

GURUKUL SCHOOL DHAMNOD



Glimpses-2

Session 2024-25
Second Edition



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gurukulschool.org

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From the Desk of Principal

Learning with conscience is our motto at Gurukul.

It is my privilege to present you the second issue of “GLIMPSES”.



Our mind is like a parachute, it works best when open hence it showcases creativity, literary skills, dreams & talent of hope, optimism with openness. As we move forward & try to find our way in the new emerging world, with the turn of the calendar, the turn of students is enterprising & which transcends them to see the world with a higher perspective. Steadfast to balance academic & co-curricular excellence we move ahead crossing every milestone on the path of meaningful learning.

Our E-magazine “GLIMPSES-2” showcases events moments learning & progress at Gurukul. The budding talent gets an opportunity to express through Glimpses, strengthens values in life along with academic & literary excellence. Thus, nurturing years of learning experience in the child is reflected in every endeavour of teacher & the taught.

The enthusiastic efforts are sufficient to hold interest to read in the realm of imagination & experience to create a world of aesthetics in words & pictures. The magazine represents our spirit to excel, develop and grow in vibrant atmosphere of Gurukul. The world today is growing & moving at an unprecedented speed with new challenges coming its way, every second of the day therefore educators need to pause, think & reflection on the entire system of education.

This issue of Glimpses reflects a spectrum of our students diverse interests which have blossomed in many hues. As you flip through Glimpses the creativity of our budding writers become evident.

I congratulate Editorial Board for their efforts in giving shape to ‘GLIMPSES-2’.

I wish you a happy reading.

Editorial Message - Glimpses Magazine

Dear Readers,

Expressing thoughts through the presentation of purpose-driven ideas, one's expressions strive for contentment, joy and pride in achieving meaningful goals. It serves as an integral part of every human activity, essential for progress and the inevitable enhancement of existence. The medium of expression can be summarized as any action taken to convey a message from one being to another.

Harmony and coexistence form the fundamental basis of our society, unimaginable without dialogue and expression. Without dialogue or expression, neither progress can be made, nor can one become familiar with oneself. Consequently, an existence devoid of expression proves futile.

GLIMPSES-2 is presenting a collection of expressions to its readers. Through various styles, students have showcased their positive sentiments towards the significant aspects of our society, country, and the world. Whether through poems expressing positive emotions or stories portraying the common man's feelings near a world war, students have attempted to reveal expectations. Through articles, students have elaborated on their thoughts, providing assurance for the alertness of future generations. This magazine becomes a medium through which our aspiring youth can gain acceptance for their innovative expressions, feel connected to society, and experience satisfaction and pride in their involvement and responsibility.

As you begin reading this, I want to express gratitude to all those who have directly or indirectly contributed to bringing GLIMPSES-2 to you. I request all readers to share their valuable suggestions after reading the magazine, so that this series can be advanced without hindrance. Encourage your children to be inspired by self-study, contemplation, and expression, which are essential pillars for a bright future for all.

Wishing you all the best.

Thank you

Deependra Singh Chouhan

Editorial Board-
1. Mukesh Pal
2. Rani Pandit
3. Bhawna Laad
4. Aparna Shrivastava

From Teacher's Desk**समय****-अपर्णा श्रीवास्तव TGT**

यह समय जो जा रहा है,
हर पल ही जा रहा है।
तुम रोक नहीं सकते,
तुम रुक नहीं सकते।
तुम चाहकर भी दिशा इसकी
मोड़ नहीं सकते।
तो क्या है हाथ में तेरे?
ये जान के तू बढ़ जरा,
तू बढ़ जरा, न थम जरा।
तू स्वर्ण है, तू तप जरा।
तू सत्य के प्रहार को सह जरा।
तू कंटकों की राह पर चल जरा।
तू राह की चुनौतियों से लड़ जरा।
तू बंधनों को तोड़ दे राहों को तू मोड़ दे।
कंटकों को फूल कर।
सत्य को तू जीतकर,
तू बढ़ जरा न थम जरा।
तो जीत की न आस कर,
न हार का तू गम मना।
तू जिंदगी की राह पर।
बस चल जरा, तू चल जरा।
तू बढ़ जरा, न थम जरा।

कार्य की अधिकता

-विपुल कुमार गावशिन्दे TGT

कार्य की अधिकता के नाम पर अनेक लोगों के अपने-अपने विचार होते हैं। कुछ लोग कार्य की अधिकता के पीछे काम से बचने का प्रयास करते हैं। कार्य की अधिकता कुछ नहीं है बस समय का समायोजन है जो सही तरीके से नहीं किया गया। यदि व्यक्ति समय का सदुपयोग करे तो कार्य समयपर पूर्ण किया जा सकता है। साथ ही कार्य की अधिकता का अनुभव नहीं होगा। किस कार्य को पहले करना है और किस कार्य को बाद में करना है यह निश्चय नहीं होने से भी कार्य की अधिकता का एहसास होता है। कार्य की प्राथमिकता को भी तय करना परमावश्यक है। कार्य करने के मन और मस्तिष्क को काम लगाना होता है। यदि आपका विचलित है तो इसका सीधा प्रभाव आपके कार्य की पूर्णता पर होता है। इसलिए मन और मस्तिष्क का सही कार्य करना आवश्यक है। अब इसके बाद आती है रूचि, कार्य में रूचि का होना आवश्यक है। जिस कार्य में जितनी रूचि होगी उतना वह कार्य जल्दी और अच्छे से पूर्ण हो पाएगा। इसलिए महापुरुष हमेशा कहते थे कि कार्य में मन लगाव। काम रूचिकर हो या नीरस इसमें मजबूरी का भी एक महत्वपूर्ण स्थान है। गैर शासकीय संस्थानों में इसे आसानी देखा जा सकता है। शायद लोग इसीलिए ऐसा कहते हैं कि 'मजबूरी का नाम महात्मा गाँधी' पता नहीं यह कहावत क्यों और कैसे बनी। मुझे अभी तक भी इसका अर्थ नहीं पता चला। हाँ यदि हम कार्यक्षमता की बात करें तो कहीं न कहीं इसका सीधा प्रभाव कार्य पर होता है। क्षमता यह सिद्ध करती है कि आपके कार्य रूचिकर हो या न हो, आपका मन हो या न हो इन सबका कोई अर्थ नहीं रह जाता है। कहते हैं कल करे सो आज कर, आज करे सो अब।' यदि हम इसे माने तो हम कभी भी कार्य की अपूर्णता और कार्य अधिकता का रोना कभी भी रोएंगे। संस्कृत भाषा में एक सूक्ति है आलस्य हिमनुष्याणां महान् रिपुः।' जो व्यक्ति आलस्य का शिकार वह हमेशा ऐसे बहाने बना बनाकर अपनी असमर्थता व्यक्त करता रहता है। आलस्य मनुष्य शरीर में स्थित उसका सबसे बड़ा शत्रु है। एक बार शत्रु हमारे सामने से वार करता है परंतु आलस्य तो हमारे शरीर के भीतर रहकर हमें आगे बढ़ने से रोकता है। मेरी माने तो विद्यार्थी को हमेशा आलस्य से बचकर रहना ही चाहिए। क्योंकि एक विद्यार्थी को हमेशा अपने लक्ष्य पर ध्यान रखना चाहिए। तभी वह कार्य पूर्णता और समय की पाबंदी पर अपनी नजर बनाये रखना

चाहिए। विद्यार्थी यदि कार्य की अधिकता के विषय में कहे तो उसे समय का उचितसमायोजन करने के लिए प्रेरित करें। निकर्ष यह है कि हर व्यक्ति को अपने सारे कार्यों को सुनियोजिततरीके से व समय का सदुपयोग कर अपने कार्य को पूर्ण करने के लिए वचनबद्ध रहना चाहिए।

The Future of Robotics: What's the Use of AI in Robotics?

-Vikas Mishra PGT

Artificial Intelligence(AI) increases human-robot interaction, collaboration opportunities, and quality. The industrial sector already has co-bots, which are robots that work alongside humans to perform testing and assembly.

Advances in AI help robots mimic human behaviour more closely, which is why they were created in the first place. Robotics that acts and think more like people can integrate better into the workforce and bring a level of efficiency unmatched by human employees.

