PARAM SCIENCE MAGAZINE

"Time is a measure of change, and change is the fundamental quality of the universe."
– Brian Greene

JAN 2023 SCIENCE DAYS

International World Braille Day: 4th Jan
International Day of Education: 24th Jan
World Leprosy Day: 30 Jan

Birthdays!

Satyendra Nath Bose: 1st Jan 1894
Rudolf Clausius: 2nd Jan 1822
Stephen Hawking: 8th Jan 1942
Edward Teller: 15th Jan 1908

As 2022 creeps to an end, we chose an interesting topic for this month's issue. Time is a fundamental concept that has fascinated humans for centuries. It has played a major role in shaping human society thought, and culture. From clocks, timelines, time travel, equations and pop culture allusions, a sneakpeek of it all. Hope you enjoy reading as much as we did writing it.

A second isn't what you think it is. Scientifically, it's not defined as 1/60th of a minute, but as "the duration of 9,192,631,770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the caesium 133 atom"

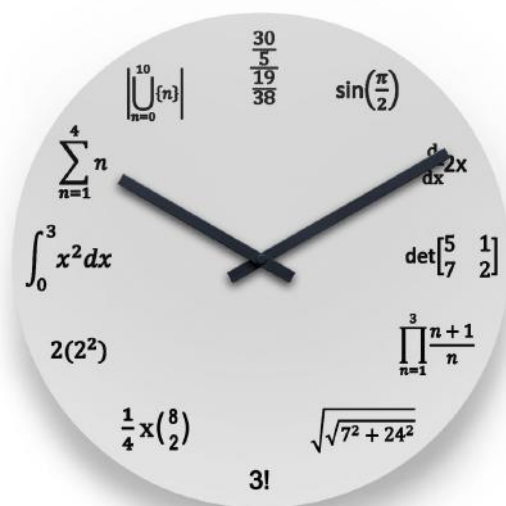Have a good time reading this issue!

https://en.wikipedia.org/wiki/Portal:Physics/Anniversaries

CRAZY CLOCKS

Math & Science in Clock labelling

<<< Can you read the time on the 3 clock in less than 3 seconds?

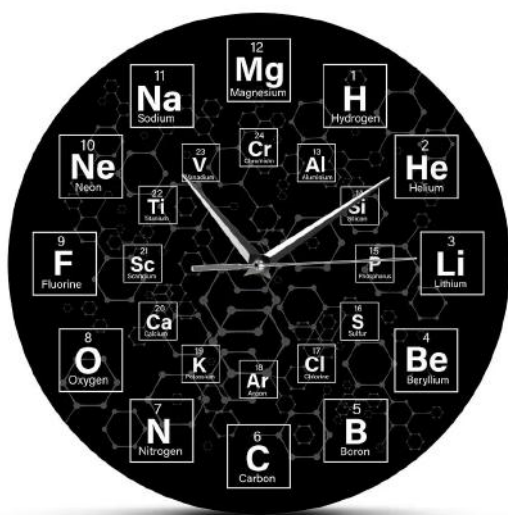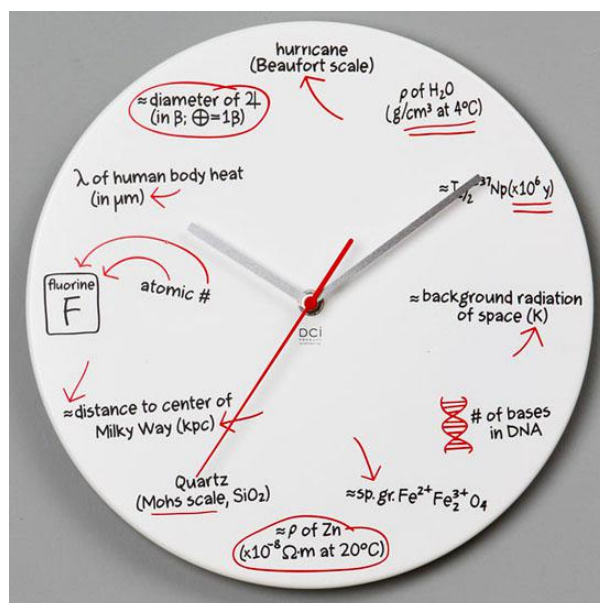This is why you learnt all that math in college >>>

<<< Get the pun? Periodic clocks!

I should have had this in my exam hall >>>

CRAZIER CLOCKS

Math and Science in Clock Design

Hyperbola Clock : This beautiful clock takes advantage of the fact that if you place a diagonal line on a rotating base, it'll trace out a hyperbola shape in 3D. The hours are marked on the clock, and whichever one the hand is pointing to will show you the nearest hour.

Source : https://mathsgear.co.uk/products/hyperbola-clock
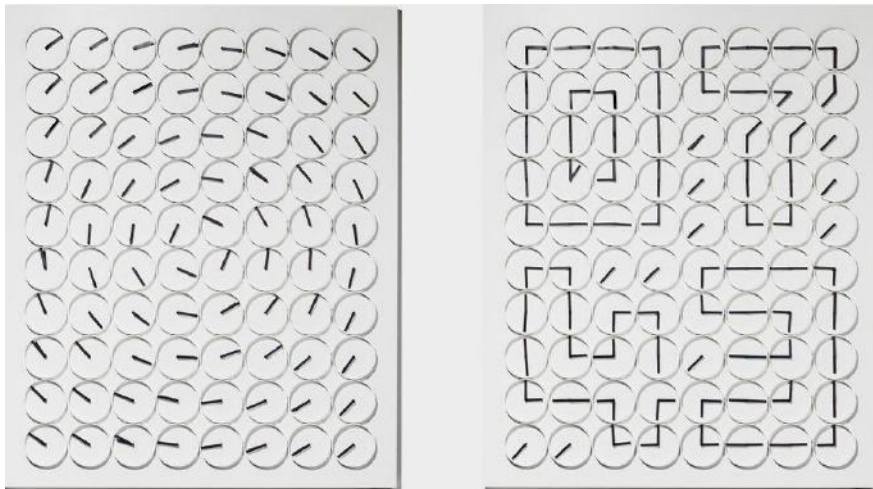
Making digital time out of analog clocks! It may seem crazy but it is a simple illusion of making the hands move to thr right place at the right time.

Source : https://www.theverge.com/2015/6/23/8830093/a-million-times-digital-analog-clock-art

Clocks made out of Nixie Tubes. This age old technology is truly is beauty. A Nixie tube, or cold cathode display, is an electronic device used for displaying numerals or other information using glow discharge.
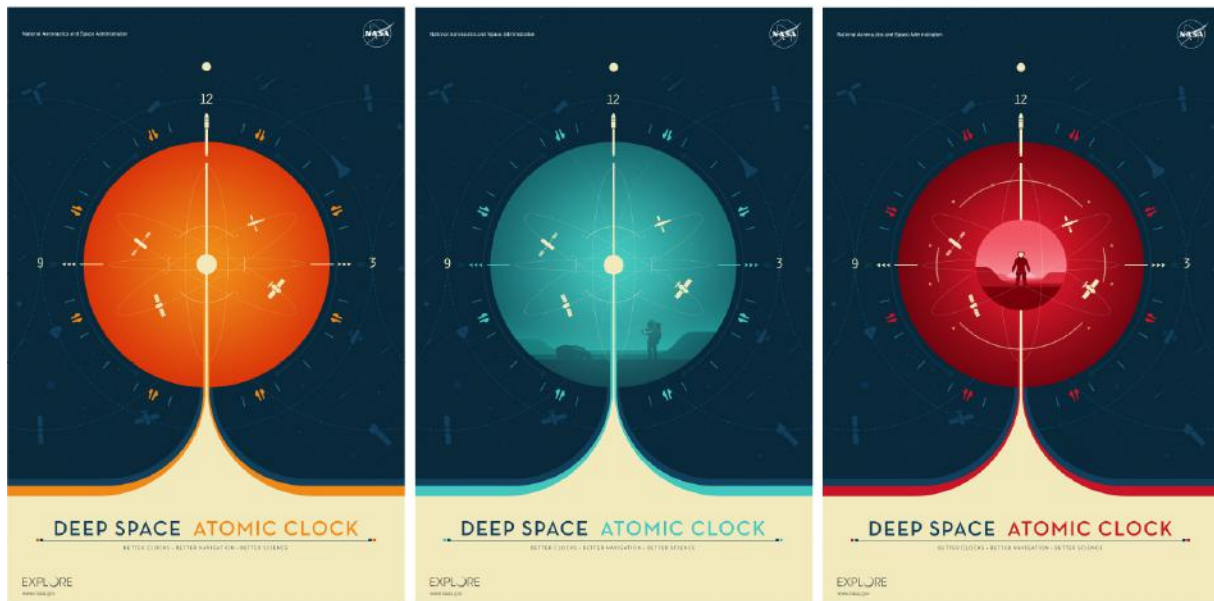
Source : https://crystal.uta.edu/~burns/project_nixieclock.html

RARE CLOCKS

Clocks, you would have seen or heard off

Atomic Clock : An atomic clock is the most accurate type of timepiece in the world, designed to measure time according to vibrations within atoms.

