



QUEST

January 2021

science

*is simply the word to describe
a method of organizing our*

curiosity

TIM MINCHIN

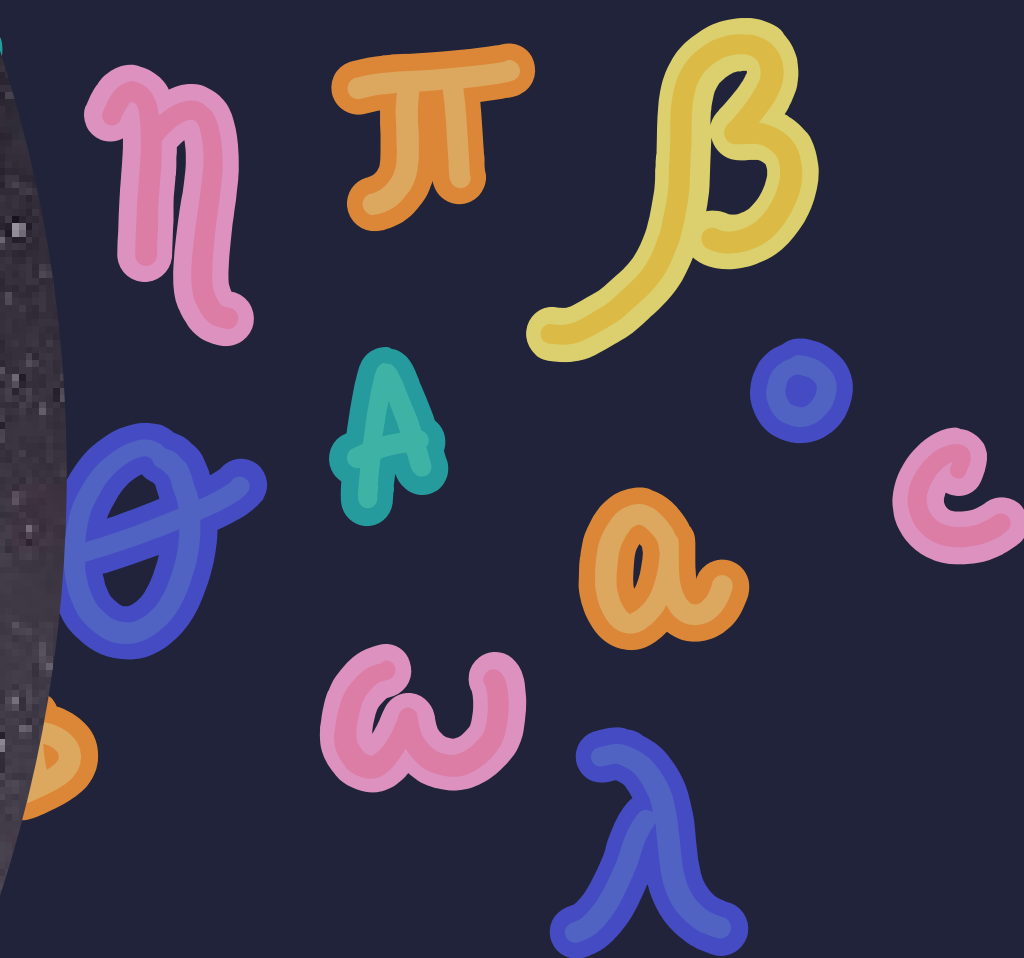




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STUDENT'S CORNER



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Fast and easy energy saving tips

-By Ms. Kriti Dawar

1

"LED" bulbs use less than 1/4th the energy and can last 25 times longer than incandescent bulbs.



2

Use power strips to switch off TV's, game systems, stereos when you are not using them.

