿ ಹಸಿರುಮನೆ ಅನಿಲಗಳ ಎತ್ತರದ ಮಟ್ಟಕ್ಕೆ ಭಾರಿ ಕೊಡುಗೆ ನೀಡಿದೆ. ಇದು ಪರಿಸರದ ಮಾದರಿಗಳ ಮೇಲೆ ವಿನಾಶಕಾರಿ ಪರಿಣಾಮಗಳೊಂದಿಗೆ ಭೂಮಿಯ ತಾಪಮಾನದಲ್ಲಿ ಹೆಚ್ಚಳಕ್ಕೆ (ಜಾಗತಿಕ ತಾಪಮಾನ ಎಂದು ಕರೆಯಲಾಗುತ್ತದೆ) ಕಾರಣವಾಗಿದೆ.

ನಮ್ಮ ಜೀವನದಲ್ಲಿ ನಾವು ಹೊಂದಿರುವ ಎಲ್ಲಾ ಸರಕು ಮತ್ತು ಸೇವೆಗಳನ್ನು ನೇರವಾಗಿ ಅಥವಾ ಪರೋಕ್ಷವಾಗಿ ಒದಗಿಸುವ ಮೂಲಕ ನಮ್ಮ ಭೂಮಿ ನಮಗೆ ಪೋಷಣೆ ನೀಡುತ್ತದೆ. ನಮ್ಮ ವಾತಾವರಣವನ್ನು ಮಾಲಿನ್ಯ ಮುಕ್ತವಾಗಿಡುವುದು, ನಮ್ಮ ಸುತ್ತಮುತ್ತಲಿನ ಸ್ವಚ್ಛತೆ ಮತ್ತು ನೈರ್ಮಲ್ಯವನ್ನು ಕಾಪಾಡಿಕೊಳ್ಳುವುದು

ಮತ್ತು ಆರೋಗ್ಯಕರ ಪರಿಸರ ವ್ಯವಸ್ಥೆಗಾಗಿ ಆತ್ಮಸಾಕ್ಷಿಯಾಗಿ ಕೆಲಸ ಮಾಡುವ ಮೂಲಕ ನಮ್ಮ ಪರಿಸರವನ್ನು ಸಂರಕ್ಷಿಸುವುದು ನಮ್ಮ ಅತ್ಯಂತ ಜವಾಬ್ದಾರಿಯಾಗಿದೆ.

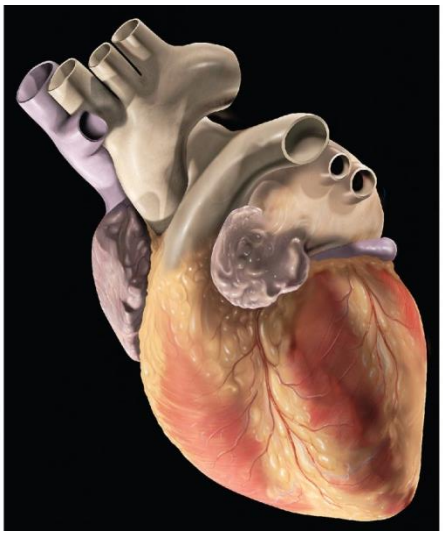
ಶ್ರೀನಿಧಿ ಆರ್ ಚೌಧ್ರಿ
ಪ್ರಥಮ ವರ್ಷದ ಪ್ರಶಿಕ್ಷಣಾರ್ಥಿ

ಮಾನವತೆ – ಮಾನವನ ಹೃದಯದ ಧ್ವನಿ

ಮಾನವತೆ ಎಂದರೆ ಮನುಷ್ಯನ ಅತ್ಯುನ್ನತ ಗುಣಗಳಲ್ಲಿ ಒಂದು. ಇದು ಕೇವಲ ಸಹಾನುಭೂತಿ ಅಥವಾ ಕರುಣೆ ಮಾತ್ರವಲ್ಲ, ಬದಲಾಗಿ ಇತರರ ನೋವನ್ನು ಅರ್ಥಮಾಡಿಕೊಳ್ಳುವ, ಸಹಾಯ ಮಾಡುವ ಮತ್ತು ಪ್ರೀತಿ ಹಂಚುವ ಮನಸ್ಥಿತಿ. ಮಾನವತೆ ಮಾನವನ ಹೃದಯದ ನಿಜವಾದ ಧ್ವನಿ. ಇದು ಧರ್ಮ, ಜಾತಿ, ಭಾಷೆ, ವರ್ಣ, ಸಂಪ್ರದಾಯ ಇತ್ಯಾದಿ ಬೇಧಗಳನ್ನು ಮೀರಿ ಎಲ್ಲರನ್ನು ಒಗ್ಗೂಡಿಸುತ್ತದೆ.