You'll find the most accurate clock at the National Institute of Standards and Technology in Boulder, Colorado. The clock keeps time by measuring the vibration of a single aluminum ion, and should remain accurate for 33 billion years.
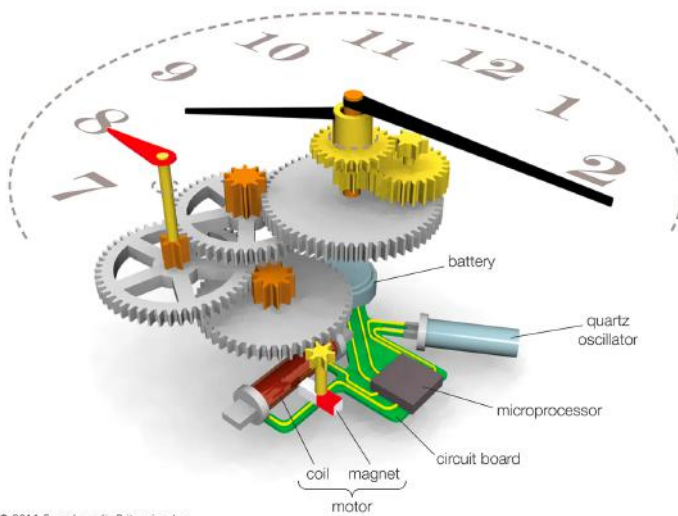
The oldest known sundial is a stone slab from ancient Egypt, which dates back to around 1500 BCE.
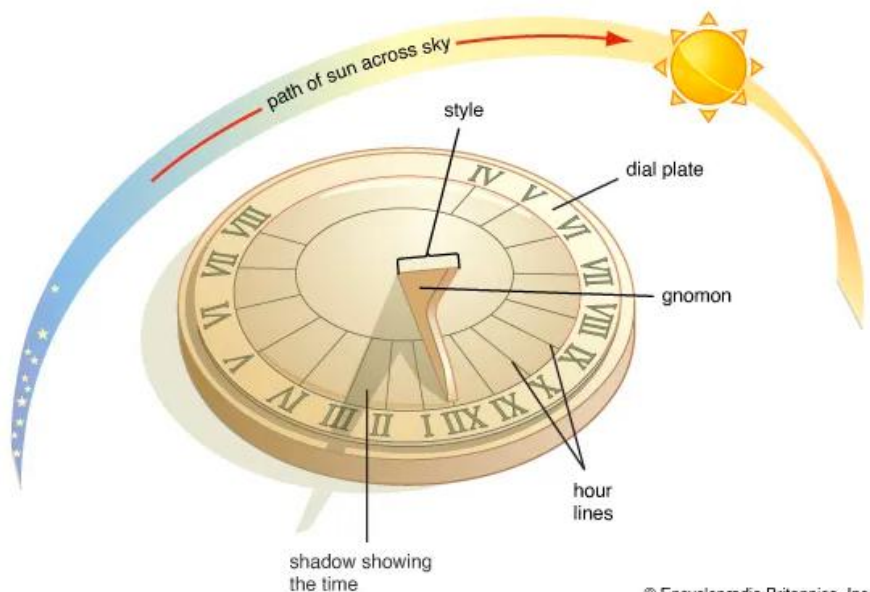
CLOCK WORKING

From electric to digital to mechanical

If this page is too basic for you, just google it!

© 2011 Encyclopædia Britannica, Inc.

An electric clock uses an electric motor and an electronic oscillator to drive the clock hands and other mechanisms. The oscillator generates a precise frequency that determines the motor's speed, which controls the clock hands' movement. The oscillator is often a crystal oscillator using a quartz crystal to generate a stable pulse. The clock also includes a power source and a control circuit.

Circuit diagram of a digital clock. It may look complex but it is super easy to build. Stay tuned as we will soon be letting anyone and everyone build their own digital clock right at home.

PS : Honestly, you just have to solder a few components together.
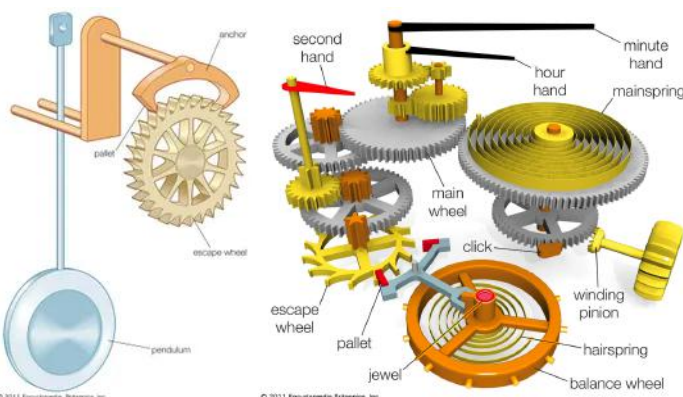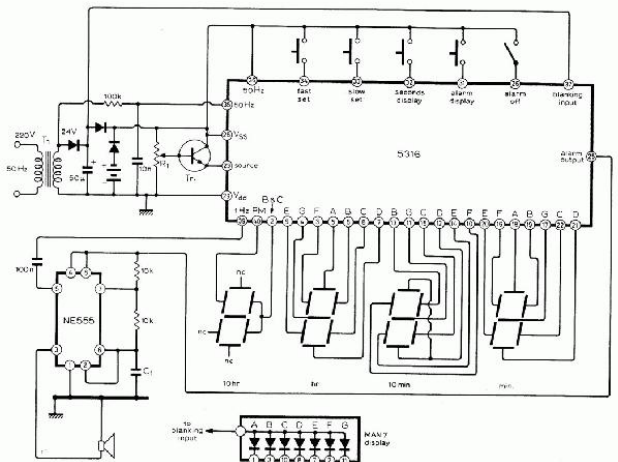
© 2011 Encyclopædia Britannica, Inc.

The mechanical clock is the true classic. The pendulum forms the core as its periodic swing gives the clock its periodic tick-tock. This allows the clock to count out one second. The gears do the rest of the work and move the different hands and different speeds.

TIME TRAVEL
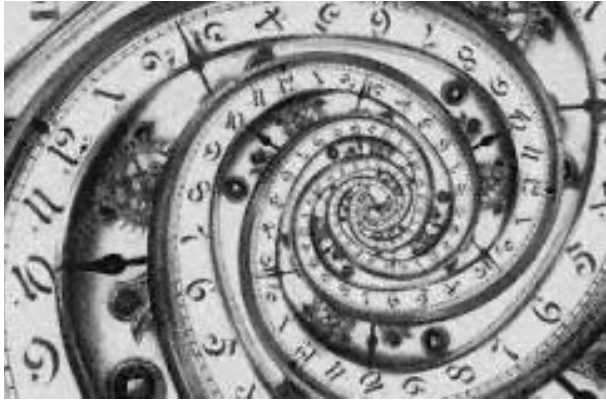
A time loop, also known as a temporal loop or a time loop paradox, is a hypothetical situation in which a person or event becomes trapped in a repeating sequence of events, reliving the same moments over and over again.

"Once confined to fantasy and science fiction, time travel is now simply an engineering problem."

