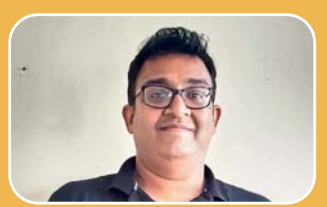


THE LEARNING CANVAS

Gone are the days of rote learning! **STEAM (STEM with Art) education** is a learning technique that provides children with deep concept understanding. Times NIE brings to you all the skill sets – be it in goal setting, career decisions, critical thinking or boosting your personality with good communication – that have been designed by our experts

Step up: Figure Math of a Minaret



Young explorers make a journey to 'Isar Lat' or 'Swargasuli' in Jaipur along with Abhinav Singhal, a STEM catalyst and innovator, who is committed to revolutionise education through experiential learning and 'Bookless Schools'. Built by Sawai Ishwari Singh in the year 1749, the monument is a treasure trove of heritage and knowledge. Check it out...

Hello, young explorers! We're back with our latest 'Education through Monuments' journey, and this time we're unravelling the scientific mysteries of Isar Lat in Jaipur. This isn't just any old minaret; it's a treasure trove of STEM learning!

The story of a minaret

The monument, known as Isar Lat or Swargasuli, was built in 1749 by a king named Sawai Ishwari Singh. He built it to celebrate his big win in a battle against the armies of Mewar and the Marathas.

As we ascended...



Our exploration began with a fascinating physics concept: **the Center of Mass**. This is crucial for tall structures like Isar Lat. As we ascended, we

noticed the minaret becoming narrower. Why? Because a smaller cross-sectional area higher up means more weight is concentrated at the bottom, lowering the center of mass and giving Isar Lat its remarkable stability.

Experiment time

To grasp this concept, we conducted an experiment with two glasses of water – one with a floating lemon and the other with a sinking stone. When tilted, the glass with the stone (representing a lower center of mass) remained stable, much like Isar Lat, while the lemon glass tipped over due to its higher center of mass. A simple yet eye-opening demonstration!

Our next discovery was inside Isar Lat itself – ramps instead of stairs. This architectural choice is an example of a simple machine, making it easier to climb.

Let's step up



To compare, we asked students to climb a multi-level parking lot carrying school bags using both stairs and a ramp. The result? Climbing stairs was exhausting, but the ramp was a breeze, demonstrating the efficiency of this simple machine in action.

Time for Trigonometry

Now the challenge was can we find the height of Isar Lat on our own and here comes our innovative homemade gadget – a protractor, a straw, string, and a small weight. Here's the fun part: we used it to figure how tall Isar Lat is, like real architects! We looked through the

What is centre of mass?

Imagine you have a toy made up of different parts, like a robot with arms, legs, and a head. The center of mass is like a special point inside the toy where, if you put your finger, the whole toy would balance perfectly. Now, think about how the toy would tip over if you tried to balance it on just one leg or arm.

That's because the weight, or mass, is not evenly spread out. But if you find that special point, the center of mass, and balance the toy on it, it stays upright. So, the center of mass is the point where the mass of an object is perfectly balanced. It's helpful to think about when you want to know how something will move or balance.

straw at the very top of Isar Lat and found the angle we were looking up at. This angle is super important in trigonometry and it's called the angle of inclination. Now, here's where the magic of math comes in. We measured how far we were standing from the base of Isar Lat. In trigonometry, there's this cool thing called 'tangent' of the angle (we just say 'tan' for short). It's a way to compare two sides

of a right triangle. For us, the tan of our angle of inclination was equal to the height of Isar Lat divided by our distance from it.

So, by knowing our angle and how far we were from the minaret, we could use the tan to figure out the height of Isar Lat! It's like solving a mystery with math. This experiment showed us how we can use a simple formula, $\tan(\text{angle}) = \text{height/distance}$, to find out something really big, just by measuring a small angle from where we stand. This activity made a math concept super clear and showed how it is used in real life.

– The writer is cofounder, Class24, an EdTech company, and works with schools across India.

Questions for expert? Send them to toinie175@gmail.com

CAREER

AI: The world is talking about it. Are you too?