Robot designers use Artificial Intelligence to give their creations enhanced capabilities like:

- **Computer Vision:** Robots can identify and recognize objects they meet, discern details, and learn how to navigate or avoid specific items.
- **Manipulation:** AI helps robots gain the fine motor skills needed to grasp objects without destroying the item.
- **Motion Control and Navigation:** Robots no longer need humans to guide them along paths and process flows. AI enables robots to analyze their environment and self-navigate. This capability even applies to the virtual world of software. AI helps robot software processes avoid flow bottlenecks or process exceptions.
- **Natural Language Processing (NLP) and Real-World Perception:** Artificial Intelligence and Machine Learning (ML) help robots

better understand their surroundings, recognize and identify patterns, and comprehend data. These improvements increase the robot's autonomy and decrease reliance on human agents.

Hindu Temple Architecture in India

-Vibhansh Soni TGT

The three main types of Hindu temple architecture in India are Dravidian, Nagara, and Vesara, and they differ in their styles and regions of dominance:

Dravidian- This style originated in the 4th century CE during the Pallava dynasty and is common in southern India. Dravidian temples are often made from sandstone, soapstone, and granite, and feature sculptures of fierce doorkeepers. South Indian temples also often have a large water reservoir or temple tank.

Nagara- Nagara temples often rest on a high platform called a jagati, and are distinguished by their visual representation of ground plan and elevation.

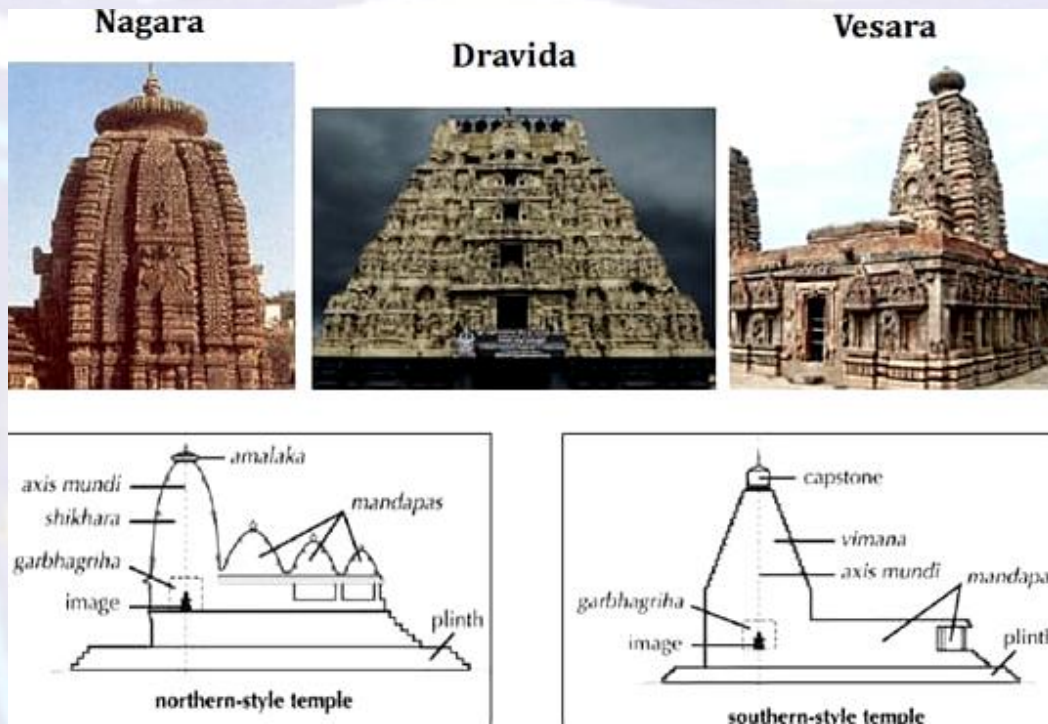
Vesara - This style is common in central and eastern India, and is sometimes associated with the area between the Vindhyas and the Krishna river.

Some other architectural features of Hindu temples include:

Garbhagriha - The sanctum sanctorum, or inner sanctum, where the main deity's idol is housed.

Mandapa - The pathway leading to the garbhagriha, where worshipers gather.

Vimana - A structure that sits over the garbhagriha in South Indian and Odia temples.



Radiation Health Effects

-Vikas Mishra PGT

Ionizing radiation has sufficient energy to affect the atoms in living cells and thereby damage their genetic material (DNA). Fortunately, the cells in our bodies are extremely efficient at repairing this damage. However, if the damage is not repaired correctly, a cell may die or eventually become cancerous.

Exposure to very high levels of radiation, such as being close to an atomic blast, can cause acute health effects such as skin burns and acute radiation syndrome (“radiation sickness”). It can also result in long-term health effects such as cancer and cardiovascular disease. Exposure to low levels of radiation encountered in the environment does not cause immediate health effects, but is a minor contributor to our overall cancer risk.

If radiofrequency radiation is high enough, it has a ‘thermal’ effect, which means it raises body temperature. There are concerns that the low levels of RF radiation emitted by mobile phones could cause health problems such as headaches or brain tumours.

5G is the fifth generation of wireless technology promising to connect the internet of Things (IoT) at blazing fast speeds. Industry wants to install millions of new cell antennas in front of homes, on street lights, and utility poles.

Beside the unsightly clusters, the real downside of 5G for you and your family is this: These antennas will increase the levels of radio-frequency electromagnetic field (RF-EMF) radiation, designated by the World Health Organization International Agency for Research on Cancer as a possible human carcinogen, in your neighborhood.

The harmful effects of 5G and 4G densification will impact humans, plants and animals. 5G “small cell deployment” will increase energy use and contribute to environment e-waste and pollution.

Peer-reviewed and published scientific research has linked exposure to:

- Cancer
- DNA damage
- Breach of the blood-brain barrier
- Reduced sperm motility and viability
- Immune system damage
- Altered brain development
- Increased oxidative stress (the inability to detoxify cells and tissues)
- Inflammation and metabolic breakdown
- Tumor promotion
- Sleep and memory loss
- Behavioral problems

How to reduce wireless radiation at Home?

Medical doctors and scientists recommend people reduce exposure to cell phone, Wi-Fi and wireless radiation. Scientific research has linked wireless to memory problems, cancer and harm to reproductive organs.

- **Use Speaker:** Protect your brain and body by keeping the phone at a distance. Minimize use and do not carry phones in pockets or use them near children.
- **Airplane Mode:** Turn antennas OFF with airplane mode often. Remember to check that Bluetooth, Wi-Fi, 5G and other antennas are also OFF. Tip: Instead of Wi-Fi streaming, pre-download music and videos so that devices can be used on Airplane Mode.
- **Corded Home Phone:** Choose a corded phone over a wireless one. Why? Because cordless & DECT(Digital Enhanced Cordless Telecommunication) phones emit nonstop wireless radiation.
- **Switch to Wired Tech:** Connect computers, laptops and tablets to the internet with ethernet, not Wi-Fi, Adapters allow you to plug ethernet into USB or lightning ports.
- **5G & Cell Towers:** Talk to your elected officials. 5G and 4G “small” cells towers should not be built near homes and schools.
- **Tablets OFF Laps:** Tablets and laptops expose your body to non-ionizing radiation. Always use devices on a table or desk.

Salt v/s Rice

- Deependra Singh Chouhan TGT

If you were to cook 3 cups of rice, would you add 3 cups of salt to it ?

Certainly not!

So, in every preparation of rice, the rice always outnumbered the salt, yet a little salt makes a huge difference /impact in the overall outcome.

In the room in which you currently are, look up at the ceiling...

What is the size of the bulb compared to the size of the room?

It is probably a ratio of 1:5000. Yet, darkness flees the entire space once the small bulb is flipped on. If I am the salt of the earth, and the light of the world, then "little me" has the ability to make big things happen..

Sometimes, because we feel outnumbered or overwhelmed at the sheer magnitude of evil or wrong-doers, we then choose powerlessness, and decide to go with the flow, not standing up for what we believe is right.

Little doesn't mean insignificant.

You are significant.

Your presence should make a BIG difference.

Stop waiting to be on the side of the majority.

They may be the majority, but they are the trivial majority, and you are the impactful minority.

They are the rice of the world, and you are the salt of the world.

They are the room and you are the light.*

Make your influence felt!