–Michio Kaku
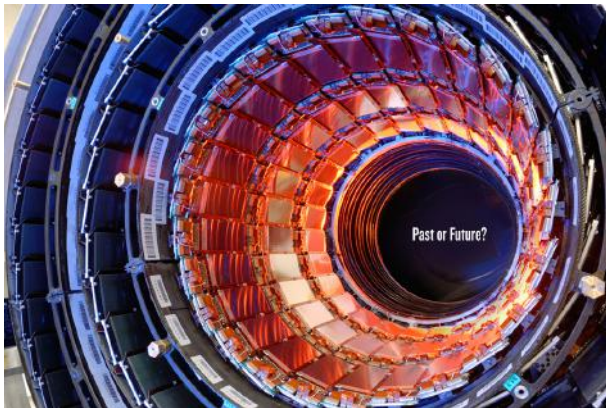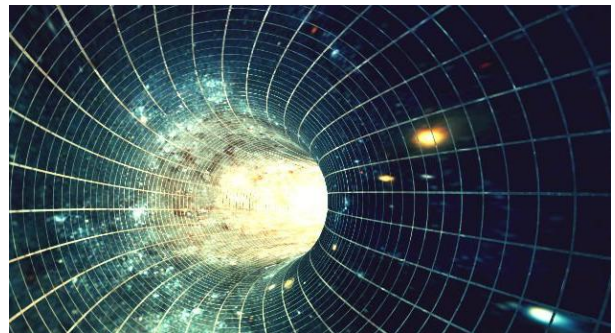
Hypothetical superluminal particles called tachyons have a spacelike trajectory, and thus can appear to move backward in time, according to an observer in a conventional reference frame.

Source: https://plato.stanford.edu/entries/time-travel-phys/
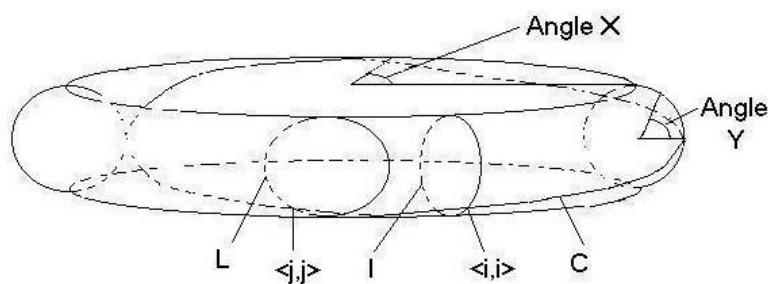
TIME TRAVEL

PARADOXES

Grandfather Paradox
If you go back in time and kill your grandfather before your parents were born then how did you exist in the first place?

Bootstrap Paradox
If you travelled back in time before Newton discovered gravity and you taught him about gravity, then who discovered gravity – you or newton?

Polchinski's Paradox
Suppose you enter a wormhole and travle back to the moment when you were about to enter and prevent yourself from entering in the first place.

Predestination Paradox
The predestination paradox is a situation in which a person traveling back in time with the intention to change the outcome, becomes part of past events. Also, he is more likely to have a chance to cause the initial events which inspired the person to travel back in time in the first place.

How time travel works in popular movies.

Groundhog Day

Harry Potter

A Christmas Carol

Looper

Back to the Future

Primer
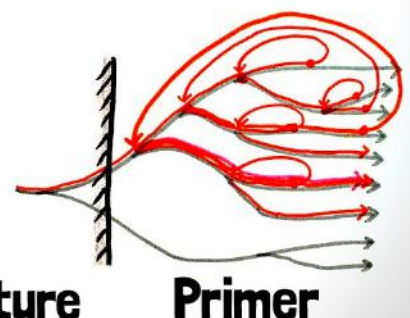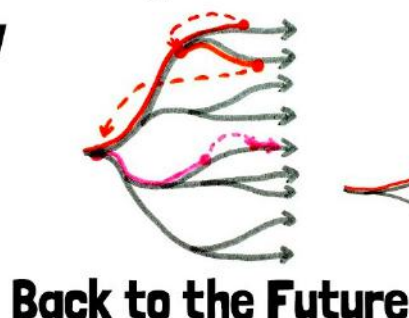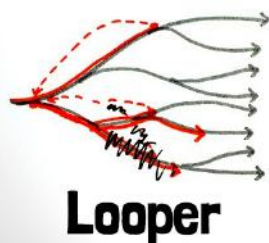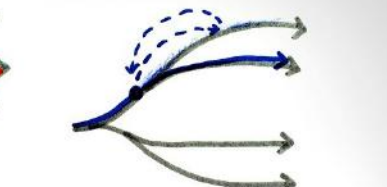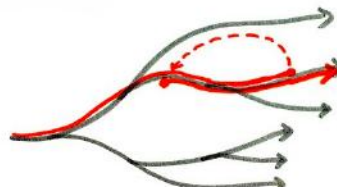
TIMELINE OF REALITY

BEGINNINGS

If we compressed 13.7 billion yearst into a year – with the Big Bang happening at 00:00:01 on 1 January – then the dinosaurs would be wiped out on 29 December, and modern humans would appear at 11:54pm. Christopher Columbus would sail across the Atlantic one second before midnight.
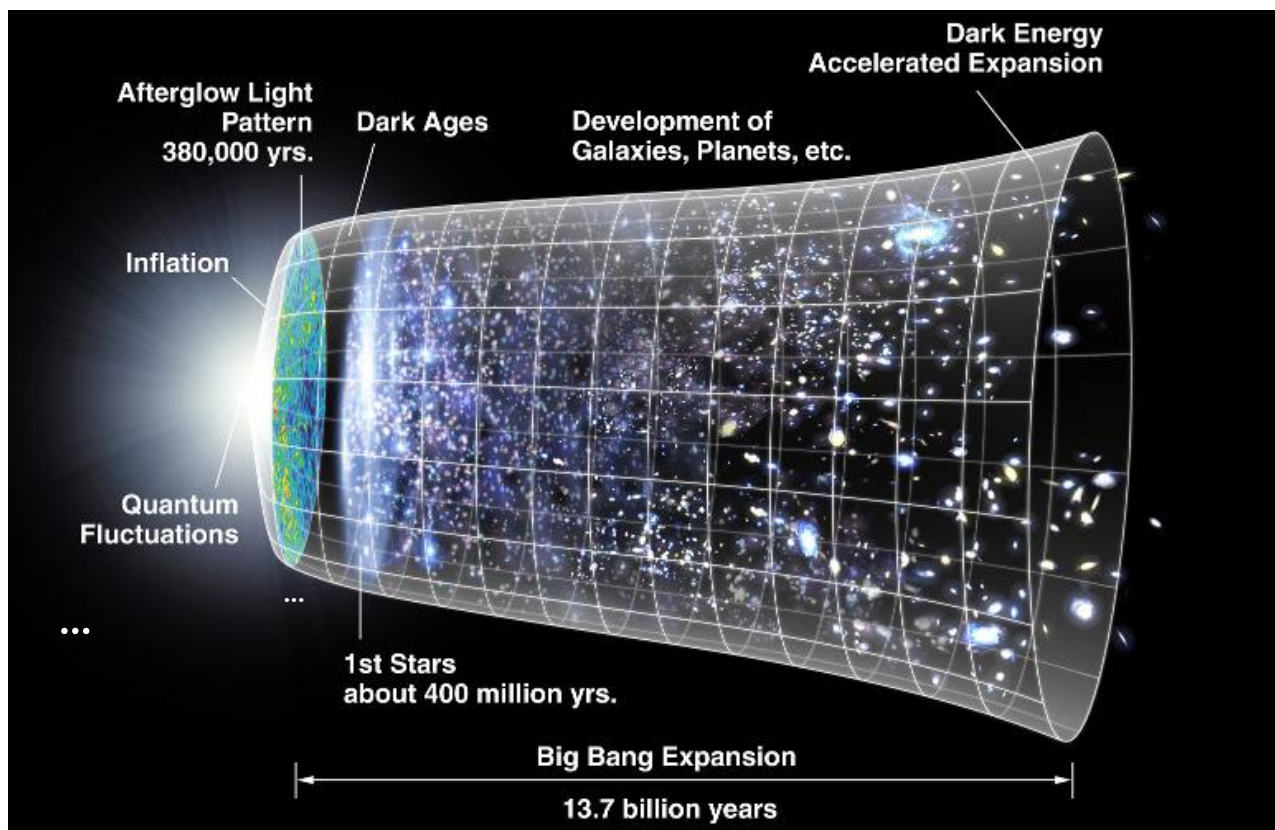
The oldest known object in the universe is a galaxy called z8_GND_5296. It's 13.1 billion years old – only about 700 million years younger than the universe.