In today's ever-evolving technological landscape, being AI-literate and possessing digital skills is indispensable for students. AI has become a pervasive force shaping various industries and aspects of daily life. Digital literacy is important not only for career readiness but also for educational and social success. Let's take a look at a few of the many ways in which cultivating AI literacy and digital skills is crucial for students:

FUTURE-READY WORKFORCE: As industries increasingly integrate AI technologies, a workforce well-versed in AI and digital skills becomes essential. Students equipped with these abilities are better positioned for future job markets that demand proficiency in handling advanced technologies.

FACILITATES PROBLEM-SOLVING AND CRITICAL THINKING: AI literacy fosters problem-solving skills and critical thinking. Understanding how AI works enables students to analyse complex issues, identify opportunities for automation, and develop innovative solutions, thereby enhancing their analytical abilities. It sharpens their mind and strengthens their intellectual muscles.

IMPROVES ETHICAL AWARENESS: AI comes with ethical considerations. Students with AI literacy are better equipped to understand the ethical implications of AI applications. This awareness is crucial for responsible and ethical decision-making in various fields.

ENABLES GLOBAL CONNECTIVITY: Digital skills enable students to connect with peers and resources globally. Online collaboration, communication, and the ability to navigate digital platforms facilitate a more connected and collaborative learning experience.

PROVIDES ENTREPRENEURIAL OPPORTUNITIES: AI literacy opens doors to entrepreneurial opportunities. Students can leverage AI technologies to develop innovative solutions, create startups, and contribute to the entrepreneurial ecosystem.



Colleges that offer courses with a focus on AI

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT), USA: Master of Science in Electrical Engineering & Computer Science with a focus on AI

STANFORD UNIVERSITY, USA: Master of Science in Computer Science – AI Track

CARNEGIE MELLON UNIVERSITY, USA: Master of Science in Computer Science – AI Specialization.

UNIVERSITY OF OXFORD, UK: (School of Kinesiology)

UNIVERSITY OF TORONTO, CANADA: Master in Robotics, Systems, and Control (focus on AI and Machine Learning)

NATIONAL UNIVERSITY OF SINGAPORE (NUS), SINGAPORE: Master of Science in Computer Science with a focus on AI

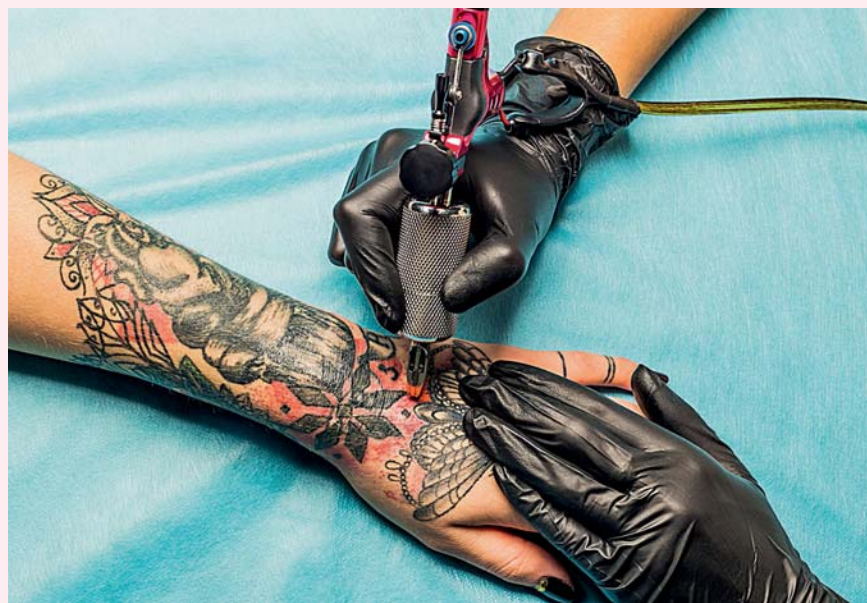
TSINGHUA UNIVERSITY, CHINA: Master of Computing (Artificial Intelligence)

INDIAN INSTITUTES OF TECHNOLOGY (IITS), INDIA: Master of Science (Computer Science) – Specialization in Artificial Intelligence