ಪ್ರತಿ ಮಾನವನೊಳಗಿರುವ ಮೌಲ್ಯಗಳು, ಸೌಜನ್ಯ, ಕರುಣೆ ಮತ್ತು ಸಹಾನುಭೂತಿ ಮಾನವತೆ. ಮಾನವತೆಯು ನಮ್ಮೊಳಗೆ ಜೀವಂತವಾಗಿರುವಾಗ ಮಾತ್ರ ನಾವು ನಿಜವಾದ ಮನುಷ್ಯರಾಗಿರಬಹುದು. ತಂತ್ರಜ್ಞಾನ, ವಿಜ್ಞಾನ ಮತ್ತು ಆರ್ಥಿಕ ಅಭಿವೃದ್ಧಿಯ ಜೊತೆಗೆ ಮಾನವತೆಯೂ ಬೆಳೆಯಬೇಕು. ಮಾನವತೆಯಿಲ್ಲದ ಪ್ರಗತಿ ಅರ್ಥಹೀನ.

ಮಾನವತೆಯು ಸಣ್ಣ ಸಣ್ಣ ಕಾರ್ಯಗಳಿಂದ ಆರಂಭವಾಗುತ್ತದೆ ಹಸಿದವನಿಗೆ ಆಹಾರ ನೀಡುವುದು, ದುಃಖದಲ್ಲಿರುವವನಿಗೆ ಸಾಂತ್ವನ ಹೇಳುವುದು, ಪ್ರಾಣಿಗಳಿಗೆ ಕರುಣೆ ತೋರಿಸುವುದು, ಪರಿಸರವನ್ನು ರಕ್ಷಿಸುವುದು ಇವುಗಳೆಲ್ಲ ಮಾನವತೆಯ ಉದಾಹರಣೆಗಳು. ಇಂತಹ ಕೃತ್ಯಗಳು ಸಮಾಜದಲ್ಲಿ ಪ್ರೀತಿ, ಶಾಂತಿ ಮತ್ತು ಸೌಹಾರ್ದತೆಯನ್ನು ಬೆಳೆಸುತ್ತವೆ.



ಇಂದಿನ ಯುಗದಲ್ಲಿ ಮಾನವತೆ ನಿಧಾನವಾಗಿ ಮರೆಮಾಡಲ್ಪಡುತ್ತಿದೆ. ಸ್ವಾರ್ಥ, ಸ್ಪರ್ಧೆ, ಅಸೂಯೆ ಮತ್ತು ದ್ವೇಷದನಡುವೆ ಪ್ರೀತಿ ಹಾಗೂ ಕರುಣೆಯಧ್ವನಿ ನಿಧಾನವಾಗಿ ಮಾಯವಾಗುತ್ತಿದೆ. ಈ ಸಂದರ್ಭದಲ್ಲಿ ಪ್ರತಿಯೊಬ್ಬರೂ ತಮ್ಮೊಳಗಿನ ಮಾನವತೆಯನ್ನು ಪುನರುಜ್ಜೀವನಗೊಳಿಸಬೇಕು. ಮಕ್ಕಳಲ್ಲಿ ಮಾನವೀಯ ಮೌಲ್ಯಗಳನ್ನು ಬೆಳೆಸುವುದು ಶಿಕ್ಷಕರ ಮತ್ತು ಪೋಷಕರ ಮುಖ್ಯ ಕರ್ತವ್ಯವಾಗಿದೆ.