Source: https://en.wikipedia.org/wiki/Big_Bang
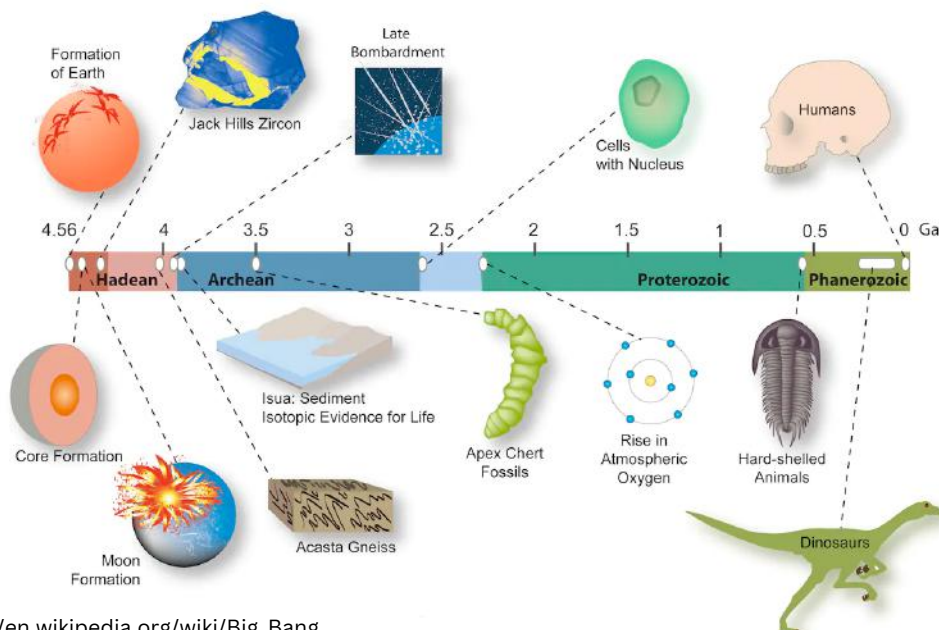
ANCIENT INDIAN TIME KEEPING

"Jantar Mantar" literally means "instruments for measuring the harmony of the heavens". It consists of 13 architectural astronomy instruments. The site is one of five built by Maharaja Jai Singh II of Jaipur, from 1723 onwards, revising the calendar and astronomical tables.The 4 distinct instruments within the observatory of Jantar Mantar in New Delhi: the Samrat Yantra, the Jayaprakash, Rama Yantra and the Misra Yantra.

The Konark temple is designed in the form of the chariot of the Sun god. It has 24 wheels and seven horses. Twelve wheels represent 12 months of the year. According to the Indian calendar, each month has a Shukla paksha and a Krishna paksha, so the other 12 wheels stand for them.

The wheels of the Konark Temple's chariot are divided into 8 parts representing 3 hours, which are further divided into halves representing 90 minutes. Within these sections, there are 30 beads representing 3 minutes each, allowing for tracking of time in increments as small as 3 minutes.

Ghatika Yantra – Time Measurement in Days of No Sunlight in Ancient India

Lagadha, the Vedic astronomer defines the Muhurta as: "A vessel which holds 50 palas of water is the measure adhaka. Four times this is the drona. This lessened by three kudavas(3/16 adhaka) is the volume equivalent of the length of one nadika of time" -Vedanga Jyotisha 24

ANCIENT INDIAN TIME

YUGAS AND ERAS

TIME THROUGH THE AGES AS SEEN BY THE SEERS

A Yuga Cycle is a cyclic age (epoch) in Hindu cosmology. Each cycle lasts for 4,320,000 years (12,000 divine years) and repeats four yugas (world ages): Krita (Satya) Yuga, Treta Yuga, Dvapara Yuga, and Kali Yuga.

As a Yuga Cycle progresses through the four yugas, each yuga's length and humanity's general moral and physical state within each yuga decrease by one-fourth

Where are we today?

Period		Divine Years	Solar Years
Kalpa		12,000,000	4,320,000,000
	Aadhi Sandhya	4800	1,728,000
1	Swayambhu Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
2	Swarochisha Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
3	Uttama Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
4	Tapas / Tamas Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
5	Raivata Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
6	Chakshusha Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
7	Vaivasvata Manvantara	852,000	306,720,000
	Chatur Yuga 1 to 27	324,000	116,640,000
	Chatur Yuga 28	12,000	4,320,000
	Krta Yuga	4800	1,728,000
	Treta Yuga	3600	1,296,000
	Dwapara Yuga	2400	864,000
	Kali Yuga	1200	432,000
	Chatur Yuga 29 - 71	516,000	185,760,000
	Manvantara Sandhya	4800	1,728,000
8	Savarni Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
9	Daksa Savarni Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
10	Brahma Savarni Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
11	Dharma Savarni Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
12	Rudra Savarni	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
13	Raucya or Deva Savarni Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000
14	Indra Savarni Manvantara	852,000	306,720,000
	Manvantara Sandhya	4800	1,728,000

	Divine Years	Solar Years
Chatur Yuga	12,000	4,320,000
Krta Yuga	4800	1,728,000
Yuga Sandhya	400	144,000
Yuga	4000	1,440,000
Yuga Sandhya	400	144,000
Treta Yuga	3600	1,296,000
Yuga Sandhya	300	108,000
Yuga	3000	1,080,000
Yuga Sandhya	300	108,000
Dwapara Yuga	2400	864,000
Yuga Sandhya	200	72,000
Yuga	2000	720,000
Yuga Sandhya	200	72,000
Kali Yuga	1200	432,000
Yuga Sandhya	100	36,000
Yuga	1000	360,000
Yuga Sandhya	100	36,000

There are 71 Yuga Cycles (306,720,000 years) in a manvantara, a period ruled by Manu, who is the progenitor of mankind. There are 1,000 Yuga Cycles (4,320,000,000 years) in a kalpa, a period that is a day (12-hour day proper) of Brahma, who is the creator of the planets and first living entities. There are 14 manvantaras (4,294,000,000 years) in a kalpa with a remainder of 25,920,000 years assigned to 15 manvantara-sandhyas (junctures), each the length of a Satya Yuga (1,728,000 years). A kalpa is followed by a pralaya (night or partial dissolution) of equal length forming a full day (24-hour day). A maha-kalpa (life of Brahma) lasts for 100 360-day years of Brahma, which lasts for 72,000,000 Yuga Cycles (311.04 trillion years) and is followed by a maha-pralaya (full dissolution) of equal length.

ANCIENT INDIAN TIME
UNITS OF TIME

SMALLEST UNTS OF TIME IN THE SCRIPTURES

Smallest units of time used in the vedas

Unit	Definition	Value in SI units
paramāṇu	base unit	≈ 26.3 µs
aṇu	2 paramāṇu	≈ 52.67 µs
trasareṇu	3 aṇu	≈ 158 µs
truṭi	3 trasareṇu	≈ 474 µs
vedha	100 truṭi	≈ 47.4 ms
lava	3 vedha	≈ 0.14 s
nimeṣa	3 lava	≈ 0.43 s
kṣaṇa	3 nimeṣa	≈ 1.28 s
kāṣṭhā	5 kṣaṇa	≈ 6.4 s
laghu	15 kāṣṭhā	≈ 96 s (1.6 min)
danda (nadika)	15 laghu	≈ 1.44 ks (24 min)
muhūrta	2 danda	≈ 2.88 ks (48 min)
ahorātram(sidereal day)	30 muhūrta	≈ 86.4 ks (24 h)
masa (month)	30 ahorātram	≈ 2,592 ks
ritu (season)	2 masa	≈ 5,184 ks
ayana	3 ritu	≈ 15,552 ks (6 mth)
samvatsara (year)	2 ayana	≈ 31,104 ks
ahorātram of Deva		