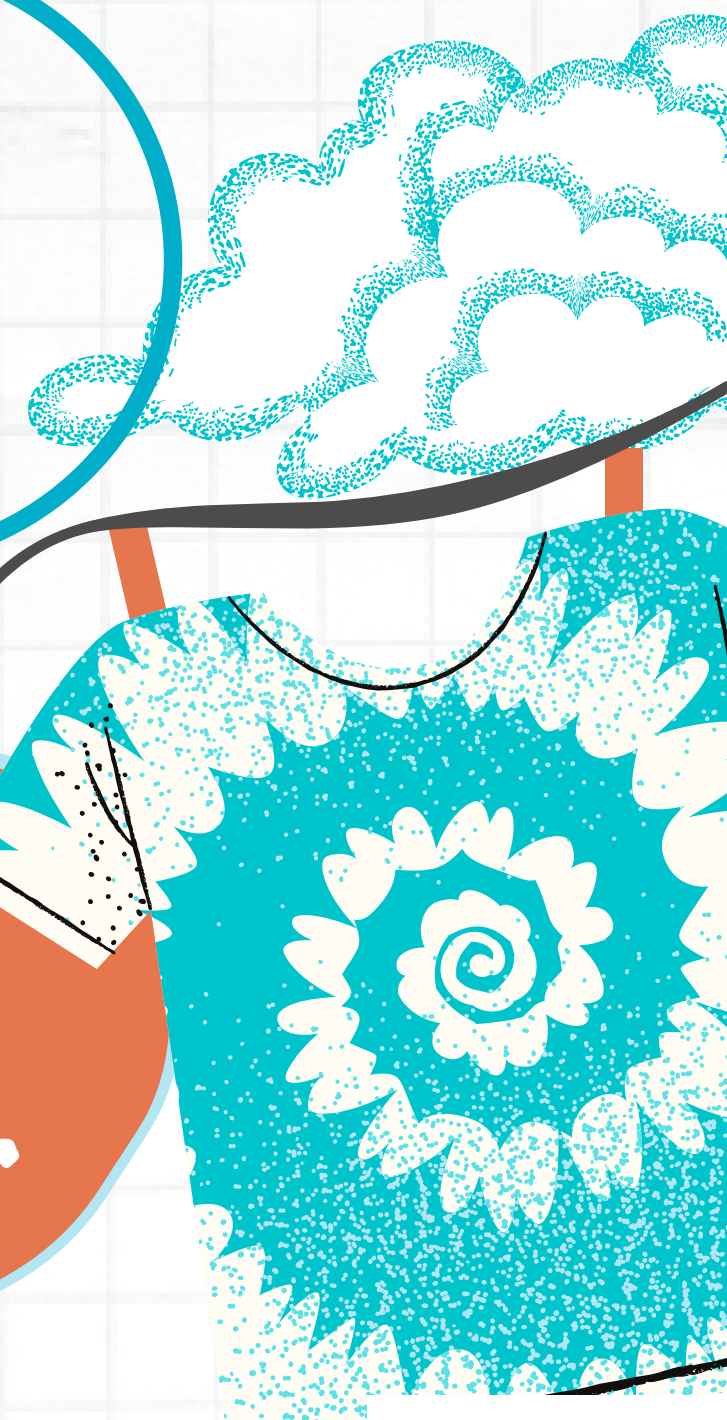


3

Drive fuel efficient cars and avoid fast accelerations. Also, keep the tyres of your vehicles properly inflated.

4

Take public transportation when possible.

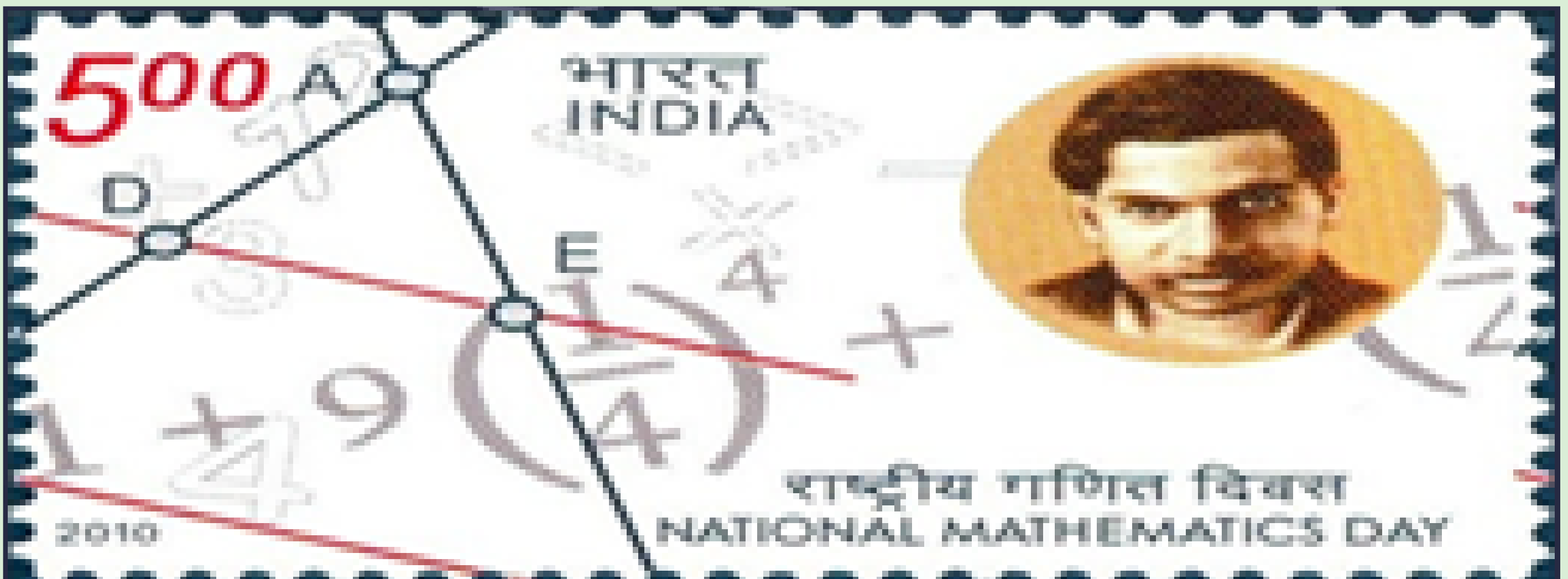


5

Cook with a lid. Air dry laundry.

NATIONAL MATHEMATICS DAY

-BY MS. POONAM SAINI



**WHAT IS
NATIONAL
MATHEMATICS
DAY?**

The Indian government declared 22 December to be National Mathematics Day. This was announced by Prime Minister Manmohan Singh on 26 February 2012 at Madras University, to mark the 125th anniversary of the birth of the Indian mathematician SRINIVASA RAMANUJAN. On this occasion, Singh also announced that 2012 would be celebrated as the National Mathematics Year.

The objective behind celebrating the day is to raise awareness among people about the importance of mathematics for the development of humanity.

**WHAT IS THE
OBJECTIVE OF
NATIONAL
MATHEMATICS
DAY?**

..contd.

SRINIVASA RAMANUJAN

THE MATHEMATICAL GENIUS

Educational background: Srinivasa Ramanujan was born to a Tamil Brahmin Iyengar family at Erode, Tamil Nadu. He had developed a talent for mathematics from a very young age, mastering trigonometry at the age of 12 and was eligible for a scholarship at the Government Arts College in Kumbakonam. He had enrolled in Madras' Pachaiyappa College at the age of 14.