ಮಾನವತೆ ಎಂದರೆ ಕೇವಲ ಇತರರಿಗಾಗಿ ಬದುಕುವುದು ಅಲ್ಲ; ಅದು ಎಲ್ಲ ಜೀವಿಗಳ ಮೇಲಿನ ಗೌರವ ಮತ್ತು ಸೌಹಾರ್ದತೆಯ ಅಭಿವ್ಯಕ್ತಿ. ಮಾನವತೆ ಇಲ್ಲದೆ ಮನುಷ್ಯತ್ವವೂ ಅಪೂರ್ಣ.

ಅಂತಿಮವಾಗಿ, ಮಾನವತೆ ಮಾನವನ ಹೃದಯದ ನಿಜವಾದ ಧ್ವನಿ. ಈ ಧ್ವನಿಯನ್ನು ಕೇಳಿ ನಡೆವವರು ನಿಜವಾದ ಅರ್ಥದಲ್ಲಿ "ಮನುಷ್ಯರು."

ಕಾವ್ಯ ಸುಣಗಾರ
ಪ್ರಥಮ ವರ್ಷದ ಪ್ರತಿಕ್ಷಣಾರ್ಥಿ

ಕೆಲವು ಅದ್ಭುತ ವಿಜ್ಞಾನ ಸಂಗತಿಗಳು

ಭೂಮಿಯ ಮೇಲಿನ ಆಮ್ಲಜನಕದ ಬಹುಪಾಲು ಸಾಗರಗಳು ಉತ್ಪಾದಿಸುತ್ತವೆ.

ರಾಷ್ಟ್ರೀಯ ಸಾಗರ ಸೇವೆಯ ಪ್ರಕಾರ, ಆ ಎಲ್ಲಾ ತಾಜಾ ಗಾಳಿಗಾಗಿ ನಾವು ಸಸ್ಯ ಆಧಾರಿತ ಸಮುದ್ರ ಜೀವಿಗಳಿಗೆ ಧನ್ಯವಾದ ಹೇಳಬಹುದು. ಪ್ರಪಂಚದ ಅರ್ಧಕ್ಕಿಂತ ಹೆಚ್ಚು ಆಮ್ಲಜನಕವನ್ನು ಪ್ಲ್ಯಾಂಕ್ಟನ್, ಕಡಲಕಳೆ ಮತ್ತು ಇತರ ದ್ಯುತಿಸಂಶ್ಲೇಷಕಗಳಿಂದ ಉತ್ಪಾದಿಸಲಾಗುತ್ತದೆ.

ಮಣ್ಣು ಜೀವದಿಂದ ತುಂಬಿದೆ: ಒಂದು ಟೀ ಚಮಚ ಮಣ್ಣಿನಲ್ಲಿ ಭೂಮಿಯ ಮೇಲಿನ ಜನರಿಗಿಂತ ಹೆಚ್ಚಿನ ಸೂಕ್ಷ್ಮಜೀವಿಗಳಿವೆ. "ಲಕ್ಷಾಂತರ ಪ್ರಭೇದಗಳು ಮತ್ತು ಶತಕೋಟಿ ಜೀವಿಗಳು ಬ್ಯಾಕ್ಟೀರಿಯಾ, ಪಾಚಿ, ಸೂಕ್ಷ್ಮ ಕೀಟಗಳು, ಎರೆಹುಳುಗಳು, ಜೀರುಂಡೆಗಳು, ಇರುವೆಗಳು, ಹುಳಗಳು, ಶಿಲೀಂಧ್ರಗಳು ಮತ್ತು ಇನ್ನೂ ಹೆಚ್ಚಿನವು ಗ್ರಹದಲ್ಲಿ ಎಲ್ಲಿಯಾದರೂ ಜೀವರಾಶಿಯ ಅತ್ಯಧಿಕ ಸಾಂದ್ರತೆಯನ್ನು ಪ್ರತಿನಿಧಿಸುತ್ತವೆ" ಎಂದು ವರದಿ ಹೇಳುತ್ತದೆ.

ಬಾಳೆಹಣ್ಣುಗಳು ವಿಕಿರಣಶೀಲವಾಗಿವೆ: ಬಾಳೆಹಣ್ಣಿನಲ್ಲಿ ಪೊಟ್ಯಾಸಿಯಮ್ ಇರುತ್ತದೆ, ಮತ್ತು ಪೊಟ್ಯಾಸಿಯಮ್ ಕೊಳೆಯುವುದರಿಂದ, ಹಳದಿ ಹಣ್ಣು ಸ್ವಲ್ಪ ವಿಕಿರಣಶೀಲವಾಗುತ್ತದೆ.