Surya Siddhanta

Unit	Definition	Value in SI units
truti	base unit	≈ 29.6 µs
tatpara	100 truti	≈ 2.96 ms
nimesha	30 tatpara	≈ 88.9 ms
kāṣṭhā	18 nimesha	≈ 1.6 s
kalā	30 kāṣṭhā	≈ 48 s
ghatika	30 kalā	≈ 1.44 ks (24 min)
muhūrta (kṣaṇa)	2 ghatika	≈ 2.88 ks (48 min)
ahorātram(sidereal day)	30 muhūrta	≈ 86.4 ks (24 h)

Lunar Metrics

Unit	Definition	Equivalence
tithi (lunar day)	Time for 12° increase of longitudinal angle between Moon and Sun	≈ 1 day (varies 19–26 hours)
pakṣa (lunar fortnight)	15 tithis	≈ 15 days
māsa (lunar month)	2 pakṣas: śukla pakṣa during waxing moon; kṛṣṇa (dark) pakṣa during waning moon	≈ 30 days (29.5 days)
ṛitu (season)	2 māsas	≈ 60 days
ayanam	3 ṛitus	≈ 180 days
varsha (lunar year)	2 ayanams	≈ 360 days (354.36707 days)

MOVIETIME

THESE CHARTS SHOW MOVIE CHARACTER INTERACTIONS.
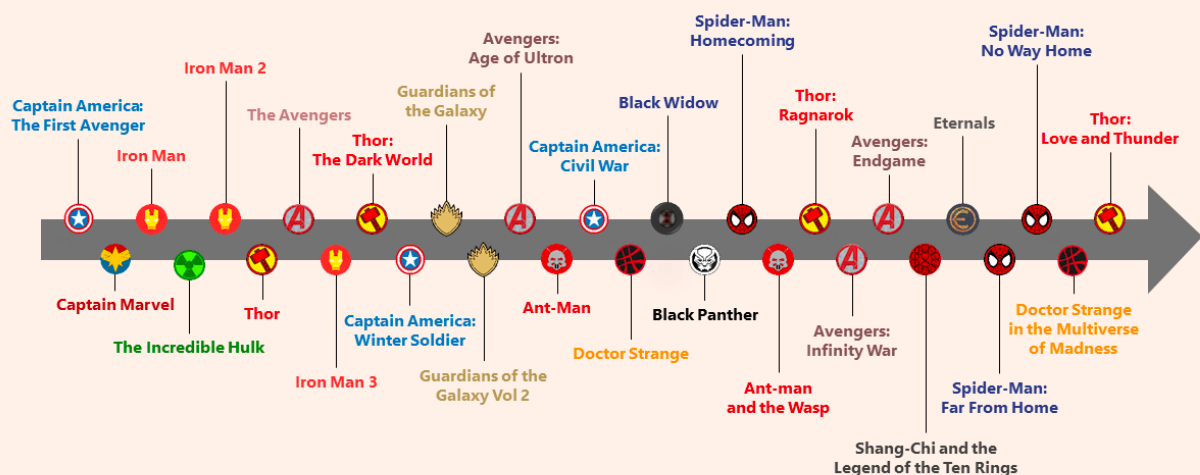THE HORIZONTAL AXIS IS TIME. THE VERTICAL GROUPING OF THE
LINES INDICATES WHICH CHARACTERS ARE TOGETHER AT A GIVEN TIME.

LORD OF THE RINGS

STAR WARS (ORIGINAL TRILOGY)

JURASSIC PARK

12 ANGRY MEN

PRIMER

MARVEL CINEMATIC UNIVERSE
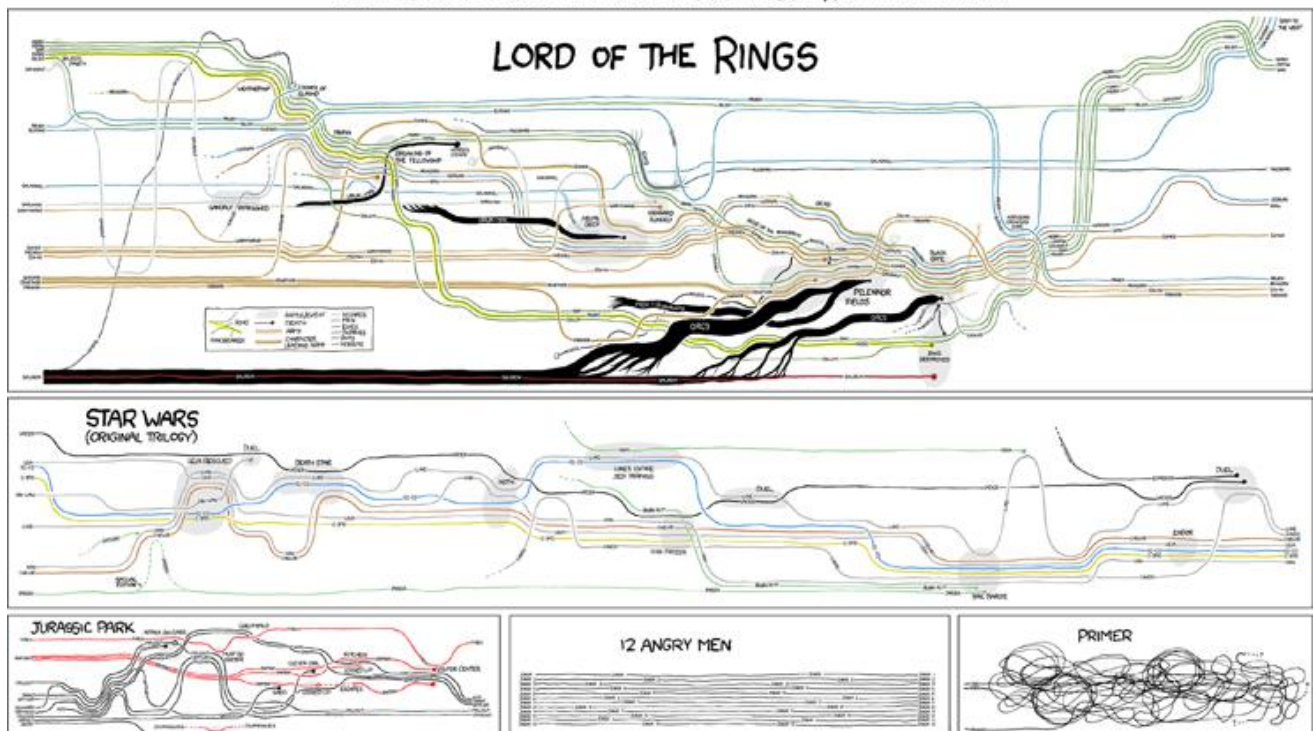
Timeline: How to Watch the Movies

Made with Office Timeline

Captain America: The First Avenger
Iron Man
Captain Marvel
The Incredible Hulk
Iron Man 2
The Avengers
Thor
Thor: The Dark World
Iron Man 3
Captain America: Winter Soldier
Guardians of the Galaxy
Guardians of the Galaxy Vol 2
Avengers: Age of Ultron
Captain America: Civil War
Ant-Man
Doctor Strange
Black Widow
Black Panther
Spider-Man: Homecoming
Thor: Ragnarok
Ant-man and the Wasp
Avengers: Infinity War
Avengers: Endgame
Shang-Chi and the Legend of the Ten Rings
Eternals
Spider-Man: Far From Home
Spider-Man: No Way Home
Doctor Strange in the Multiverse of Madness
Thor: Love and Thunder

MOVIETIME

FUTURISTIC MOVIE TIMELINE

Movie	Year
Clockwork Orange	1995
Escape from NY	1997
2001	2001
Freejack	2009
Postman	2013
Robocop	2015
Back To The Future 2	2015
The Running Man	2017
Rollerball	2018
Blade Runner	2019
Soylent Green	2022
Children of Men	2027
12 Monkeys	2028
Demolition Man	2032
V for Vendetta	2038
Event Horizon	2047
Minority Report	2054
Total Recall	2084
A.I.	2101
Alien	2122
The Black Hole	2130
Sleeper	2173
The Matrix	2199
Forbidden Planet	2220
The Fifth Element	2263
Zardoz	2293
Star Trek	2387
Logan's Run	2500
Idiocracy	2505
Barbarella	
Planet of The Apes	
Dune	