Work Experience: In 1912, Ramanujan started working as a clerk in the Madras Port Trust where his mathematical genius was recognized by a colleague who was also a mathematician. The said colleague referred Ramanujan to Professor GH Hardy of Trinity College, Cambridge University. Ramanujan met Hardy in 1913, a year after which he went to Trinity College where he honed his craft.

In 1916, he received a Bachelor of Science (BSc) degree. He was elected to the London Mathematical Society in 1917.

In 1918, Ramanujan was elected a Fellow of the Royal Society for his research on Elliptic Functions and theory of numbers. In October 1918, he became the first Indian to be elected a Fellow of Trinity College.

Contributions: Ramanujan made priceless contributions to several mathematical concepts like infinite series, continued fractions, number theory and mathematical analysis. He also made notable contributions like the hypergeometric series, the Riemann series, the elliptic integrals, the theory of divergent series, and the functional equations of the zeta function.

THE MEETING OF TWO GAS GIANTS

-BY DR. MANPREET KAUR



Hey Julia! Did you see the Great Conjunction on 21st December, 2020?

Hi Franco! No. What was it? Could you please explain?

Jupiter takes 12yrs to take one revolution around the sun while Saturn takes 29.5 yrs. After every 20 yrs, these two gas giants (Jupiter and Saturn) align in a line or engage in conjunction.

That's interesting! But why was it called the Great Conjunction on 21st December, 2020?

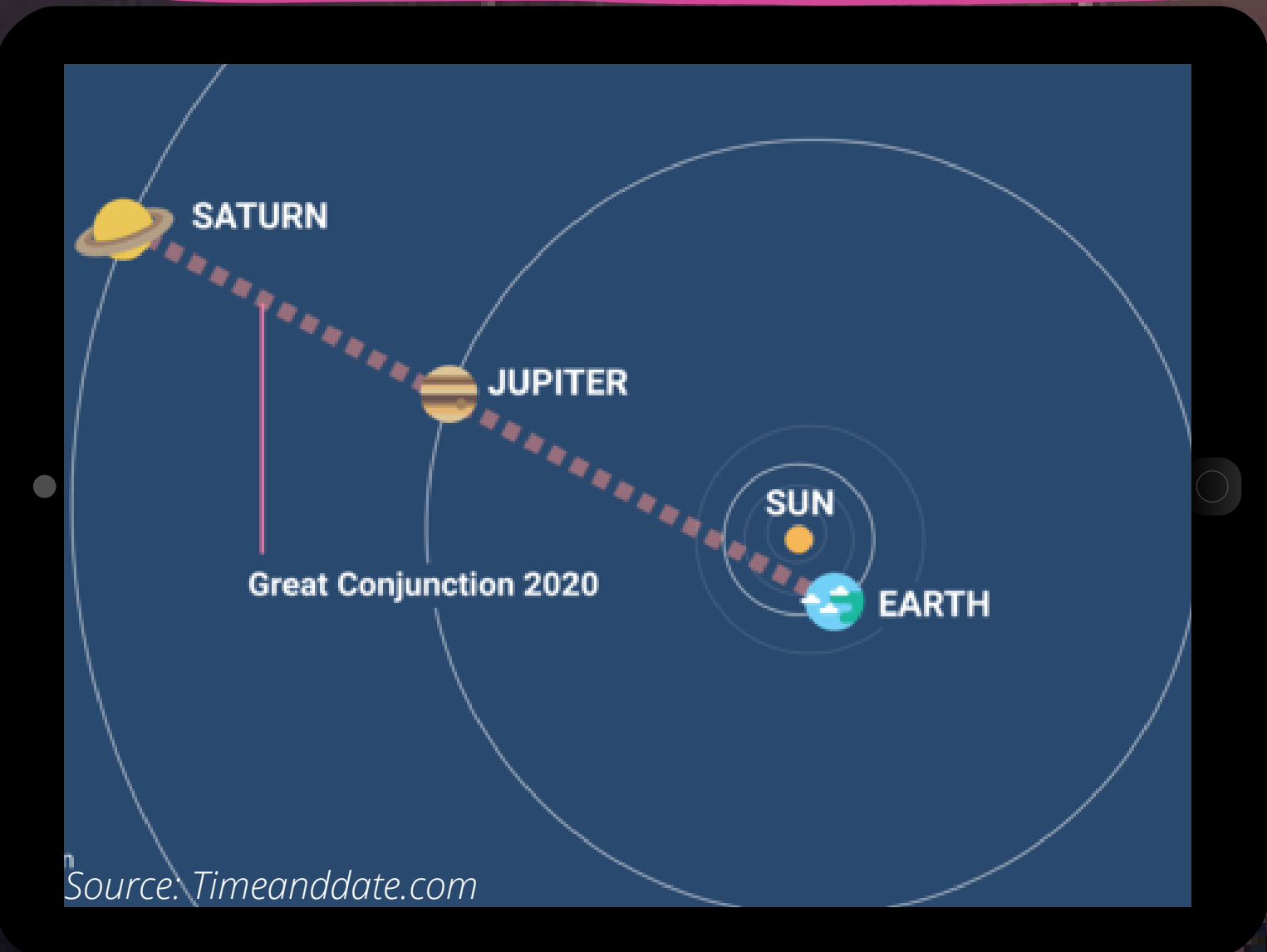
On Dec. 21, Jupiter and Saturn were separated by just 0.1 degrees. The last time these two planets appeared so close was on July 16, 1623-that's actually 397 years ago.

Ahh, I missed such a great astronomical event. Franco, could you please share some of the pictures of this event?