ನೀರು ಒಂದೇ ಸಮಯದಲ್ಲಿ ಮೂರು ಸ್ಥಿತಿಗಳಲ್ಲಿ ಅಸ್ತಿತ್ವದಲ್ಲಿರಬಹುದು: ಇದನ್ನು ಟ್ರಿಪಲ್ ಬಾಯ್ಂಟ್ ಅಥವಾ ಟ್ರಿಪಲ್ ಪಾಯಿಂಟ್ ಎಂದು ಕರೆಯಲಾಗುತ್ತದೆ ಮತ್ತು ಇದು ವಸ್ತುಗಳು ಒಂದೇ ಸಮಯದಲ್ಲಿ ಅನಿಲ, ದ್ರವ ಮತ್ತು ಘನವಾಗಿ ಇರುವ ತಾಪಮಾನ ಮತ್ತು ಒತ್ತಡವಾಗಿದೆ.

ಹೀಲಿಯಂ ಗುರುತ್ವಾಕರ್ಷಣೆಯ ವಿರುದ್ಧ ಕೆಲಸ ಮಾಡುವ ಸಾಮರ್ಥ್ಯವನ್ನು ಹೊಂದಿದೆ: ಹೀಲಿಯಂ ಅನ್ನು ಸಂಪೂರ್ಣ ಶೂನ್ಯ ತಾಪಮಾನಕ್ಕೆ (−460 ಡಿಗ್ರಿ ಫ್ಯಾರನ್ಹೀಟ್ ಅಥವಾ −273 ಡಿಗ್ರಿ ಸೆಲ್ಸಿಯಸ್) ತಂಪಾಗಿಸಿದಾಗ, ಅದು ಸೂಪರ್ ಫ್ಲೂಯಿಡ್ ಆಗುತ್ತದೆ, ಅಂದರೆ ಅದು ಘರ್ಷಣೆಯಿಲ್ಲದೆ ಹರಿಯಬಹುದು.

ಮಾನವರು ಇತರ ಜಾತಿಗಳಿಂದ ಜೀನ್ಗಳನ್ನು ಆನುವಂಶಿಕವಾಗಿ ಪಡೆದಿದ್ದಾರೆ: ನಮ್ಮ ಜೀನೋಮ್ ಬ್ಯಾಕ್ಟೀರಿಯಾ, ಶಿಲೀಂಧ್ರಗಳು, ಇತರ ಏಕಕೋಶೀಯ ಜೀವಿಗಳು ಮತ್ತು ವೈರಸ್ಗಳಿಂದ ರೂಪಾಂತರಗೊಂಡ 145 ಜೀನ್ಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.

ಮಾನವ ದೇಹ

- ವಯಸ್ಕ ಮಾನವ ದೇಹವು 206 ಮೂಳೆಗಳನ್ನು ಹೊಂದಿದ್ದರೆ, ಬೆಳೆಯುತ್ತಿರುವ ಮಗುವಿನ ದೇಹವು 300 ಮೂಳೆಗಳನ್ನು ಹೊಂದಿರುತ್ತದೆ.
- ಸ್ಟೇಪ್ಸ್ ಅಥವಾ ಸ್ಟಿರಪ್ ಮೂಳೆಯು ಮಾನವ ದೇಹದ ಅತ್ಯಂತ ಚಿಕ್ಕ ಮೂಳೆಯಾಗಿದ್ದು, ಮಧ್ಯ

ಕಿವಿಯಲ್ಲಿದೆ. ಇದು ಸುಮಾರು 11 ಇಂಚು ಉದ್ದವಿರುತ್ತದೆ.

- ಮೋಟಾರ್ ನ್ಯೂರಾನ್‌ಗಳು ಮಾನವ ದೇಹದಲ್ಲಿನ ಅತ್ಯಂತ ಉದ್ದವಾದ ಜೀವಕೋಶಗಳಾಗಿವೆ. ಅವು 4.5 ಅಡಿ ಉದ್ದವನ್ನು ತಲುಪಬಹುದು ಮತ್ತು ಕೆಳಗಿನ ಬೆನ್ನುಹುರಿಯಿಂದ ಹೆಬ್ಬೆರಳಿನವರೆಗೆ ವಿಸ್ತರಿಸಬಹುದು.