YOU ARE HERE

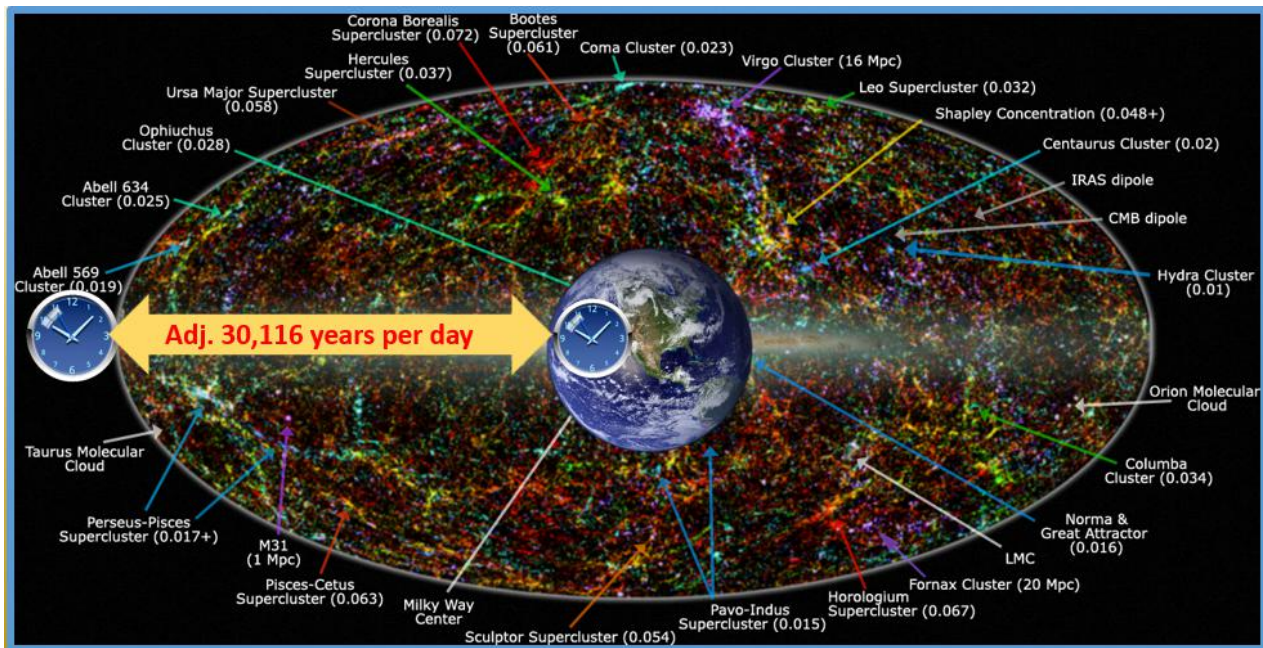1950 2000 2050 2100 2150 2200 2250 2300 2350 2400 2450 2500 beyond

TIME DILATION

THE FASTER YOU MOVE THROUGH SPACE
THE SLOWER YOU MOVE THROUGH TIME

Time dilation finds that time moves at different rates depending on where the observer is located. Such evidence reveals that time and space distance are not dependent on each other.

$$\Delta t' = \frac{\Delta t}{\sqrt{1 - v^2/c^2}}$$

$\Delta t'$ — The amount of time that has elapsed on Earth during the time Δt.

Δt — An amount of time, as measured on the satellite. Say, one second.

v — Velocity of the satellite (about 9,000 mph).

c — Speed of light (186,262 miles per second).

Time passes faster for your face than for your feet (assuming you're standing up). Einstein's theory of relativity dictates that the closer you are to the centre of the Earth, the slower time goes – and this has been measured. At the top of Mount Everest, a year would be about 15 microseconds shorter than at sea level.

This is a hidden sentence. If you read this then email us at contetn@paraminnovation.org with the code "SEENZONED" to win a prize.

EQUATIONS

The Planck time is the time required for light to travel a distance of 1 Planck length in vacuum, which is a time interval of approximately 5.39×10-44 s. No current physical theory can describe timescales shorter than the Planck time, such as the earliest events after the Big Bang.

Fact: There are more units of Planck time in one second than there have been seconds since the Big Bang almost 14 billion years ago.

$$Life = \int_{birth}^{death} (experience)\Delta time$$

Date / Time to be calculated		$=$ Year, Month, Day, Hour, Time Zone (+ ve East of Greenwich)
	x1	$= (367 \times \text{Year}) - 730\ 531.5$
	x2	$= \text{int}\left(7 \times \text{int}\left(\text{Year} + \left(\frac{\text{Month}-9}{12}\right)\right)/4\right)$
	x3	$= \text{int}(275 \times \text{Month}) + \text{Day}$
Days since Epoch	D^{days}	$= x1 + x2 + x3 + \left(\frac{\text{Hour}-\text{Time Zone}}{24}\right)$
Obliquity	$\eta°$	$= 23.439° - 0.000\ 000\ 4° \times D^{days}$
	η^{rad}	$= \frac{\pi}{180} \times E°$
Mean Anomaly $\otimes$	$M°$	$= 365.528° + 0.985\ 600\ 3° \times D^{days}$
	M^{rad}	$= \frac{\pi}{180} \times M°$
Mean Equatorial Longitude $\otimes$	$\gamma°$	$= 280.460° + 0.985\ 647\ 4° \times D^{days}$
Solar Ecliptic Longitude $\otimes$	$\lambda°$	$= \gamma° + 1.915° \times \sin(M^{rad}) + 0.020° \times \sin(2 \times M^{rad})$
	λ^{rad}	$= \frac{\pi}{180} \times \lambda°$
Solar Right Ascension	α^{rad}	$= \tan^{-1}\left(\frac{\sin(\lambda^{rad}) \times \cos(\eta^{rad})}{\cos(\lambda^{rad})}\right)$ if available, use atan2 function in Excel uses atan2(x,y) while most

d Displacement
v Velocity
t Time

v = d / t
t = d / v
d = v · t
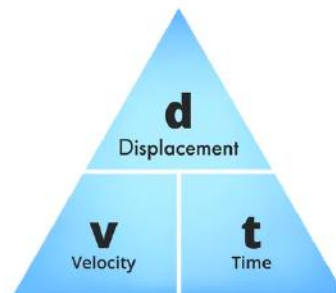
$$t = \frac{-v_o \pm \sqrt{v_o^2 - 4\left(\frac{1}{2}a\right)(-d)}}{2\left(\frac{1}{2}a\right)}$$

$$\Delta t' = \frac{\Delta t}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$T_c = 0.272 \cdot \frac{L_c A^{0.4}}{(D \cdot S_c^{0.2})}$$

$$T_c = 0.066 \cdot \left(\frac{L_c}{\sqrt{S_c}}\right)^{0.77}$$

$$T_c = 0.000003035 \cdot \left(\frac{L_c}{\sqrt{S_c}}\right)^{0.64}$$

$$T_c = 0.397 \cdot \left(\frac{L_c}{\sqrt{S_c}}\right)^{0.75} ST^{1.3}$$

$$T_c = 0.0014 \cdot \left(\frac{L_c}{\sqrt{S_c}}\right)^{0.79}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu}$$

$$T_c = T_{sheet} + T_{shallow} + T_{channel} \ ; \ T_{sheet} = \frac{0.0018 L_{sheet}^{0.6} \cdot n^{0.6}}{I^{0.4} \cdot S_w^{0.3}} \ ; \ T_{shallow} =$$

$$\frac{L_{shallow}}{3.6 C \sqrt{S_w}} \ ; \ T_{channel} = \frac{0.44 \cdot L_c \cdot n^{0.75}}{I^{0.25} A^{0.125} \cdot S_c^{0.375}}$$

$$T_c = 0.734 \cdot L_c^{0.841}$$

$$\text{STI} = \sqrt{(c\Delta t)^2 - (\Delta x)^2}$$

$$T_c = 0.00031 \cdot A^{0.1} L^{0.25} L_{ca}^{0.25} S_w^{-0.2}$$

$$T_c = 0.39\sqrt{A} + DD^2$$

EXHIBIT OF THE MONTH

ELEMENTAL CLOCKS

WATER AND LIGHT BASED INTRICATE CLOCKS

An outdoor time telling fountain. With precision it drops water in the shape of a clock showing the current time and date.