Yes, of course! I will share. During this event, the two planets (and their moons) were visible in the same field of view through binoculars or a telescope.

Great! It will be a delight to see the pictures of such a rare event. Thank you Franco!

Source: Space.com



Source: Timeanddate.com



Source: The Financial Express

Let's Reflect



WINTERLINE

-BY MR. SANJAY BHARDWAJ

<https://youtu.be/b8Ix4wXjuCI>

SMART INDIAN CITIES- A CONCEPT

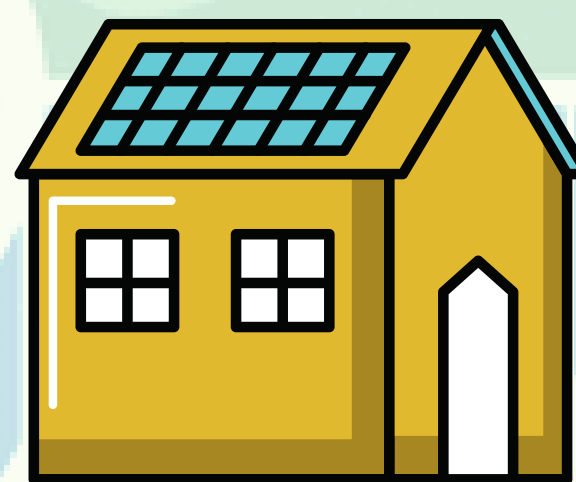
- BY SARTHAK SEN (M1-D)



Indian cities are struggling to tackle the impact of the climatic crisis such as heat waves, cyclones, floods etc. It is time to think of new ways to reduce the temperature and to make urban environment sustainable for the people by designing and constructing buildings that need less energy to run and simultaneously are in harmony with nature.

We should emphasize to build houses which are climate friendly so that they do not need excessive energy for air conditioning. To do this, the following methods can be practiced:

- **Tree shading:** It can reduce surrounding air temperature. Planting of trees and shrubs on the ground and pavement not only reduce heat radiation but also cools the air.
- **Proper ventilation:** It is another aspect which controls heat levels and makes the room airy.
- **Reflective roofing:** It is also effective way to reduce the heat transfer to the surface of the house. Therefore it helps to decrease the need of air-conditions and emission of greenhouse gases.
- **Green Roofs:** Cities must invest more on parks , gardens , water bodies and on very simple concept of Green roofs which not only keep homes cool but also add less to air pollution and more to green space.
- **Solar Panels:** As long as humans live on earth, the sun will be shining so use of Solar panel both at home and at industries should be encouraged as it provides efficient and green solution. It is renewable source of energy unlike fossil fuels.
- **Bio-gas:** Bio-gas can become important options for sustainable lifestyle. It can be used for cooking, lighting, heating and much more. House waste can be converted in to bio-gas for day to day usage of appliances.



Our cities might be smart in its technologies but it would not be smart if it does not provide a liveable environment and harms the ecosystem in which it is built. So eco-friendly should be basic of the planning process. If we will take care of the mother nature then mother nature will take care of us.

MATHS IS FUN

-BY AVIANA CHAWLA (P4-A)

Maths is Fun

Sure sometimes it's tricky
And makes you go icky
And also makes us picky

My friends think its tough
Others might think it's rough
But I feel it's tricky not tough
And sometimes I really cannot get enough

I have a secret, there is a tool
Do I tell you or not this rule?
I will tell you this, so open your ears wide
Or you might miss this ride

Just **PRACTICE** with all your might
Then your answers will start becoming right
I know, this sounds too good to be true
But this trick will take away your Math blues.

Addition and Multiplication will become your favourite friends
Subtractions and Division will make all amends
Fractions will make you keep everything equal and fair
Tables will not scare you, even if they dare!

$$4 + 4 = 8$$

$$4 - 4 = 0$$

$$4 \times 4 = 16$$

$$4 \div 4 = 1$$

So with just practice I can tell
It will be your brain's greatest dumbbell.
Slowly but surely answers will flow
And Joy for Maths will just grow

$$4 + 4 = 8$$

$$4 - 4 = 0$$

$$4 \times 4 = 16$$

$$4 \div 4 = 1$$

POWER OF THE FUTURE:

SOLAR ENERGY

Majority of electricity is generated using fossil fuels such as coal, oil and natural gas. Traditional energy resources have challenges such as pollution, limited quantity available on earth, environmental concerns over the climate change and cost factor, as a significant portion of these fuels are imported from other countries.

Hence, there is an urgent need to develop alternative energy resource to generate electricity. Solar energy has emerged as a potential alternative, which addresses some of these concerns. Solar energy is total energy sun radiates through visible light and other unseen electromagnetic waves.

Solar power is a subset of solar energy that could be converted to electricity. Solar power generation has emerged as one of the most rapidly growing renewable sources of electricity. Solar power generation has several advantages over other forms of electricity generation:

- Reduced dependence on fossil fuels
- Better for environment
- More economic
- Saves foreign exchange
- Incentives from government



At homes, solar energy can be used to power the lights, fans, heating the water and cooking the food. As fossil fuels become rare, it is the call of the hour to move towards the resources of renewable energy and solar energy is front-runner among them.

“Solar power, wind power, the way forward is to collaborate with nature-it’s the only way we are going to the other end of the 21st century”

-By Suhani Rathi (M1-E)

DREAMING OF OUTER WORLD

-BY SOHINI BANERJEE, M1-D

Space is a place,
Where the planets seem to have a race.

May it be Mars, Earth or Jupiter,

Do you know, they never litter?

The gravity there is low with no air.

Space is a place,

Where I would love to spend days!