Remember:

You are the world's seasoning, to make it beautiful...

So if we can just do the right seasoning to make even one life beautiful our life is worth living.

Onwards and Upwards! Be the salt or the light.

1. गुरुकुल स्कूल

-घनिका लाड़, आठवीं अ

यह हमारा गुरुकुल विद्यालय,
शिक्षा का है उत्तम आलय।
पढ़ते यहाँ हम सब बच्चे,
नियम रीति में है सब सच्चे।
इंग्लिश यहाँ सिखाई जाती,
हिंदी यहाँ पढ़ाई जाती।
गणित यहाँ समझाई जाती,
कला यहाँ सिखलाई जाती।
शिक्षक सभी गुणी विद्वान,
देते विद्या का नितदान
भाईचारे की शिक्षा देते।
देश भक्ति का पाठ पढ़ाते,
यह शिक्षा का उत्तम आलय।
यह हमारा गुरुकुल विद्यालय।।

2. वीरों की गाथा

-यशस्विनी सिंह सोलंकी, दसवीं ई

करती हूँ नमन उस वीर को।
जो तानकर सीना, खड़ा है सरहद पर।
करती हूँ नमन उस वीरको
जो छोड़कर सारे बंधन, आया है इस वतन के लिए।

करती हूँ नमन उस वीर को,
जो कड़कती ठंड में, डटा है सिआचिन में।
करती हूँ नमन उसवीर को,
जो रख रहा हमे सुरक्षित, इतने मीलों दूरसे।

करती हूँ नमन उस वीर को,
जो जल, थल, वायु में रहकर दे रहा हमें सुरक्षा।
करती हूँ नमन उस वीर को,
जो इस देश की शान के लिए अपनी बलि दे रहा।

करती हूँ नमन उस वीर को.....
करती हूँ नमन उस वीर को.....

3. Amazing Facts about Maths -Bhavi Patidar (Class-10th D)

1. The word “hundred” comes from the old Norse term, “hundredth”, which actually means 120 and not 100.
2. In a room of 23 people there’s a 50% chance that two people have the same birthday.
3. Most mathematical symbols weren’t invented until the 16th century. Before that, equations were written in words.
4. “Forty” is the only number that is spelt with letters arranged in alphabetical order.
5. Conversely, “one” is the only number that is spelt with letters arranged in descending order.
6. From 0 to 1000, the only number that has the letter “a” in it is “one thousand”.
7. ‘Four’ is the only number in the English language that is spelt with the same number of letters as the number itself.
8. Every odd number has an “e” in it.
9. The reason Americans call mathematics “math”, is because they argue that “mathematics” functions as a singular noun so ‘math’ should be singular too.

10. Markings on animal bones indicate that humans have been doing maths since around 30,000BC.
11. “Eleven plus two” is an anagram of “twelve plus one” which is pretty fitting as the answer to both equations is 13.
12. Also, there are 13 letters in both “eleven plus two” and “twelve plus one”.
13. Zero is not represented in Roman numerals.
14. The word “mathematics” only appears in one Shakespearean play, “The Taming of the Shrew”.
15. $-40\text{ }^{\circ}\text{C}$ is equal to $-40\text{ }^{\circ}\text{F}$.
16. In France, a pie chart is sometimes referred to as a “camembert”.
17. The symbol for division (i.e. \div) is called an obelus.
18. 2 and 5 are the only prime numbers that end in 2 or 5.
19. A ‘jiffy’ is an actual unit of time. It means $1/100$ th of a second.
20. If you shuffle a deck of cards properly, it’s more than likely that the exact order of the cards you get has never been seen before in the whole history of the universe.

4. You think English is easy?-Kinjal Jain (Class- 10th E)

- 1) The bandage was wound around the wound.
- 2) The farm was used to produce produce.
- 3) The dump was so full that it had to refuse more refuse.
- 4) We must polish the Polish furniture.
- 5) He could lead if he would get the lead out.
- 6) The soldier decided to desert his dessert in the desert.
- 7) Since there is no time like the present, he thought it was time to present the present.
- 8) A bass was painted on the head of the bass drum.
- 9) When shot at, the dove dove into the bushes.
- 10) I did not object to the object.
- 11) The insurance was invalid for the invalid.
- 12) There was a row among the oarsmen about how to row.
- 13) They were too close to the door to close it.
- 14) The buck does funny things when the does are present.
- 15) A seamstress and a sewer fell down into a sewer line.
- 16) To help with planting, the farmer taught his sow to sow.
- 17) The wind was too strong to wind the sail.
- 18) Upon seeing the tear in the painting I shed a tear.
- 19) I had to subject the subject to a series of tests.
- 20) How can I intimate this to my most intimate friend?

5. Interesting Facts

-Samriddhi Parmarhi (Class – 11th Bio)

1. The largest bone in the human body is the femur, also known as the thigh bone. The smallest bone is the stapes bones which is located inside eardrum.
2. The human brain is the most complex organ in the body, containing around 86 billion nerve cells.
3. The average human being swallow one liter of saliva a day.
4. Reading speed on screen is typically 25% slower than reading on paper.
5. The body makes around 2 million red blood cells per second.

6. Life on Mars

-Samriddhi Parmarhi (Class – 11th Bio)

Four and a half billion years ago, a rock was formed on Mars by some volcanic process. Half a billion years later, this rock was broken into smaller pieces by a meteorite impact nearby. Some ground water also



entered the rock. 16 million years ago, an asteroid hit Mars somewhere near where this rock was. The impact threw pieces of the rock into space. One 2 kilogram piece of rock orbited the Sun until 13,000 years ago, when it came close to the Earth. This piece crashed onto an Antarctic glacier. Over 13,000 years, it reached the Allan Hills region of Antarctica, buried inside the ice. In 1984, this meteorite was discovered and named ALH84001. A large number of people worked out this history of the meteorite that we just narrated.

This year, a team led by David McKay of the American space organization NASA, suggested that there seemed that there seemed to be signs that life may have existed on this rock in some bygone era: The

meteorite has some organic molecules, of the same family as naphthalene (which is used in mothballs). When bacteria decay, such ↑ compounds are produced. Many meteorites do have such compounds.



The meteorite has iron oxide (magnetite) of the sort which some bacteria on Earth secrete. It has iron sulphide, which is produced by some anaerobic bacteria (those that don't use oxygen). The meteorite has some balls of carbonate material, which may be formed by some material, which may be formed by some living thing. On the other hand, almost all earth bacteria are 100 times larger than this material. The meteorite may contain very small fossils (less than hundred millionth of a millimeter). Nanobacteria are this size. In 1961, another meteorite was found to have signs of life. But soon these were discovered to be grains of pollen and particles of furnace ash. The signs of life turned out to be from Earth itself. This could be the case for the Antarctic meteorite too. What makes scientist more hopeful is that some of these items mentioned are within cracks, and the cracks could only have been formed before the meteorite came to rest in Antarctica. So maybe, just maybe, the signs of bacterial life that we see are from when the rock was on Mars. In 1976, the Viking spacecraft failed to find any such bacteria on Mars. But maybe they landed in the lifeless part of Mars. Or maybe bacteria were present on Mars millions of years ago, but aren't there now. Scientists are looking at ALH84001 very, very carefully. And even US President Bill Clinton has promised support for a new NASA spacecraft to Mars.

7. Nanotechnology: Applications and Implications (Abstract)

-Atharv Goyal (Class- 7th A)

Nanotechnology is an emerging technology which is developing at an exponential rate. The technology utilizes novel characteristics of materials that are exhibited only at nanoscale level. Although still in early stages, this technology has signaled potential and breakthroughs in many areas such as medicines, computer technology, food industry, building construction, environment protection to mention just a few.

The many exciting products it promises have served to draw a lot of attention to it. Many findings of nanotechnology are quickly being implemented in viable commercial products. This is in spite of insufficient toxicological data about the environment and biological effects of such nanomaterials.

As nanotechnology gains widespread application in various disciplines, it is imperative to understand its potential effects. This is important for its long terms sustainability. It is also equally critical to set up necessary control legislations and benchmark standards to control research and commercial application of this emerging technology.