ಪ್ರಾಣಿಗಳು ಮತ್ತು ಕೀಟಗಳು

- ದೈತ್ಯ ಸಲಾಮಾಂಡರ್ ವಿಶ್ವದ ಅತಿದೊಡ್ಡ ಉಭಯಚರ. ಇದು 5 ಅಡಿ ಉದ್ದ ಬೆಳೆಯಬಹುದು.
- ಚಿಗಟಗಳು ತಮ್ಮ ಎತ್ತರದ 130 ಪಟ್ಟು ಜಿಗಿಯಬಲ್ಲವು. ಮಾನವ ಪರಿಭಾಷೆಯಲ್ಲಿ, ಅದು 6 ಅಡಿ ಎತ್ತರದ ವ್ಯಕ್ತಿಯು 780 ಅಡಿ ಗಾಳಿಯಲ್ಲಿ ಜಿಗಿಯುವುದಕ್ಕೆ ಸಮ.
- ಹಾವುಗಳು ನಿಜವಾದ ಮಾಂಸಾಹಾರಿಗಳು ಏಕೆಂದರೆ ಅವು ಇತರ ಪ್ರಾಣಿಗಳನ್ನು ಮಾತ್ರ ತಿನ್ನುತ್ತವೆ ಮತ್ತು ಸಸ್ಯಗಳನ್ನು ತಿನ್ನುವುದಿಲ್ಲ.

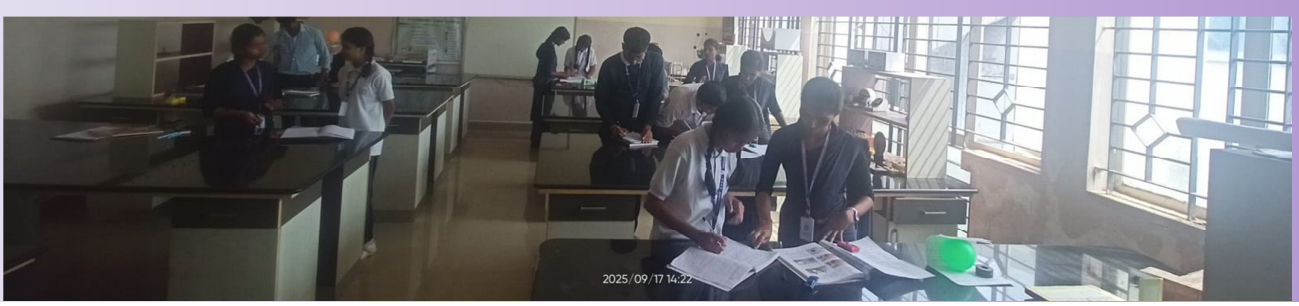
ಧ್ವನಿ

- ಶಬ್ದವು ಗಾಳಿಯಲ್ಲಿ ಚಲಿಸುವುದಕ್ಕಿಂತ ನೀರಿನಲ್ಲಿ ನಾಲ್ಕು ಪಟ್ಟು ವೇಗವಾಗಿ ಚಲಿಸುತ್ತದೆ.
- ಬೆಕ್ಕುಗಳು 100 ಕ್ಕೂ ಹೆಚ್ಚು ಗಾಯನ ಶಬ್ದಗಳನ್ನು ಹೊಂದಿದ್ದರೆ, ನಾಯಿಗಳು ಕೇವಲ ಹತ್ತು ಮಾತ್ರ ಹೊಂದಿರುತ್ತವೆ.