The planets circling around the Sun is called a Revolution.

The space has no pollution, and is like a wonderful nation!

It expands wide and far,

And nobody there does a war.

To go there I have to study hard.

I am keen to know about meteorites and stars!

Our teacher says that stars are large,

On our head will they barge?

I don't think they have a grudge with us!

They adorn the space like ornaments.

Do you know for what they are meant?

To protect the huge place?

Or Light up the whole space?

Consider the options carefully

As it is the key to go to planets like

MARS, VENUS OR MERCURY!

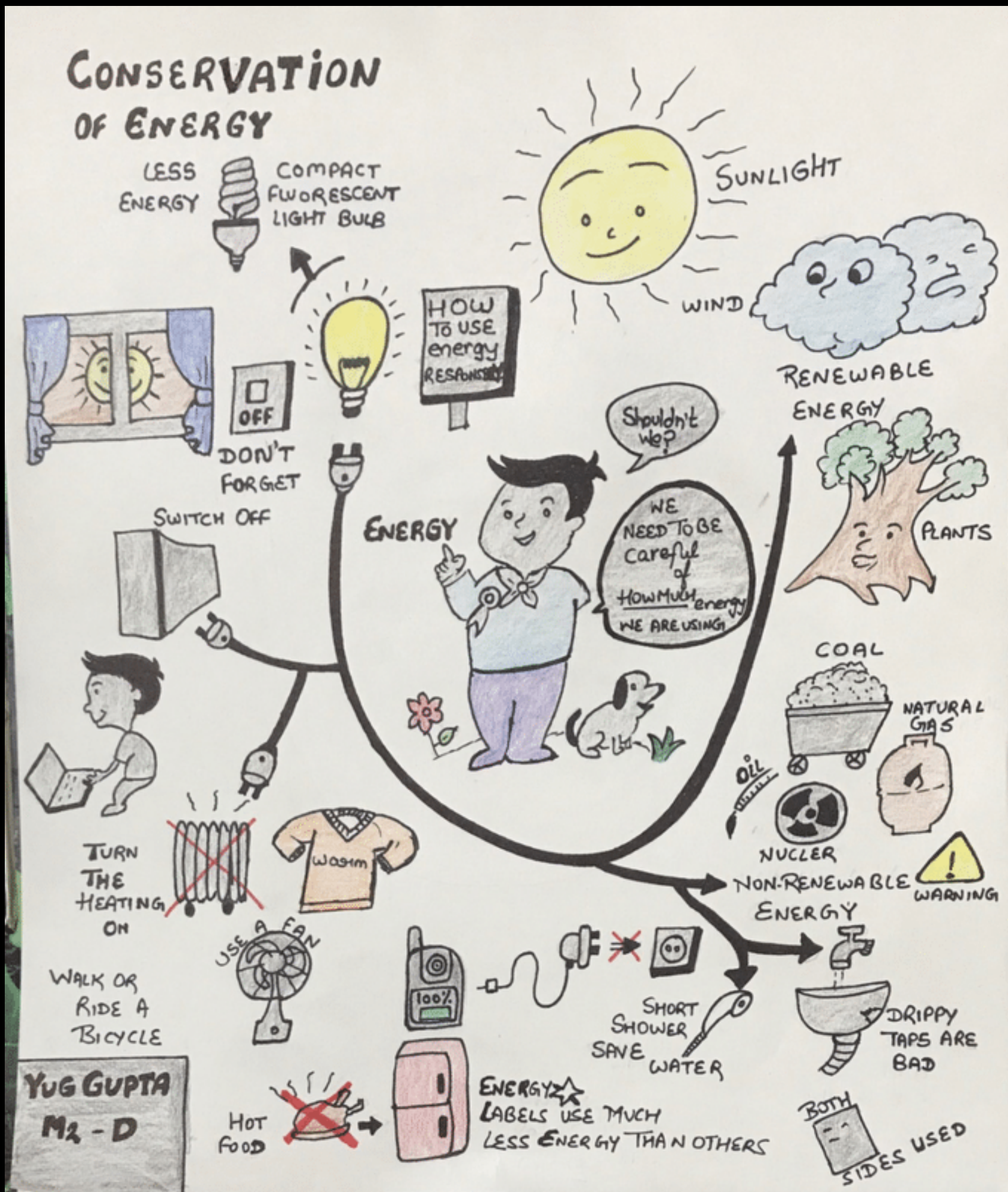
ART GALLERY



G. JAYA HARSHINI, M3-B



ANANAYA SHARMA, M1-D