The last half of the last century witnessed the technological world going “micro” evidenced by microdevices and microparticals. However, from the start of 21st century, the “micro” is poised to give way to the “Nano”. Nanotechnology is an emerging technology that is offering promises of breakthroughs cutting across multiple subjects such as medicines, food industry, energy sector and environmental remediation to mention a few.

The potential of nanotechnology to solve hitherto “unsolvable” problems by conventional technologies has attracted the attention of government and commercial corporations with diverse interests. Billions of dollars for research and development continue to be channeled to nanotechnology projects all over the world.

8. Our World

-Samridhhi Parmarhi (Class – 11th Bio)



The grass is green,
The sky is blue,
The moon is white,
The clouds are, too.
The sun is yellow,
The trees are brown,
The leaves are red
When falling down.
The sunset's orange,
The air is clear,
What a colorful world
We have right here!

9. What is Biomechanics? - Ishika Chouhan (Class 11th Bio)

It is the application of mechanical principles in the study of living organisms.

Biomechanics - The study and analysis of human movement patterns in sports. It is a quantitative based study and analysis of professional athletes and sports' activities in general. It can simply be described as the Physics of Sports.

Role of Biomechanics - Biomechanics can play a crucial role in both injury prevention as well as performance enhancement. It is important for athletes of all ages and skill levels to understand the importance of education to develop proper mechanics. Education can come in multiple forms, but with the emphasis on the visual learner in today's society, visual feedback is one of the most effective ways to modify an athlete's technique and allow them to perform at the most efficient level possible. An athlete's ability to perform efficiently and injury free are two key features in performance outcome and can both be improved with Biomechanical analysis.

Application - According to Knudson human movement performance can be enhanced in many ways. Effective movement encompasses anatomical factors, neuromuscular skills, physiological capacities, and psychological/cognitive abilities. Biomechanics is essentially the science of movement technique and tends to be most utilized in sports where technique is a dominant factor rather than physical structure or physiological capacities. The following are some of the areas where biomechanics is applied, to either support the performance of athletes or solve issues in sport or exercise

- The identification of optimal technique for enhancing sports performance

- The analysis of body loading to determine the safest method for performing a particular sport or exercise task
- The assessment of muscle recruitment and loading
- The analysis of sport and exercise equipment e.g., shoes, surfaces and rackets.

Biomechanics is utilized to attempt to enhance performance or reduce the risk of injury in the sport and exercise tasks examined.

Benefit from Biomechanical Analysis

Biomechanical analysis can benefit athletes of all ages and skill levels. Whether you are a weekend runner or a high performance sprinter, biomechanical analysis can be beneficial to you as it will allow you the opportunity to develop more efficient movement patterns. This can benefit the weekend runner by allowing them to increase their distance and run pain free, while the high performance sprinter can benefit from a more efficient running stride and allow them to shave milliseconds off their personal best time.



Benefits of Proper Biomechanics

- Develops efficient movement patterns whether on the field of play or during resistance training
- It helps in analyzing the sports performance. Data of performance is collected by different biomechanical techniques as cinematography, myography and analyzed.

- It helps in selection and adoption of techniques. It help for deciding the technique on the basis of human structure and its possible movement for the best result in sports.
- It helps in discovering the technique for the use of new equipments.
- It gives technical knowledge of technical mistakes.
- It helps in differentiating competition and training exercises.
- Physical ability can be developed with its help.
- It helps in generalizing the solution of biomechanical problems.



Biomechanics is the most important part of physical education and sports and playing a great role in this field. It helps a coach to give a proper training for athletes if we ignore the concept of biomechanics we can't give a proper training to athletes and their skills will not be improved.

Conclusion - Biomechanics is the most important part of physical education and sports and playing a great role in this field. It helps a coach to give a proper training for athletes if we ignore the concept of biomechanics we can't give a proper training to athletes and their skills will not be improved.

10. The Impact of 5G on Software Development and Deployment

-Madhav Sharma (Class - 12th Maths)

Introduction: The advent of 5G technology marks a significant milestone in the evolution of mobile networks, promising speeds, lower latency, and the ability to connect a massive number of devices simultaneously. While much of the attention around 5G has focused on its potential to revolutionize industries like telecommunications, healthcare, and transportation, its impact on software development is equally profound. This article delves into how 5G is reshaping the landscape of software development, from the way applications are designed and deployed to the new possibilities it unlocks for developers.

Speed and Performance: A New Benchmark One of the most notable features of 5G is its incredible speed, which can reach up to 10 Gbps—nearly 100 times faster than 4G. This dramatic increase in speed is transforming the expectations for software performance. Applications that previously struggled with bandwidth limitations can now deliver richer, more responsive user experiences. For developers, this means a shift towards building more data-intensive applications, such as those involving real-time video streaming, augmented reality (AR), and virtual reality (VR). With 5G, developers can also optimize applications for high-speed environments without compromising performance for users with slower connections. This leads to more efficient coding practices and the potential to create software that adapts dynamically to varying network conditions.

Enhanced Connectivity: Powering the Internet of Things (IoT) 5G's ability to support a massive number of connected devices simultaneously is a game-changer for the Internet of Things (IoT). As more devices become interconnected, the demand for software that can manage and

leverage these connections is growing rapidly. Developers are now tasked with creating applications that can handle the influx of data from a myriad of sources, ensuring seamless communication and interoperability between devices. This enhanced connectivity also paves the way for new types of applications that were previously not feasible, such as smart cities, connected healthcare systems, and intelligent transportation networks. Developers working in these areas will need to focus on building scalable, secure, and reliable software that can manage the complexity of these interconnected systems.

Security Considerations: A New Frontier With the increased speed, lower latency, and expanded connectivity of 5G, security concerns are becoming more pronounced. As software developers build applications for 5G networks, they must also address the new security challenges that come with this technology. The sheer number of connected devices, coupled with the distributed nature of edge computing, creates a larger attack surface for potential cyber threats. Developers must prioritize security from the ground up, implementing robust encryption, authentication, and intrusion detection mechanisms. Additionally, with the increased data transfer rates and the potential for sensitive information to be transmitted in real-time, ensuring data privacy and compliance with regulations like GDPR becomes even more critical.

The Road Ahead (Opportunities and Challenges): The rollout of 5G is still in its early stages, but its impact on software development is already becoming apparent. Developers are presented with a wealth of opportunities to create innovative applications that leverage the unique capabilities of 5G. However, these opportunities also come with challenges, particularly in terms of security, data management, and the need to adapt to a rapidly evolving technological landscape. As 5G

networks continue to expand, the demand for software that can harness the full potential of this technology will only grow. Developers who can navigate the complexities of 5G and create applications that deliver on its promise will be at the forefront of the next wave of technological innovation.

Conclusion: The introduction of 5G is not just an upgrade to mobile networks; it's a transformative force that is reshaping the future of software development. From enabling real-time interactions and supporting massive IoT deployments to pushing the boundaries of what's possible with edge computing, 5G is opening up new horizons for developers. As the technology continues to evolve, so too will the opportunities for innovation in software development.

11. Cloud Computing

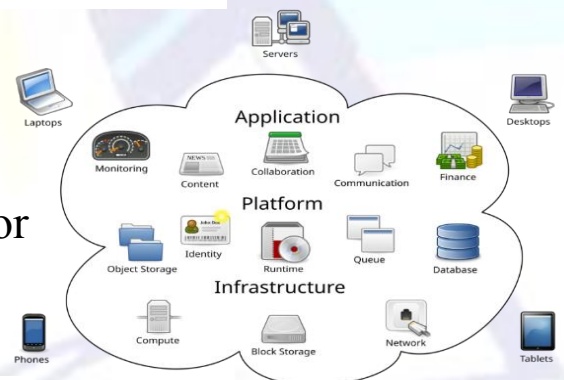
- Lavanya Nahar (Class – 6th D)

Simply put, cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the Internet (“the cloud”) to offer faster innovation, flexible resources, and economies of scale.

A cloud can be private, public or a hybrid. A public cloud sells services to anyone on the internet.

A private cloud is a proprietary network or a data center that supplies hosted services to a limited number of people, with certain access and permissions settings. A

hybrid cloud offers a mixed computing environment where data and resources can be shared between both public and private clouds. Regardless of the type, the goal of cloud computing is to provide easy, scalable access to computing resources and IT services.