ಕಲ್ಪನಾ ಎಸ್
ದ್ವಿತೀಯ ವರ್ಷದ ಪ್ರಶಿಕ್ಷಣಾರ್ಥಿ


KUMARAVEL VIDYALAYA
MISSION


KUMARAVEL VIDYALAYA
VISION
MISSION
VALUES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ಕುಮುದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯದಲ್ಲಿ ರಾಷ್ಟ್ರೀಯ ವಿಜ್ಞಾನ ದಿನಾಚರಣೆ

–ಶಿವಮೊಗ್ಗ ಸಂಚಲನ

ಶಿಕಾರಿಪುರ: ಐಕ್ಯೂಎಸಿ ಹಾಗೂ ವಿಜ್ಞಾನ ಸಂಘದ ಸಂಯುಕ್ತ ಆಶ್ರಯದಲ್ಲಿ ಇಂದು "ರಾಷ್ಟ್ರೀಯ ವಿಜ್ಞಾನ ದಿನಾಚರಣೆ" ಯನ್ನು ಕುಮದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯದಲ್ಲಿ ಆಚರಿಸಲಾಯಿತು.

ಕಾರ್ಯಕ್ರಮದ ಅಧ್ಯಕ್ಷತೆಯನ್ನು ವಹಿಸಿಕೊಂಡು ಮಾತನಾಡುತ್ತಾ ಡಾ. ಶಿವಕುಮಾರ್ ಜಿ ಎಸ್., ಪ್ರಾಚಾರ್ಯರು, ಕುಮದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯ, ಶಿಕಾರಿಪುರ ಹಾಗೂ ಆಡಳಿತ ಮಂಡಳಿ ಪ್ರತಿನಿಧಿ ಸ್ವಾಮಿ ವಿವೇಕಾನಂದ ವಿದ್ಯಾಸಂಸ್ಥೆ ಕಾರ್ಯಕ್ರಮವನ್ನು ಉದ್ದೇಶಿಸಿ ಮಾತನಾಡುತ್ತಾ "ಯುವಜನರಲ್ಲಿ ವೈಜ್ಞಾನಿಕ ಮನೋಭಾವವನ್ನು ಮೂಡಿಸಬೇಕು ಎಂದರು.

ಬದಲಾಗುತ್ತಿರುವ ಜಗತ್ತಿನಲ್ಲಿ ಉತ್ತಮ ಆಲೋಚನೆ, ಚಿಂತನೆಗಳಿಂದ ಮಾತ್ರ ವೈಜ್ಞಾನಿಕ ಸಂಶೋಧನೆಗಳು ಮೂಡಲು ಸಾಧ್ಯ. ರಾಷ್ಟ್ರೀಯ ವಿಜ್ಞಾನ ದಿನದ 2025 ರ ವಿಷಯವು "ವಿಕಸಿತ ಭಾರತ್‌ಗಾಗಿ ವಿಜ್ಞಾನ ಮತ್ತು ನಾವೀನ್ಯತೆಯಲ್ಲಿ ಜಾಗತಿಕ ನಾಯಕತ್ವಕ್ಕಾಗಿ ಭಾರತೀಯ ಯುವಕರನ್ನು ಸಬಲೀಕರಣಗೊಳಿಸುವುದು." ಈ ದಿನವು ವಿಜ್ಞಾನ ಮತ್ತು ತಂತ್ರಜ್ಞಾನಕ್ಕೆ ಸಿವಿ ರಾಮನ್ ಅವರ ಕೊಡುಗೆಗಳ ಆಚರಣೆ ಮತ್ತು ಗುರುತಿಸುವಿಕೆಯಾಗಿದೆ. ಪ್ರತಿ ವರ್ಷ, ಪ್ರಸಿದ್ಧ ಭೌತ ಶಾಸ್ತ್ರಜ್ಞ ಸರ್ ಚಂದ್ರಶೇಖರ ವೆಂಕಟ ರಾಮನ್ (ಸಿವಿ ರಾಮನ್ ಎಂದು ಕರೆಯಲ್ಪಡುವ) ರಾಮನ್ ಪರಿಣಾಮದ ಆವಿಷ್ಕಾರದ ನೆನಪಿಗಾಗಿ ಫೆಬ್ರವರಿ 28 ರಂದು ಭಾರತವು ರಾಷ್ಟ್ರೀಯ ವಿಜ್ಞಾನ ದಿನವನ್ನು ಆಚರಿಸುತ್ತದೆ.