YUG GUPTA, M2-D

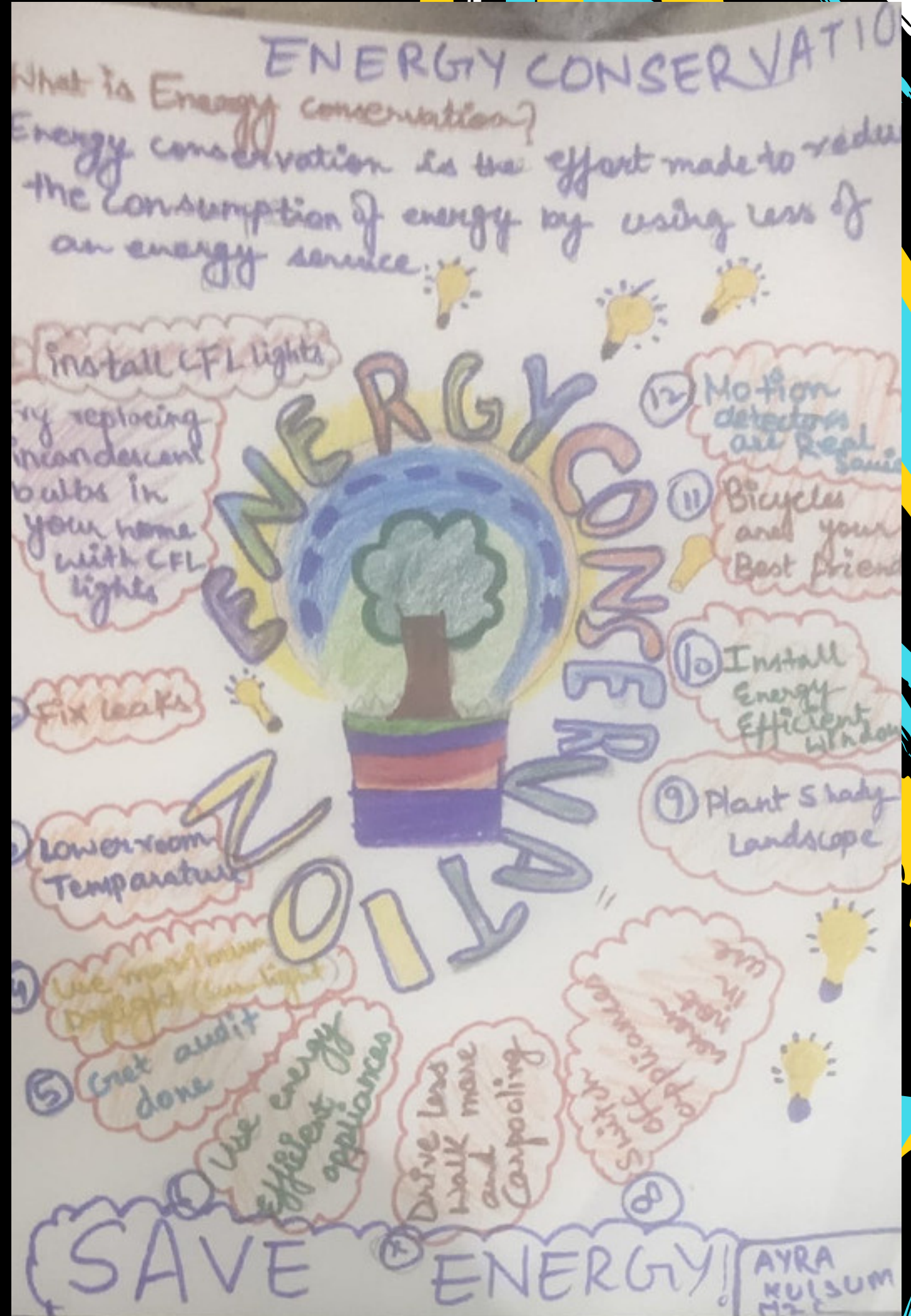


PRITHA CHAWLA, M2-D

ART GALLERY



AKALSIMARJOT SINGH, M2-A



AYRA KULSUM, M2-C



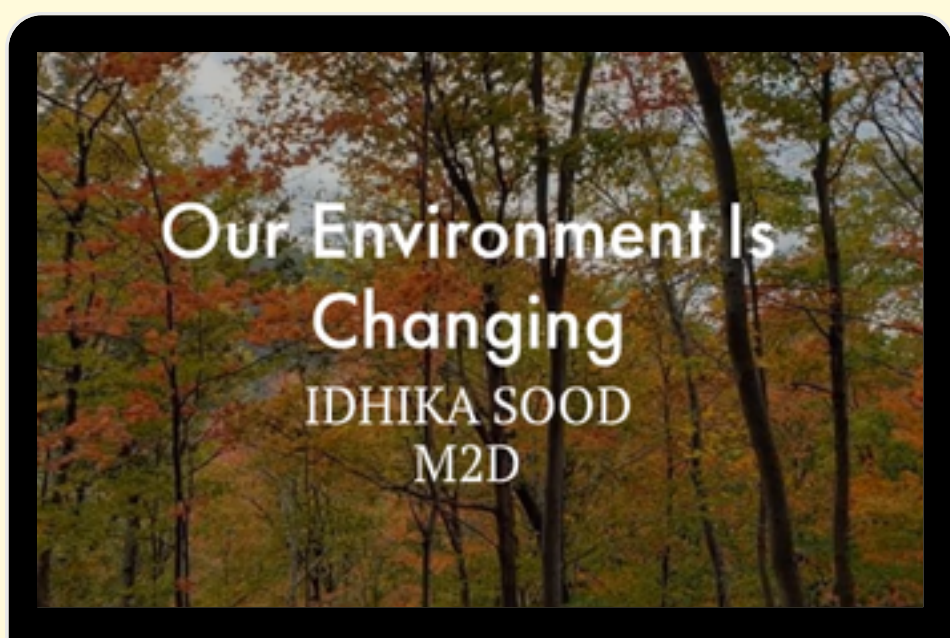
B. DIYAAN, M2-C

VIDEO GALLERY



USES OF SOLAR ENERGY
-By Kairav Singhani, M3-D

<https://drive.google.com/file/d/1kusVthyamoNVypth9NaXIJEKX4AWE1k/view?usp=sharing>



OUR ENVIRONMENT IS CHANGING
-By Idhika Sood, M2-D

https://gyanbharati-my.sharepoint.com/:v:/g/personal/simran_gyanbharati_onmicrosoft_com/EcTKxtKcUQ1Bl3JWikeubGsBfNor48Kbg3TID145dOYdgw?e=2sPNrz



EVOLUTION OF PERIODIC TABLE
-By Shaunak Sood, S2-B

<https://drive.google.com/file/d/1rodo8nP30LW1TTRajQTCK42TfarrgnoH/view?usp=sharing>

MAKE THE CONNECTION!