12. What is Robot?

- Tarushi Gupta (Class - 6th E)

A robot is a machine-specially one programmable by a computer-capable of carrying out a complex series of actions automatically. A robot can be guided by an external control device or the control may be embedded within. Robots may be constructed to evoke human form but most robots as task-performing machines, designed with an emphasis on specific functionality rather than expressive aesthetics. Properly robots can be autonomous or semi-autonomous and range from humanoids such as Honda's Advanced Step in Innovative Mobility (ASIMO) and TOSY'S tosy pine Pang Playing Robot (TOPIO) to industrial robot, medical operating robots, patient assist robots, dog therapy robots, collectively programmed swarm robots, UAV drones such as general atomics MQ.1 Predator and even microscopic nano robots. By mimicking a life like appearance or automating movements, a robot may convey a sense of intelligence or thought of its own. Autonomous things are expected to proliferate in the future, with home robotics and the autonomous car as some of the main drives.

The branch of technology that deals with the design, construction, operation and application of robots as well as computer systems for their control, sensory feedback and information processing is robotics. These technologies deal with automated machines that can take the place of humans in dangerous environments of manufacturing processes or resemble humans in appearance, behavior or cognition. Many of today's robots are inspired by nature contributing to the field of bio-inspired robotics. These robots have also created a newer branch of robotics: soft robotics.

The word robot can refer to both physical robots and virtual software agents but the latter are usually referred to as bots. There is no consensus

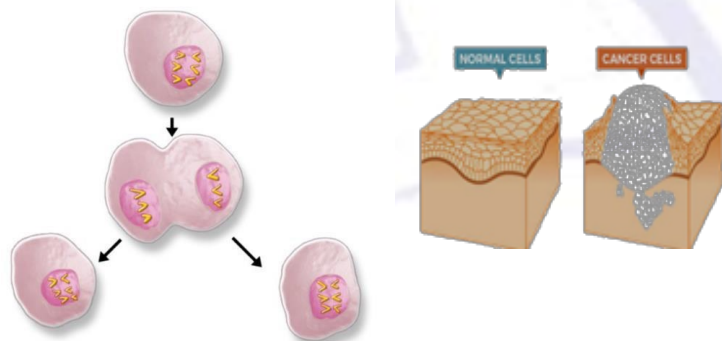
on which machines qualify as robots but there is general agreement among experts, and the public that robots among experts and the public that robots tend to possess some or all of the following abilities and functions: aspect electronic programming, process data or physical perceptions electronically, operate autonomously to some degree, move around, operate physical parts of itself or physical processes, sense and manipulate their environment and exhibit intelligent behavior especially behavior which mimics humans or other animals. Related to the concept of a robot is the field of synthetic biology which studies entities whose nature is more comparable to living things than to machines.

13. Cancer and its effects -Anshika Patidar (Class – 11th Bio)

Cancer - Having cancer is a life-changing event. Knowing what to expect - from diagnosis to recovery - can empower you and help you take control of your health. This is a general overview of what is cancer
Cancer is a large group of diseases with one thing in common: They happen when normal cells become cancerous cells that multiply and spread. Your genes send instructions to your cells - like when to start and stop growing, for example. Normal cells follow these instructions, but cancer cells ignore them.

Types of Cancer-

- Common Cancer Types
- Bladder Cancer
- Breast Cancer
- Colorectal Cancer
- Kidney (Renal Cell) Cancer
- Lung Cancer
- Lymphoma



- Pancreatic Cancer
- Prostate Cancer
- Skin Cancer

Symptoms-

- If you have any of these signs, see your doctor. These are potential cancer symptoms:
- Change in bowel or bladder habits
- A sore that does not heal
- Unusual bleeding or discharge
- Thickening or lump in the breast or elsewhere
- Indigestion or difficulty in swallowing
- Obvious change in a wart or mole

Cancer cells have gene mutations that turn the cell from a normal cell into a cancer cell. These gene mutations may be inherited, develop over time as we get older and genes wear out, or develop if we are around something that damages our genes, like cigarette smoke, alcohol or ultraviolet (UV) radiation from the sun.

Cancer is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body. Cancer can start almost anywhere in the human body, which is made up of trillions of cells. The human body is made up of billions of cells. Cells are the tiny building blocks of our tissues and organs. All living things start life as a single cell. That cell makes a copy of itself (replicates) and then divides into two cells.

14. Physiology in Physical Education

- Pranjali Patidar (Class – 11th Bio)

Introduction-

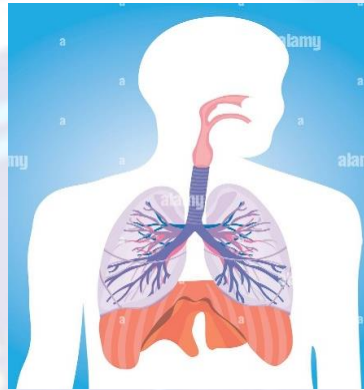
It teaches students about physiological system functions and mechanisms that affect the internal environment, such as body temperature, blood glucose, and arterial oxygen content. The study of anatomy and physiology helps a sport person to understand the structure and function of different parts of the human body and to acquire a fit and healthy body.

The Musculoskeletal System

1. Bones- Bones provide structure and support, enabling movement and protecting vital organs.
2. Joints - Joints allow bones to move relative to each other, facilitating a wide range of motions.
3. Muscles - Muscles contract and relax, producing force and controlling movement.
4. Tendons - Tendons attach muscles to bones, transmitting force to create movement.

The Cardiovascular System

1. Heart - The heart pumps blood throughout the body, delivering oxygen and nutrients.
2. Blood Vessels - Blood vessels transport blood, including arteries, veins, and capillaries.
3. Blood - Blood carries oxygen, nutrients, and waste products, playing a vital role in cellular function.



The Respiratory System

1. Inhalation - Air enters the lungs, delivering oxygen to the blood.
2. Gas Exchange - Oxygen diffuses into the blood, while carbon dioxide diffuses out.
3. Exhalation - Carbon dioxide is expelled from the body, along with other waste products.

The Nervous System

1. Central Nervous System - The brain and spinal cord control and coordinate bodily functions.
2. Peripheral Nervous System - Nerves connect the central nervous system to the rest of the body, transmitting signals.
3. Sensory Receptors - Sensory receptors gather information about the environment and send it to the brain.
4. Motor Neurons - Motor neurons transmit signals from the brain to muscles, initiating movement.

Conclusion and Practical Applications

Understanding human physiology is crucial for designing effective physical education programs. It helps us optimize training, prevent injuries, and enhance athletic performance. By applying this knowledge, we can empower individuals to achieve their fitness goals and live healthier lives.

15. Beyond the Enchanted Door -Aakrati Sawant (Class – 10th B)

Everyone has experienced some mysterious events in their life but in Emily's case, the circumstances were quite unnatural.

Emily was 15 years old when this event took place. She was a Charming and Brave girl. Her brown hair and blue eyes made her look like any other teenage girl in her country. But what made her unique was her curiosity and desire for adventure at every step of her life. She loves to explore and make sense of things around her. These traits of her possibly came from her ancestral lineage who were rulers of Pandora kingdom in Scotland. They ruled in Elizabethan era. The culmination of this Kingdom is still a mystery. Some say, it was due to Rose fever, a disease prevalent during that era.

One summer, her family went to spend their vacations in their ancestral castle. The castle was enormous. It's tall walls were cracked and the once bright windows were all dirty and broken. The Age old Chandeliers were all corroded due to rust. Emily thought that she has entered the world of her dreams. Everything was going fine until her mother instructed her not to enter a closed room in the back side of the castle. Upon asking her elder brother she found out that there is something mysterious related to that room. She couldn't stop thinking about that door and couldn't control her curiosity. So she decided to sneak into that room at night.

The room turned out to be a library. It was well maintained unlike the whole castle. The library was well lit and had intricate carvings. There were books as far as the eyes could reach. The bookshelves were plated with gold and bronze and there was an essence of freshness spreading through an oak tree in the centre. But what caught hold of Emily eyes was an enormous book kept in the shade of the tree. As she approached

it, she felt depressed and uneasy. She was stunned as the pages were made up of real animal fesh. It was written using an ancient language and there were many diagrams painted on it's cover. One she recognized was the Earth centred Ptolemaic Model of the Solar System.

She felt tingling and pain in her hands as she turned those pages. She was losing consciousness and just then a voice came from behind.