ಜಾಗತಿಕವಾಗಿ ಶಿಕ್ಷಣ ಮತ್ತು ತಂತ್ರಜ್ಞಾನದ ಬದಲಾಗುತ್ತಿರುವ ಸಂದರ್ಭದಲ್ಲಿ ಯುವಕರು ಕೃತಕ ಬುದ್ಧಿಶಕ್ತಿ, ವಿರೋನಾಟಕ್ಸ್ ಮುಂತಾದ ತೈಕ್ಷಣಿಕ ಚಿಂತನೆಗಳನ್ನು ಪ್ರತಿದಿನವೂ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ತಿಳಿಸಿದಾಗ ಮಾತ್ರ ವಿದ್ಯಾರ್ಥಿಗಳ ಉತ್ಪಾದಕತ್ವವನ್ನು ಹೆಚ್ಚಿಸಲು ಸಾಧ್ಯ ಎಂದು ಅಭಿಪ್ರಾಯಪಟ್ಟರು.

ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ವಿಜ್ಞಾನ ದಿನಾಚರಣೆಯಲ್ಲಿ ಎಲ್ಲರಿಗೂ ಪ್ರಮಾಣ ಪತ್ರವನ್ನು ಬೋಧಿಸಿದರು. ಅಲ್ಲದೇ, ಇದೇ ಸಂದರ್ಭದಲ್ಲಿ ಸಿವಿ ರಾಮನ್ ಕುರಿತ ಸಾಕ್ಷ್ಯ ಚಿತ್ರವನ್ನು ಪ್ರದರ್ಶನವನ್ನು ಅರ್ಪಿತಾ ಬಿ ನೆರವೇರಿಸಿಕೊಟ್ಟರು, ನಂತರ ವಿದ್ಯಾರ್ಥಿಗಳಿಗಾಗಿ ರಸಪ್ರಶ್ನೆಗಳನ್ನು ಏರ್ಪಡಿಸಿ ವಿಜೇತರಿಗೆ ಬಹುಮಾನವನ್ನು ನೀಡಲಾಯಿತು.

ಪ್ರಾರ್ಥನೆಯನ್ನು ಶ್ರುತಿ ಮತ್ತು ತಂಡದವರು ಪ್ರಶಿಕ್ಷಣಾರ್ಥಿಗಳು, ಸ್ವಾಗತವನ್ನು ಸಿದ್ಧರಾಜು ಪೂಜಾರ್ ಪ್ರಶಿಕ್ಷಣಾರ್ಥಿ, ವಂದನಾರ್ಪಣೆಯನ್ನು ಅಮಿತ್ ಸಿ ಎಲ್ ಮಾಡಿದರೆ ಲಾವಣ್ಯ ನಾಯ್ಕ್ ಕಾರ್ಯಕ್ರಮವನ್ನು ನಿರೂಪಿಸಿದರು

ಪರಿಸರ ಜಾಗೃತಿ ಅಭಿಯಾನ

ಶಿಕಾರಿಪುರ : ಕುಮದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯ, ಶಿಕಾರಿಪುರದ ಆಡಿಯಲ್ಲಿ ವಿಜ್ಞಾನ ಸಂಘ ಹಾಗೂ ಎನ್ ಎಸ್ ಎಸ್ ಸಹಯೋಗದಲ್ಲಿ ಇಂದು ವಿಶ್ವ ಪರಿಸರ ದಿನದ ಅಂಗವಾಗಿ ನಗರದ ಪ್ರಮುಖ ಭಾಗದಲ್ಲಿ ಪರಿಸರ ಜಾಗೃತಿ ಅಭಿಯಾನವನ್ನು ಏರ್ಪಡಿಸಲಾಯಿತು.