Efficiency = Savings!



CLEAN 1
GREEN 2
RESOURCE 3
OFF-PEAK 4
GENERATE 5

ALTERNATIVE FUEL 6



BIOMASS 7
EFFICIENT 8
WEATHERIZE 9
FOSSIL FUEL 10

INCANDESCENT 11

RETROFIT 12



HYBRID 13
WATT 14
SLEEP 15

- a Monitor setting
- b Update with efficient equipment
- c Produce power
- d Healthy, efficient, sustainable
- e Insulate and prevent air leaks
- f Produce more work with less energy
- g Renewable energy resources
- h Organic matter to produce energy
- i Inefficient light bulb
- j Efficient vehicle with advanced technology
- k Hydrogen and Ethanol
- l A natural material
- m A unit of electrical power
- n Coal, oil, and gas
- o Time of lower energy demand










-By Ms. Kriti Dawar

Do the Math!

If every American home replaced just one light bulb with a good LED bulb, we would save enough energy to light more than 2.3 million homes.



Fit the numbers 1 - 9 in each 3 x 3 square, row and column. No repeats!

	7			4	2		5	
	4			8			7	
	9			5			6	
7					9			2
	5	6			4	3		9
		4			5			7
5			3				9	
3				6		8		
4			5					6

-By Ms. Kriti Dawar

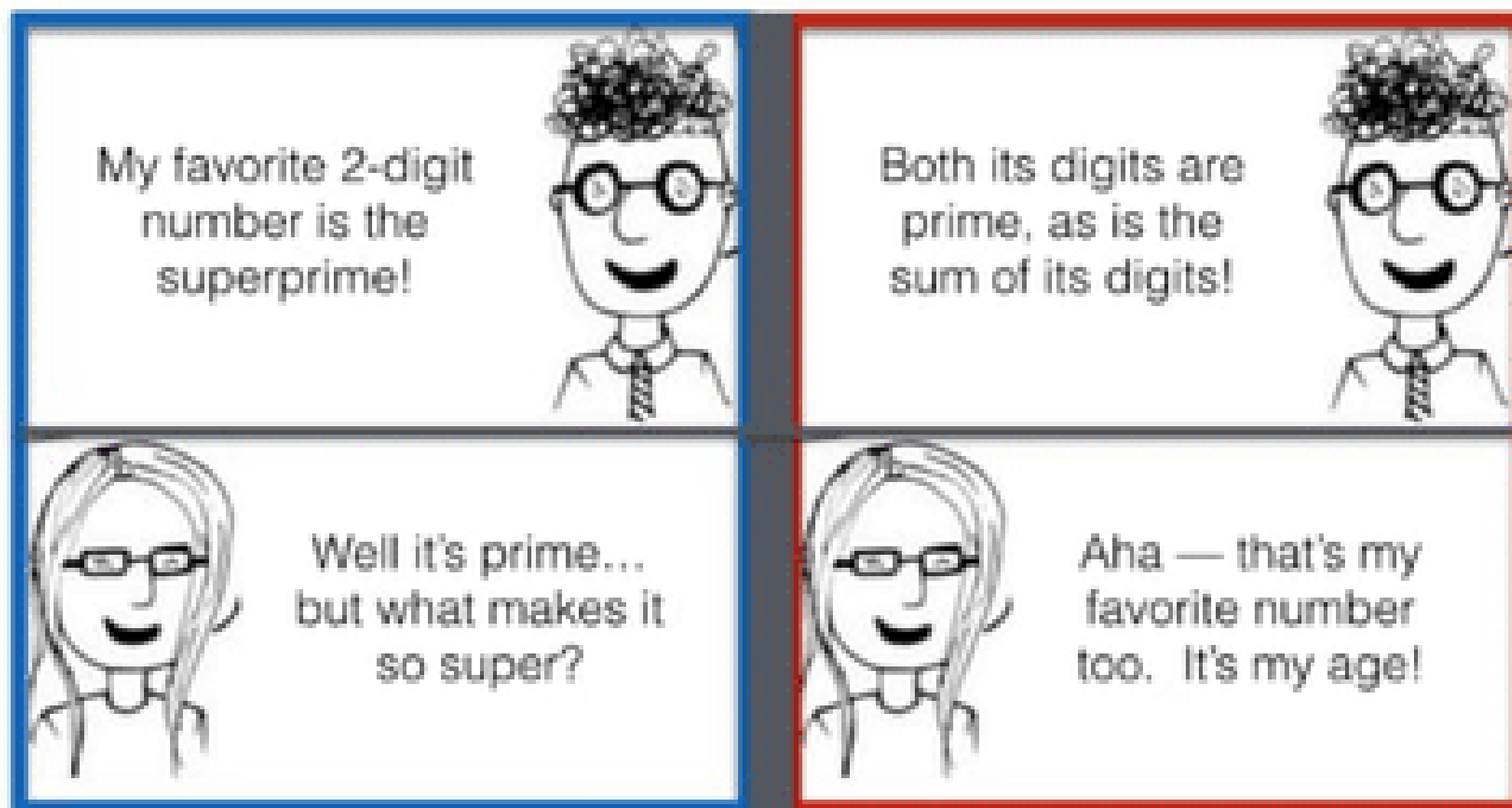
BRAIN TEASER

-By Ms. Simran Bhatia



Consider a digital clock. The first time after midnight when the three digits are all prime numbers is 2:22 am. What is the **last time before 10:00 am** when the three digits on the clock are all prime numbers?