"I do not get many visitors in here nowadays" said a young girl. Emily regained her consciousness and asked, "Who are you?" The girl replied, "I am Iris, the head librarian". "Well, you why is this place unlike rest of the castle?" while asking this Emily realized that Iris was all dressed like a girl in

Elizabethan Era. She looked around 17 years old, blond, calm and her pronunciation sounded uncommon. "Well, something's must be kept secret" Iris replied. Iris gave her a tour of the library and in the end of their conversation Emily asked Iris about the book. Iris gave her a depressed look and replied with low voice, "No one knows where the book came from or even its name. It is sacred. There is spiritual power associated with it. The book writes the present and predicts the future of the Kingdom. One page is added to it every single day recording all the major happenings in the world of the day. The written pages disappear into the eternity of the seven heavens and new are added to it." Tears started coming out of her eyes as she completed, "The book has become stable. It is reaching its end. This means the destruction of the Kingdom. The curse has already started to take over with the disease." She started sobbing loudly and screaming. Emily got scared and dashed out of the room. To her surprise, it wasn't the castle she was living in. It looked the same but new and well maintained. It was day and there were lots of people in the castle. They were all dressed in Elizabethan era clothing

and spoke different dialect. Emily panicked and screamed for help but it seemed that she was invisible to those people. She kept running until she found herself in a dark room. The room was freezing cold. She felt as if she saw someone at some distance. “Mom, Dad” she said. When she reached the place, she felt shiver down her spine. She was shaken up as it was the same book from the library and it was floating in the air. She was stunned and before she could think of what to do, the room became Selene and hundreds of book started appear and circling around her at tremendous speed. In a little time, Emily became unconscious.

When she woke up she found herself in her bedroom and everything was perfectly normal. As she told everyone about the incident no one believed her and said that she has gone mad. She decided to consolidate and calm herself by making her believe that it was just a dream. Nothing unusual happened for a couple days but this was not going to stay like this for a long time. Just after a few days, she got symptoms of Rose fever. A disease which has vanished from the world in present. How did she catch that disease? The only conceivable reason is that she really time travelled to that era through that door. Even after she recovered from that disease, she gets dreams about that book and she breaks out in cold sweat every time she thinks about it.

16. The Ripple of Generosity - Radhika Waskel (Class – 10th E)

In a restaurant in one of the American states, the restaurant waitress handed the lunch menu to a man and his wife, and before they looked at the menu, they asked her to offer them the two cheapest dishes because they did not have enough money after not receiving their salary for several months due to financial challenges faced by the entity they work for.

The waitress, Sarah, didn't think long. She suggested two dishes to them and they agreed without hesitation as long as they were the cheapest. She brought the two orders and they ate them greedily, and before they left they asked the waitress for the bill. She returned to them with a piece of paper inside her billing wallet on which she wrote: **"I paid your bill from my personal account out of consideration for your circumstances. This is the sum of one hundred dollars as a gift from me, and this is the least I can do for you. Thank you for your kindness. Signed by Sarah."**

The couple was very happy as they left the restaurant.

What is striking about the previous situation is that Sarah felt extremely happy to pay the couple's food bill despite her difficult financial circumstances. She had been saving for about a year for the cost of an automatic washing machine that she wanted to buy, and any money she wasted would postpone the date of her acquisition of this dream device, as she washed clothes with an old washing machine.

But what saddened her most was Sarah's friend scolding her when she found out about the matter. She denounced her behavior; because she deprived herself and her child of money that she needed more than others to buy a washing machine.

Before remorse could seep into her after her friend's protest against her initiative, she received a call from her mother asking her in a loud voice: "What did you do, Sarah?"

She replied in a low, trembling voice, fearing an unbearable shock: "I didn't do anything. What happened?"

Her mother replied: "Facebook is on fire praising you and praising your behavior. The couple you helped, posted your message to them on Facebook after you paid the bill on their behalf and it was shared by many. I am proud of you."

She had barely finished her conversation with her mother when a school friend called her indicating that her message had been circulated virally on all digital social platforms.

As soon as Sarah opened her Facebook account, she found hundreds of messages from television producers and press reporters asking to meet her to talk about her distinctive initiative.

The next day, Sarah appeared on the air of one of the most famous and most watched American television shows. The presenter of the program gave her a very luxurious washing machine, a modern television set, and ten thousand dollars. She obtained a purchase voucher for five thousand dollars from an electronics company. Gifts rained down on her until they reached more than \$100,000 in appreciation of her great humanitarian behavior.

Two meals that cost her no more than a few dollars + \$100 changed her life.

Moral: Generosity is not about giving what you do not need, but about giving what you most need. True poverty is the poverty of humanity and attitudes. Never underestimate the blessings that might come from being kind.

17. Rebel

- Himnish Akare (Class- 7th C)

Rebel: A person who is not satisfied with the work he/she is expected to do, the dictates of society, family, and sometimes even their own. A rebel fights for freedom, with courage and willpower.

This is the story of a rebel who was tired of being confined by a set of rules. This is the story of hard work, courage, willpower, and struggle.

This is the story of Rusty.

Rusty was a seventeen-year-old boy living in the hills of the European community of Dehra. His parents died when he was young, and he lived with his guardian, Mr. Harrison, and Mr. Harrison's wife, who was a kind woman and treated Rusty like her own son. However, Mr. Harrison was strict and not very open with Rusty, who was not allowed to go to the bazaar in Dehra. Mr. Harrison's sophistication did not allow Rusty to do things on his own.

It all started with a walk in the hills. Rusty, as usual, was in a tired mood, with his head down and hands in his pockets. After some time, a stranger on a bicycle asked him, "Would you like a lift?" Rusty replied, "No thanks," but in the awkward silence, he sat on the back of the cycle. The stranger greeted him, "Hullo, Mr." At first, Rusty hesitated, but their conversation continued until it was interrupted by a youth named Somi, who shouted, "Ranbir!"

"Can I get a lift?" he asked as he jumped onto the cycle, making Rusty uncomfortable. Somi introduced Rusty to Ranbir, saying, "He's the best wrestler in the bazaar." This was the first time Rusty was interested in something. After a short distance, Rusty got off the cycle and shouted, "Hey, you didn't tell me your name!" Somi replied, "My name is Somi." The next day, when Rusty went for a walk, he met Somi again, and they went to a chaat shop. Since Rusty had never been to the bazaar before, it was his first time eating chaat. Although he felt a burning in his

stomach, he realized it was the tastiest thing he had ever eaten. Then, Ranbir entered the scene, and their conversation continued. Ranbir asked, “Are you coming to Holi?” Rusty shockingly replied, “What’s Holi?” Somi explained, “Toba! You don’t know about Holi? It’s the best festival of the year.” Since Rusty had never gone beyond the smart shops, he was unaware of Holi.

This time, he was invited by his friends. Somi said, “Okay, best favorite friend, I will meet you the day after tomorrow.” Rusty shockingly asked, “Day after tomorrow?” Somi replied, “Did you see the kada on my arm? It means I’m Sikh, and I don’t play Holi.” Somi then left, and Ranbir asked again, “So, are you coming to Holi?” Rusty hesitated and said, “Maybe, my guardian doesn’t allow me to go to the bazaar.” Ranbir suggested, “Don’t tell him.” Rusty replied, “Oh, he has ways to find out.” Ranbir looked disappointed. Rusty said, “Okay, if my guardian doesn’t come back tomorrow, I will play Holi with you.” Ranbir said, “So tomorrow, if you hear drumbeats, it’s me.”

Rusty was not worried about Holi, but he was concerned when he saw his guardian. “Hullo, sir! You came back,” Rusty said. “Hullo! Where have you been all day?” Mr. Harrison asked. Rusty replied, “Nothing, I was on a walk.” Mr. Harrison said, “I thought you were in the bazaar.” Rusty couldn’t lie this time. “Yes, sir, I went to the bazaar,” he admitted. Mr. Harrison responded, “Rusty, I have told you many times that the bazaar is not a place for you.” He was about to hit Rusty, but Rusty stopped his hand. He realized he was not a kid anymore; he had grown up, and that was when the fight began. Rusty’s anger was stronger than Mr. Harrison’s authority, and he ran away from the prison of rules into the open world of freedom. He lived there with ups and downs, facing struggles along with the happiest and saddest moments of his life.