A beautiful outdoor model where the shadows show the time of day digitally. It has been designed by 'Architectural Prescription'.

SOLVE FAST

TIME THEMED PUZZLES


How do we measure fortyfive minutes using two identical wires, each of which takes an hour to burn? We have matchsticks with us. The wires burn non-uniformly. So, for example, the two halves of wire might burn in 10 minutes and 50 minutes respectively

The hour and minute hands are at equal distance from the 6 hour, what time will it be exactly?

The timepiece had no numbers, and it may have been rotated out of position. Also, the second, minute and hour hands had the same length (the hands are labeled A, B, C in the diagram). But it operated like a standard timepiece. What time was it?

Mind Your Decisions   Videos by Presh Talwalkar
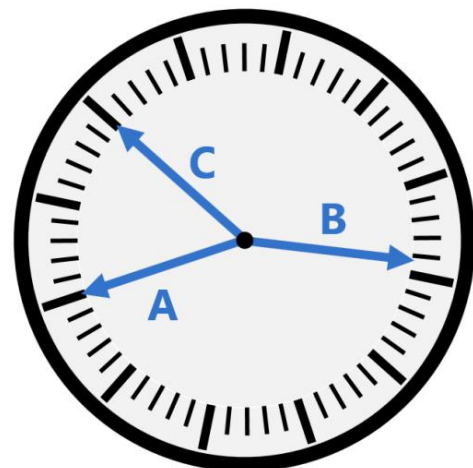
NEWS & LATEST RESEARCH

TIME TODAY

LATEST UPDATES OF OUR PURSUIT TO UNDERSTAND TIME

New Research reveals that the **animals that perceive time the fastest are those that are small, can fly, or are marine predators.**

Species such as blow flies and Dragon flies were able to detect changes at the highest rate, with vision that could handle 300hz (able to see changes 300 times a second), significantly faster than humans which can see at 65hz.

Source :
https://phys.org/news/2022-12-reveals-animals-fastest.html

Source :
https://phys.org/news/2022-12-billionths-billionth.html

Scientists in the Australian Attosecond Science Facility developed a novel interferometric **technique capable of measuring time delays with zeptosecond** (a trillionth of a billionth of a second) resolution

From 2035, **leap seconds will be abandoned for 100 years** or so and will probably never return.

Why do we have leap seconds?
Roll back to 1972, when the arrival of highly accurate atomic clocks laid bare the fact that days are not exactly 86,400 standard seconds long (that being 24 hours, with each hour comprising 3,600 seconds).

Source :
https://phys.org/news/2022-11-time-out-seconds.html

Source :
https://scitechdaily.com/time-might-not-exist-according-to-physicists/

Time might not exist at all, according to Physicists.
Developments in physics suggest the non-existence of time is an open possibility, and one that we should take seriously.

FACTS & SNIPPETS

Interesting tidbits about time

- 1 million seconds = about 12 days
- 1 billion seconds = about 32 years
- 1 million minutes ago was approximately 2 years ago
- 1 billion minutes ago was the year 114AD
- 1 million hours ago it was the dawn of the 20th century (1901)
- 1 billion hours ago was around the time we think the first modern humans walked (141k ya)
- 1 million days ago it was about 700BC
- 1 billion days ago was 2.7 million years BC

People massively underestimate the difference between a million and a billion in the context of time.

If time stopped all around you like in the movies, you would instantly go blind as light entering your eyes also stops.
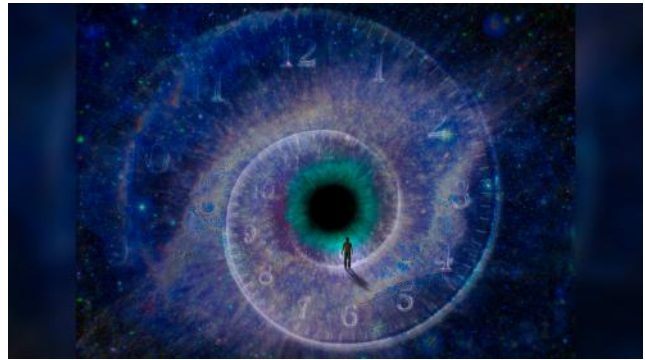
T-Rex vs Stegosaurus as shown in Jurrasic Park could never happen as they lived in different time periods.

Because light takes time to reach us, everything we see is in the past. The sun you can see out of the window is 8 minutes and 20 seconds old.

Cleopatra lived closer to us today than to the pyramids.

When the dinosaurs were alive, there were 370 days in a year. The Earth's spin is getting slower because the moon's gravity is acting as a drag, so days are getting longer, by about 1.7 milliseconds per century.
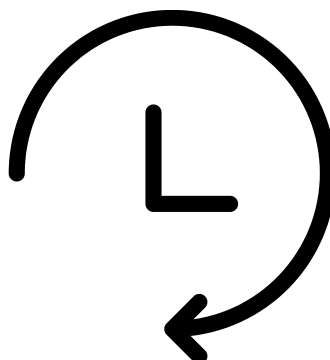
Oxford University is older than the Aztec empire

Time is now.

AROUND THE WORLD IN 24 HOURS

TIMEZONES
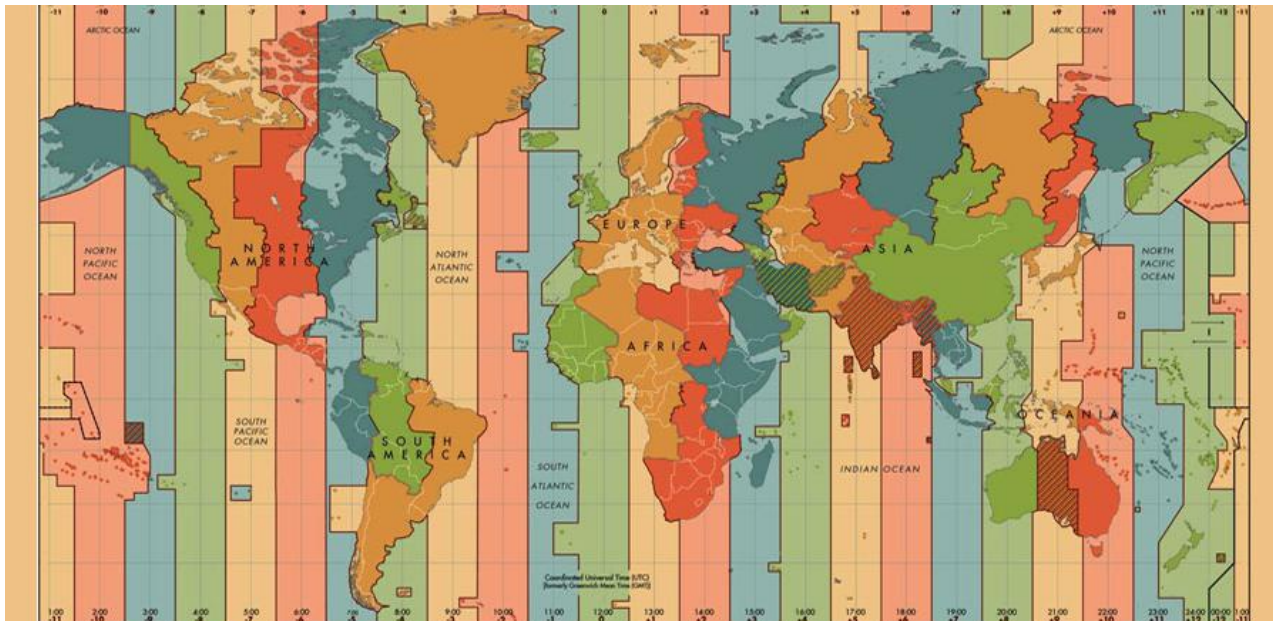
Country with most number of
- Time zones – France (12 time zones)
- Time zones in mainland – Russia (11 time zones)