ಕಾರ್ಯಕ್ರಮದ ಮುಖ್ಯ ಅತಿಥಿಗಳಾದ ಡಾ. ಶಿವಕುಮಾರ್ ಜಿ ಎಸ್., ಪ್ರಾಚಾರ್ಯರು, ಕುಮದ್ವತಿ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯ, ಶಿಕಾರಿಪುರ ಮತ್ತು ಆಡಳಿತ ಪ್ರತಿನಿಧಿಗಳು, ಸ್ವಾಮಿ ವಿವೇಕಾನಂದ ವಿದ್ಯಾಸಂಸ್ಥೆ, ಶಿಕಾರಿಪುರ ಇವರು ಮಾತನಾಡುತ್ತಾ ಬದಲಾಗಿ, ಉತ್ತಮ ಪರಿಸರವನ್ನು ಕಾಪಾಡುವುದೆಂದರೆ ಪ್ಲಾಸ್ಟಿಕ್ ಅನ್ನು ಬಳಸಬಹುದಾದ ಸ್ಥಳದಲ್ಲಿ ಅದನ್ನು ಬದಲಾಯಿಸುವುದು ಅಥವಾ ತೆಗೆದುಹಾಕುವುದು ಎಂದರ್ಥ. ಮತ್ತು ಮಾರುಕಟ್ಟೆಯಲ್ಲಿ ನೈರ್ಮಲ್ಯ, ಸಂರಕ್ಷಣೆ ಮತ್ತು ಸಮಗ್ರತೆಯನ್ನು ಖಚಿತಪಡಿಸುವ ಮರುಬಳಕೆ ಮಾಡಬಹುದಾದ ಪರ್ಯಾಯಗಳಿವೆ. ಪ್ಲಾಸ್ಟಿಕ್ ಮುಕ್ತ ಪರಿಸರವನ್ನು ಏಕ-ಬಳಕೆಯ ಪ್ಲಾಸ್ಟಿಕ್‌ಗಳ ಬಳಕೆಯನ್ನು ಕಡಿಮೆ ಮಾಡುವುದು ಮತ್ತು ಮರುಬಳಕೆ ಮಾಡಬಹುದಾದ, ಸುಸ್ಥಿರ ಪರ್ಯಾಯಗಳನ್ನು ಉತ್ತೇಜಿಸುವುದು. ಸ್ವಚ್ಛ ಗೃಹ ಮತ್ತು ಆರೋಗ್ಯಕರ ಪರಿಸರ ವ್ಯವಸ್ಥೆಗೆ ಕೊಡುಗೆ ನೀಡುವುದು ಇದರ ಗುರಿಯಾಗಿದೆ. ಇದು ಮರುಬಳಕೆ ಮಾಡಬಹುದಾದ ನೀರಿನ ಬಾಟಲಿಗಳು ಮತ್ತು ಶಾಪಿಂಗ್ ಬ್ಯಾಗ್‌ಗಳನ್ನು ಬಳಸುವುದು ಮತ್ತು ಕನಿಷ್ಠ ಪ್ಯಾಕೇಜಿಂಗ್ ಹೊಂದಿರುವ ಉತ್ಪನ್ನಗಳನ್ನು ಆಯ್ಕೆ ಮಾಡುವಂತಹ ಪ್ರಜ್ಞಾಪೂರ್ವಕ ಆಯ್ಕೆಗಳನ್ನು ಒಳಗೊಂಡಿರುತ್ತದೆ.

ಇದಕ್ಕೆ ಪೂರಕವಾಗುವಂತೆ ನಮ್ಮ ವಿದ್ಯಾ ಸಂಸ್ಥೆಯ ಪ್ರಶಿಕ್ಷಣಾರ್ಥಿಗಳೇ ತಯಾರಿಸಿದ ಬಟ್ಟೆಯಿಂದ ತಯಾರಿಸಿದ ಜೇಲವನ್ನು ನಗರದ ಬಸ್ಟ್ಯಾಂಡ್ ಹತ್ತಿರ ಜನರುಗಳಿಗೆ ವಿತರಣೆ ಮಾಡುವುದರ ಮೂಲಕ ಜನರಿಗೆ ಪ್ಲಾಸ್ಟಿಕ್ ಮುಕ್ತ ಪರಿಸರದ ಬಗೆಗೆ ಜಾಗೃತಿ ಮೂಡಿಸಲಾಯಿತು.

ಈ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಕಾಲೇಜಿನ ಬೋಧಕ ಮತ್ತು ಬೋಧಕೇತರ ವರ್ಗದವರು ಹಾಗೂ ಪ್ರಶಿಕ್ಷಣಾರ್ಥಿಗಳಿಂದ ಕೂಡಿ ಉತ್ತಮ ಜಾಗೃತಿ ಕಾರ್ಯಕ್ರಮವನ್ನು ಏರ್ಪಡಿಸಿರುವುದು ಅರ್ಥ ಪೂರ್ಣವಾಗಿತ್ತು.

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