UNIVERSITY OF MELBOURNE, AUSTRALIA: Master's in Robotics, Cognition, Intelligence

DIFFERENT MEDIUMS

BODY ART – LANGUAGE SANS WORDS



IN THE DIVERSE WORLD OF BODY ART, TATTOOS STAND OUT AS A UNIQUE FORM OF EXPRESSION, SILENTLY CONVEYING STORIES, BELIEFS, AND EMOTIONS

Sometimes referred to as the 'sign language of the skin', tattoos have evolved from ancient traditions to modern art forms. Tattooing has been an integral part of human culture for thousands of years. From the tribal markings of ancient civilizations to the symbolic tattoos of sailors and warriors, these markings have served as rites of passage, status symbols, and even forms of punishment.

Nature-inspired tattoos: These designs, often featuring flora and fauna, symbolize life, growth, and resilience. They reflect connection with nature and can represent personal growth or transformation.

Portrait tattoos: Serv-

ing as eternal memorials, portrait tattoos are heartfelt tributes to loved ones, capturing their essence, and keeping their memory alive.

Abstract and geomet-

ric: Trendy and visually striking, these tattoos can symbolise complex philosophical ideas or aesthetic preferences, offering a glimpse into the wearer's inner world.

THE UNSPOKEN LANGUAGE

Each tattoo has a story, a hidden meaning that might be apparent only to the individual. In many cultures, tattoos are a crucial part of heritage and identity. They can connect individuals to their roots, traditions, and ancestral stories. The growing acceptance of tattoos has played a role in breaking down stereotypes and stigmas associated with body art, leading to a more open and inclusive view of personal expression.

WORD DROPPING

HEARD OF MNEMONICS?

A mnemonic, also known as a memory aid, is a tool that helps you remember an idea or phrase with a pattern of letters, numbers, or relatable associations. Mnemonic devices include special rhymes and poems, acronyms, images, songs, outlines, and other tools. Mnemonic (pronounced ni-mon-ik) is derived from the Greek phrase mimn skesthai meaning to "remember." Examples of mnemonics:

- Images: Images can be much easier to remember than big chunks of information or large passages of text, which makes them excellent mnemonic devices.
- Acronyms: An acronym is a



word or phrase formed by using the first letter(s) of the items you want to remember. They can make fantastic mnemonic devices because they allow us to condense multiple things down into one easy-to-remember phrase!

- Chunking: Chunking or grouping information works by organizing information into easily learned groups, phrases, words, or numbers.

FUN TRIVIA

10 COUNTRY NICKNAMES YOU SHOULD KNOW

- **PHILIPPINES** – The Pearl of the Orient Seas
- **THAILAND** – Land of Smiles
- **SRI LANKA** – Pearl of the Indian Ocean
- **SOUTH KOREA** – Land of the Morning Calm
- **MONGOLIA** – Land of Blue Sky
- **JAPAN** – Land of the Rising Sun
- **FINLAND** – Land of Thousand Lakes
- **ENGLAND** – Land of Hope and Glory
- **CANADA** – The Great White North
- **PERU** – Land of the Incas

ABBREVIATION VS ACRONYM

WHAT'S THE DIFFERENCE?

WHAT IS AN ABBREVIATION?

Abbreviation is the umbrella term for a handful of different types of shortened words and phrases like acronyms and initialisms, which we'll elaborate on later. There are a few ways abbreviations can be made: you can use only the first few letters, and omit the rest, like in cont. instead of continued or Dec. instead of December. Sometimes the middle of the word is omitted instead, like when using Mr. in place of mister.



WHAT IS AN ACRONYM?

An acronym is a shortened form of a phrase. It's formed by using the first letters of the words that make up the phrase. Consider the following examples:

- NASA = National Aeronautics and Space Administration

- Radar = Radio Detecting and Ranging
- Scuba = Self-contained Underwater Breathing Apparatus

CONCLUSION

Any shortened form of a word is an abbreviation, for example, etc. for etcetera and Oct for October; but acronyms are special kinds of abbreviations, such as ROFL (rolling on the floor laughing), that can be pronounced as words. This makes them a subset of abbreviations. All acronyms are abbreviations, but not all abbreviations are acronyms.