Inspired by Ruskin Bond

18. Tongue Twisters!- Manthan Gupta (Class – 9th B)

1. How much wood would a woodchuck chuck if a woodchuck could chuck wood?
2. If two witches would watch two watches, which witch would watch which watch?
3. When a doctor doctors a doctor, does the doctor doing the doctoring doctor as the doctor being doctored wants to be doctored or does the doctor doing the doctoring doctor as he wants to doctor?
4. Good. better. best Never let it rest Till your good is better And your better best.
5. That's the man who Sat on my hat in the tram.
6. Sit a bit. Sit still till I kill the fly.
7. Six little kittens lost their mittens. It's a pity. They are very pretty.
8. She laughs best who loves last.
9. The cook took a good look at the cookery book.

19. Proverbs in Poetry- Krishna Goyal (Class – 9th B)

When the going gets tough,
 The tough gets going.
 When the going gets easy,
 Our life keeps moving.

If wishes were horses,
 Beggars would ride.
 If horses made wishes,
 Their owners would hide.

Do to others,
As others do to you.
Do to yourself,
As the way God cares for you.

Each proverb comes with a teaching,
To think and learn before we act.
Never underestimate your strengths,
For your grit will always create an impact!

20. Women's Participation in Sports

-Pranjal Popale (Class – 12th Bio)

Women's participation in sports has a long history that has evolved significantly over the past century. It is a history marked by division and discrimination but also one filled with major accomplishment by female athletes.

In ancient Olympic Games, women were not allowed to participate but in modern Olympic Games females are the active member (except in first Olympic Games in 1896). In 1916, the Amateur Athletic Union conducted its first women world championship at London. Later, International Olympic Committee (IOC) designed and altered the rules and regulations of various games to encourage the participation of female athletes.

Today, the modern society has accepted the women's participation in sports competition and it has risen to a great extent as compared in the past. There is a rich record of sports participation of women in India and recent trends have sparked a need for knowledge about female sports

participation. In urban areas, female participation in sports is high whereas it is less in rural areas.

Barriers- Women have faced numerous barriers in their quest for equality in sports. This include cultural and social norms, lack of opportunities, media coverage, economical disparities, over burden with household work, fear of sexual harassment and poor implementation of government policies.

Achievement – Despite the challenges, significant progress has been made such as legislative advances, increased representation, improved media coverage and changing attitude.

Impact in women's life – Sports participation of women play important roles in the life of a women. With sports she can built confidence, positive body image, learn how to deal with success as well as failure, good body shape, control anger and anxiety and overcome shyness.

Impact on society – The participation of women in sports has had a profound impact on society. It promote gender equality, health and empowerment, economic and social benefits.

Menstruation, a natural and routine biological process, has historically been a significant yet often overlooked factor affecting women's participation in sports. Menstruation involves a monthly cycle characterized by the shedding of the uterine lining, typically lasting between 3 to 7. This cycle repeats after every 22 to 35 days.

Despite advancements in gender equality this cycle can influence various aspects of physical and mental health, potentially affecting athletic performance and participation in sports.

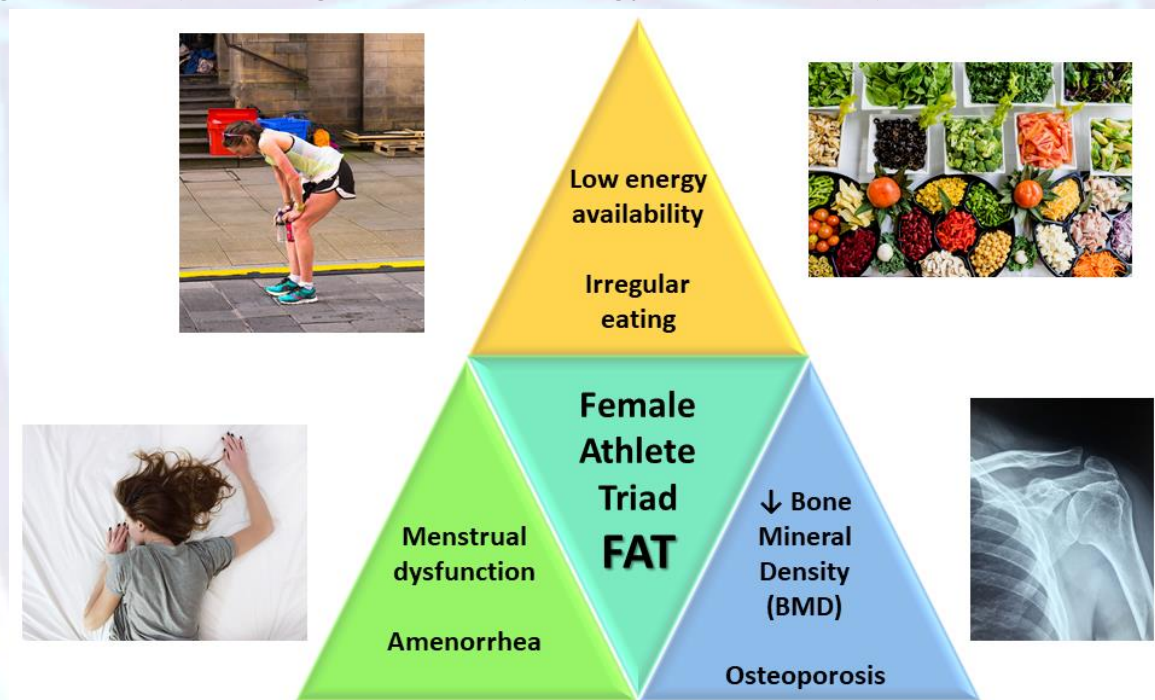


Menstrual Dysfunction- It is an abnormal or irregular condition in women's menstrual cycle i.e. absence of menstrual bleeding. The amount of bleeding varies, some have less bleeding whereas some women have heavy and prolonged bleeding. Menstrual dysfunction is the normal physiological phase in female. The research has proved that female can participate in light to moderate physical activity without any complication, whereas heavy training schedule of physical activity can be participated with care of personal cleanliness and hygienic habits.



Female athlete triad - It is the medical condition which often observed in physically active women participating in extreme hard work during sports activities or to reduce body weight under intense pressure of diet. The triad is a serious illness with lifelong health consequences and can be fatal. This triad comprises three interrelated components;

osteoporosis (bone weakening triad), amenorrhea (hormonal triad), eating disorder (energy intake triad).

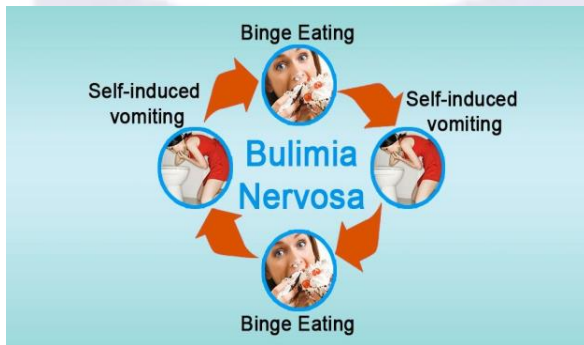


Osteoporosis – It is the weakening of bones due to the loss of bone density and improper bone formation. This condition declines the performance and leads to bone injury. Estrogen gets lower in girls with female athlete triad. The low level of estrogen and poor nutritional diet lead to osteoporosis.

Amenorrhea – In this second triad factor, female faces varied menstrual cycle due to varied hormone level. The cause of this disorder is due to less energy level, reduced vitamin and mineral diet and over physical training.

Eating disorder- In this triad factor, females do not eat enough calories to lose weight as a way to improve their athletic performance and thus their energy level reduces which causes many health problem. It is of two types;

Bulimia Nervosa



Anorexia Nervosa



From being relegated to the sidelines to achieving prominence in various athletic disciplines, women have consistently demonstrated their capabilities and potential. Some of top women athletes from India who have proved their sports ability at international arena are Mary Kom (boxing), Hima Das (athletics), Saina Nehwal (badminton), Sakshi Malik (wrestling), Deepika Kumari (archery) and many more.