India had two time zones (Calcutta and Bombay) in the past. In 1802, British astronomer John Goldingham at the East India Company established time in Chennai as GMT+5:30.
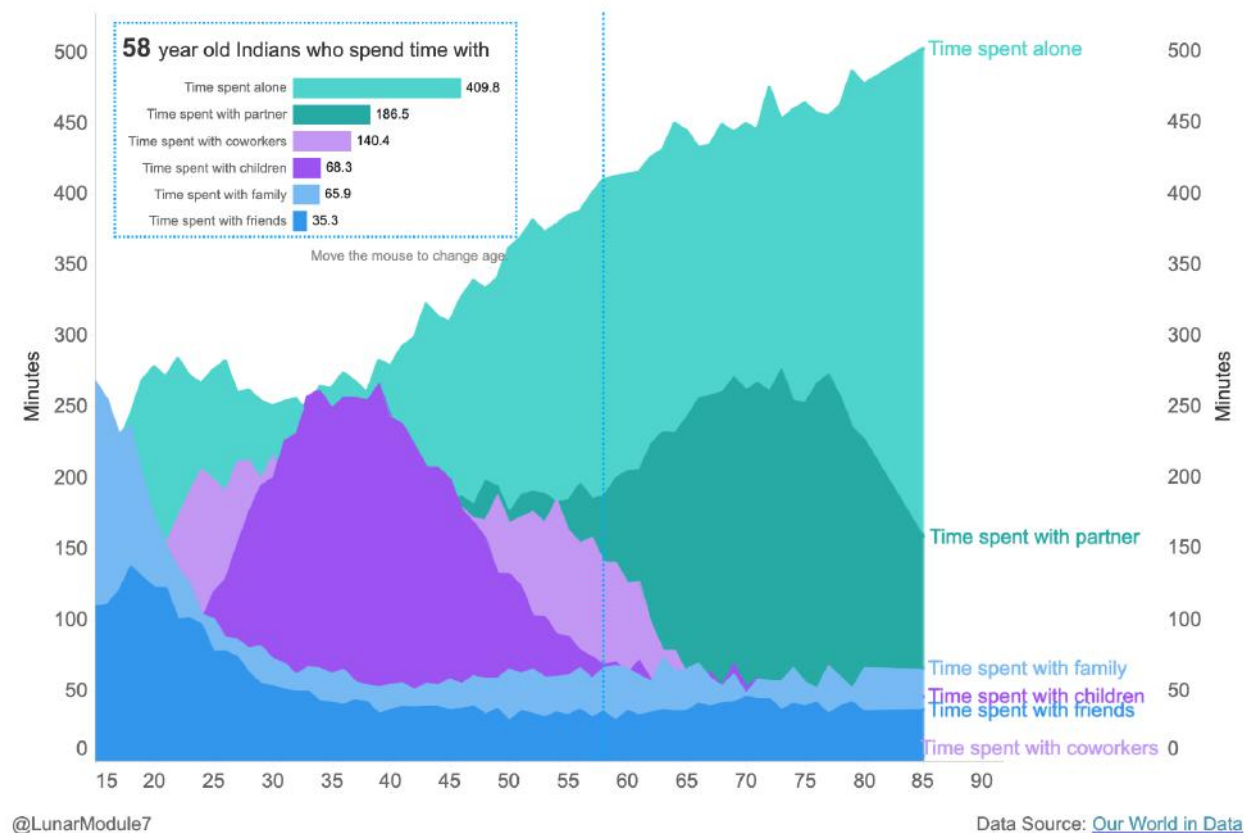
TIME DATA

Who Indians spend their time with, by age

Average time spent with others is measured in minutes per day, and recorded by the age of the respondent. This is based on averages from surveys spanning 2009 to 2019.

58 year old Indians who spend time with

Time spent alone	409.8
Time spent with partner	186.5
Time spent with coworkers	140.4
Time spent with children	68.3
Time spent with family	65.9
Time spent with friends	35.3

Move the mouse to change age

Minutes

Time spent alone

Time spent with partner

Time spent with family
Time spent with children
Time spent with friends
Time spent with coworkers

@LunarModule7   Data Source: Our World in Data

ARE INDIA'S EMPLOYEES ALWAYS 'ON' AT WORK?

92% SPEND LESS THAN AN HOUR on personal matters at work

65% Chat with family / friends on messaging apps

37% Scroll through social media

1 in 2 Speak with colleagues on personal matters

1 in 2 Search for information for personal reasons

27% Send personal emails

TIME MANAGEMENT

Pareto Analysis
aka the 80/20 rule

The 80/20 rule is the idea that **20% of actions are responsible for 80% of outcomes**. It helps you prioritize tasks that will solve problems.

WORKS WELL FOR:

- Problem solvers
- Analytical thinkers

80% Effort

20% Effort

20% Result

80% Result
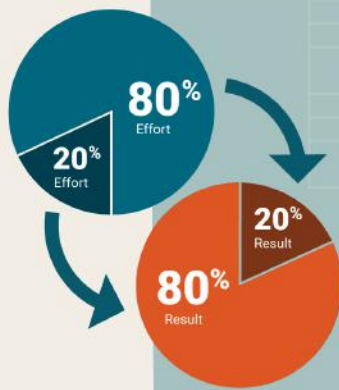
Parkinson's Law

This law is based on the idea that **the amount of time you give yourself to complete a task**, is the amount of time it will take you to complete that task.

WORKS WELL FOR:

- Procrastinators
- People that work well under pressure

Pomodoro Technique

This technique has you **utilize a timer to break down your work into intervals**. Each interval is known as a *Pomodoro*.

WORKS WELL FOR:

- Creative thinkers
- Those feeling burnt out

Time Blocking Method

To use this method, **assign each time block in your day to a task**. These tasks can be anything from eating breakfast to studying for a test.

WORKS WELL FOR:

- Working students/parents
- Analytical thinkers
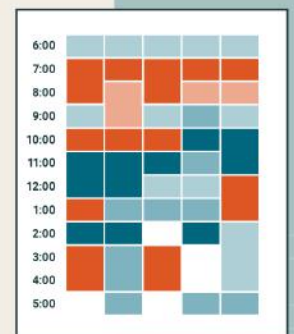
Eisenhower Matrix

This method has you **organize your tasks into 4 quadrants** sorting them by important vs. unimportant & urgent vs. not urgent.

	Urgent	Not Urgent
Important	DO	DECIDE
Not Important	DELEGATE	DELETE

WORKS WELL FOR:

- People with tough decisions
- Critical thinkers

Getting Things Done (GTD) Method

Capture

Clarify

Organize

Reflect

Engage

This process works to help you **move planned tasks aside by recording them on a piece of paper** & then breaking them down into actionable work items.

WORKS WELL FOR:

- Distractible people
- People who like to make lists

TIME MANAGEMENT

Rapid Planning (RPM) Method

This technique was developed by Tony Robbins as a way to condition and **train your brain to focus on the outcome you're after**.

WORKS WELL FOR:

👥 Working students/parents
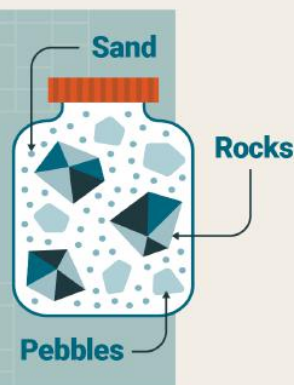
🏆 People with long-term goals

Results
What do you want to achieve?

Purpose
Why do you want this?

Map (massive action plan)
What will you do to achieve this?

Pickle Jar Theory

Sand
Rocks
Pebbles

This theory helps you figure out what is useful and what is not useful in your daily life. It allows you to **prioritize tasks that need to get done today**.

WORKS WELL FOR:

👁 Visual people

🔶 Concrete thinkers

Eat That Frog Technique

This technique encourages you to **start your day by first doing the things that you may not want to do**, but will benefit you in the long run.

WORKS WELL FOR:

✗ Abstract thinkers

🏆 People with long-term goals

"Give me six hours to chop down a tree and I will spend the first four sharpening the axe."
~Abraham Lincoln

tomorrow

(noun)

a mystical land where 99% of all human productivity, motivation and achievement is stored

Source: https://plato.stanford.edu/entries/time-travel-phys/

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