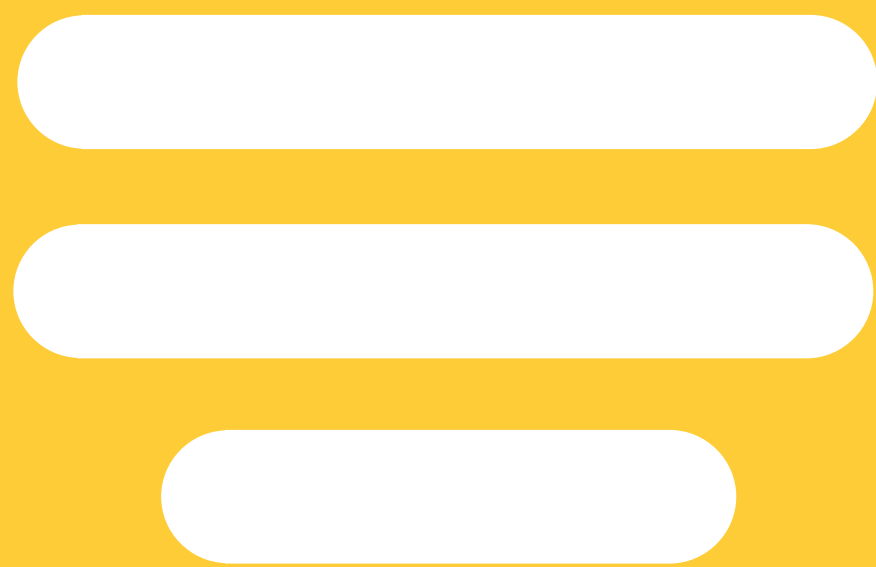
*Impossible
if not!*



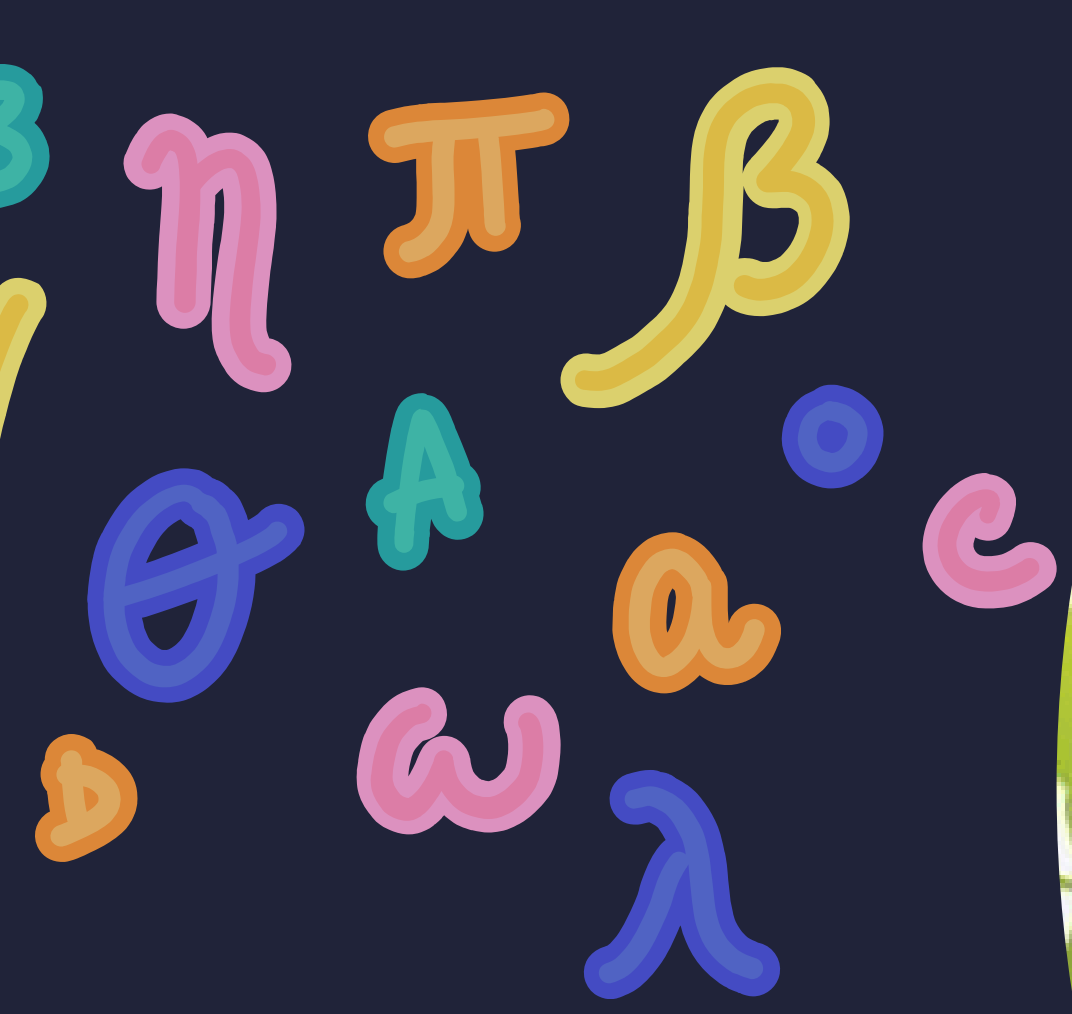
John and Amy have the mathematical conversation above. How old is Amy?



**TURN THE
LIGHTS OFF
WHEN YOU
LEAVE**



CONSERVATION IS CONTAGIOUS. PASS IT ON.



*Conserve
first...*

*...let Sun do
the rest*