Conclusion:

Women's participation in sports has come a long way, but challenges remain. Continued efforts are necessary to address remaining barriers and ensure that women have equal opportunities to participate and excel. As society progresses towards greater gender equality, the achievement of female athletes will continue to inspire and drive positive change, highlighting the importance of inclusivity and representation in all spheres of life.

21. The Big Bang

- Chirayu Patidar (Class – 10th C)

1. What did you think when the Universe started?
2. What was before the creation of the Universe?
3. Is there any starting Universe?
4. Is the Universe this big or is it our imagination?

Most Astronomers believe that the Universe was created in the Big Bang about 14 billion years ago and before the Big Bang it was smaller than a bubble that was thousand times smaller than a pinhead. It was hotter and denser than our imagination.

- So what do you know about the Big Bang. What is it? Was it real?

The Big Bang theory is the popular cosmological representation that illustrates the early development of the Universe. This theory is an effort to explain what happened at the very beginning of our Universe. It states that the Universe began in an enormous explosion. The Universe was considerably smaller than a pore on your skin. With the Big Bang fabric of Space itself began expanding like an inflating balloon. Matter along started scratching like dust on the balloon surface.

Source from encyclopedia.

22. Human Bioluminescence

- Deepika waskel (Class – 11th Bio)

Bioluminescence is the production and emission of light by living organisms. While commonly associated with sea creatures, humans possess some of the same abilities that can have multiple implications when it comes to health and wellness. While we cannot really see the light given off by humans with the naked eye, it can be detected with the use of proper equipment. It just so happens that this light has been detected when it comes to certain healing arts and meditation. Light seems to increase with intention and subsides when the healing session

is over. Generally Bioluminescence in human being occurs when human cells emit small amounts of light, or biophotons, as a result of metabolic reactions. When human cells respire, they produce free radicals that react with lipids and proteins, which can then interact with fluorophores in the body to emit light. In 2009, Japanese scientists used a highly sensitive imaging camera to capture the first images of human bioluminescence. The light is a thousand times weaker than what the human eye can see, and previous cameras took over an hour to capture a single image. The researchers describe how they imaged volunteers' upper bodies using ultra-sensitive cameras over a period of several days. Their results show that the amount of light emitted follows a 24-hour cycle, at its highest in late afternoon and lowest late at night, and that the brightest light is emitted from the cheeks, forehead and neck. Bioluminescent light is a cold source of light so only a fractional amount of this light, (never more than 20%), radiates heat. While some creatures emit bioluminescent light constantly, others choose to emit it or flash it only when needed. Bioluminescent light is usually bluish green in color because most marine organisms show sensitivity to blue and green light and they cannot process colors such as yellow, violet and red. Blue and green light travels well through water. Human bioluminescence has been suspected for years, but until now the cameras required to detect such dim light sources took over an hour to capture a single image and so were unable to measure the constantly fluctuating light from living creatures. While the practical applications of the discovery are hard to imagine, one can't help wondering what further surprises the human body has in store for us. If someone asked you to name a living thing that glows, there is a high chance you will say fireflies or glow worms. Your mind could also rush towards deep sea creatures such as jellyfish or

anglerfish which are famous for their bioluminescence abilities i.e. the ability to produce their own light through a chemical reaction within their bodies. Now, what if we told you that you did not really need to go that far because we human beings, all of us, glow too? Yes, albeit in extremely small quantities at levels that rise and fall during the day, we do have same ability to glow. Actually, human bodies do emit light but it is 1,000 times less intense than the levels to which our naked eyes are sensitive. In simple terms, human bioluminescence in visible light exists, it's just too dim for our weak eyes to pick up on. Scientists have been able to comment on that too. In scientific terms, the glow comes from chemical reactions within our bodies. These chemical reactions besides generating energy and producing heat also produce free radicals – atoms or molecules that have a lone, isolated electron. That makes these radicals highly reactive setting off a series of energetic chemical reactions as they interact with various fats and proteins in our cells. The glow is produced when these reactions involve fluorophores – molecules that give off photons (elementary particles of light).

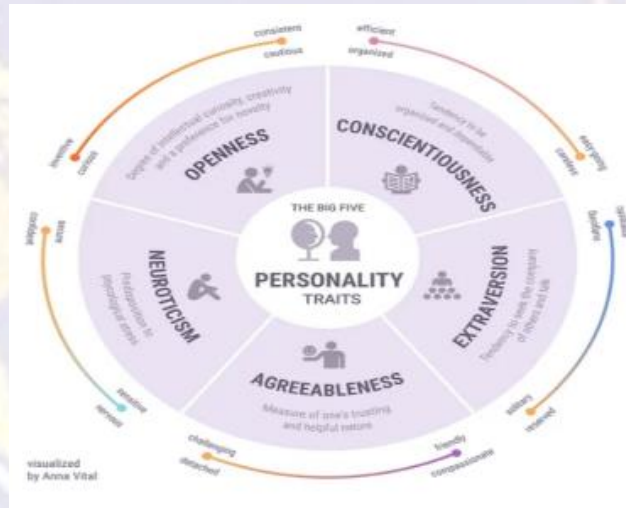
23. Psychology and Sports

- Jiya Thakur (Class 12th Bio)

Introduction: These days sports competitions are very tough. Players are using best techniques and training methods for better results. Even then they are not satisfied by their results. Sometimes the athletes went under stress and cannot focus on the game. Here the importance of Psychology in sports was realised to give best possible results of players.

Concept of Psychology: Psychology is the scientific study of mind and behavior. Its subject matter includes the behavior of humans and nonhumans, both conscious and unconscious phenomena, and mental processes such as thoughts, feelings, and motives. According to Crow

(b) Big Five Personality Classification: Big Five Personality Classification model was given by Paul Costa and Robert McCrae. According to Big Five theory, the personality depends upon five dimensions or traits referred as 'Ocean'.

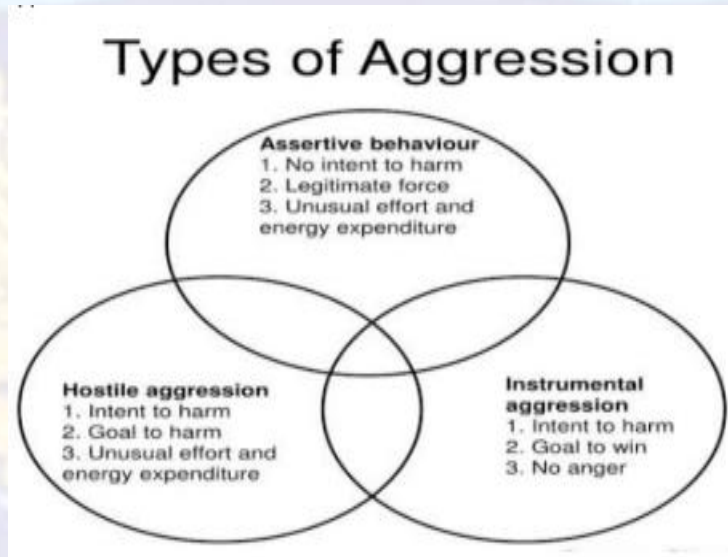


2. Motivation: Motivation is a kind of inner urge to achieve goals. It is a kind of inner force which energizes the person to make constant effort. It is also called as "Drive to Stive". Motivation plays a crucial role in physical activity as it drives individuals to achieve optimal levels of physical fitness and work capacity. There are two types of motivation:



3. Aggression: The term aggression refers to a range of behaviour that can result in both physical and psychological harm to own, others or objects in the environment. However, in sports aggression is a characteristic that can have many negative as well as positive effects on performance. Some sports psychologist agrees that aggression can

improve performance. This is called an assertive behaviour, where player plays within the rules of the game or sport at a very high intensity and has no intention to harm his opponent.



Psychological Attributes in Sports: Psychological attributes relate to the mental equilibrium of individuals embedded in their social interactions. Participation in games improves the behaviour and psychological factors to great extent. It boosts the psychological attributes of the individual like boosting or improving the self-esteem, mental imagery, self-talk, goal setting, happy feeling etc.

Conclusion: In conclusion, sports psychology can be used to enhance an athlete's performance by helping with stress management, increasing motivation, anxiety control, mental toughness, etc. It also helps with injury rehabilitation, team building, burnout, career transition, etc.

Sketches by Gargi Laad (Class – 12th Commerce)



Sketches by Vaishnavi Sharma (Class – 10th E)

