

GYAN BHARATI SCHOOL

QUEST.....

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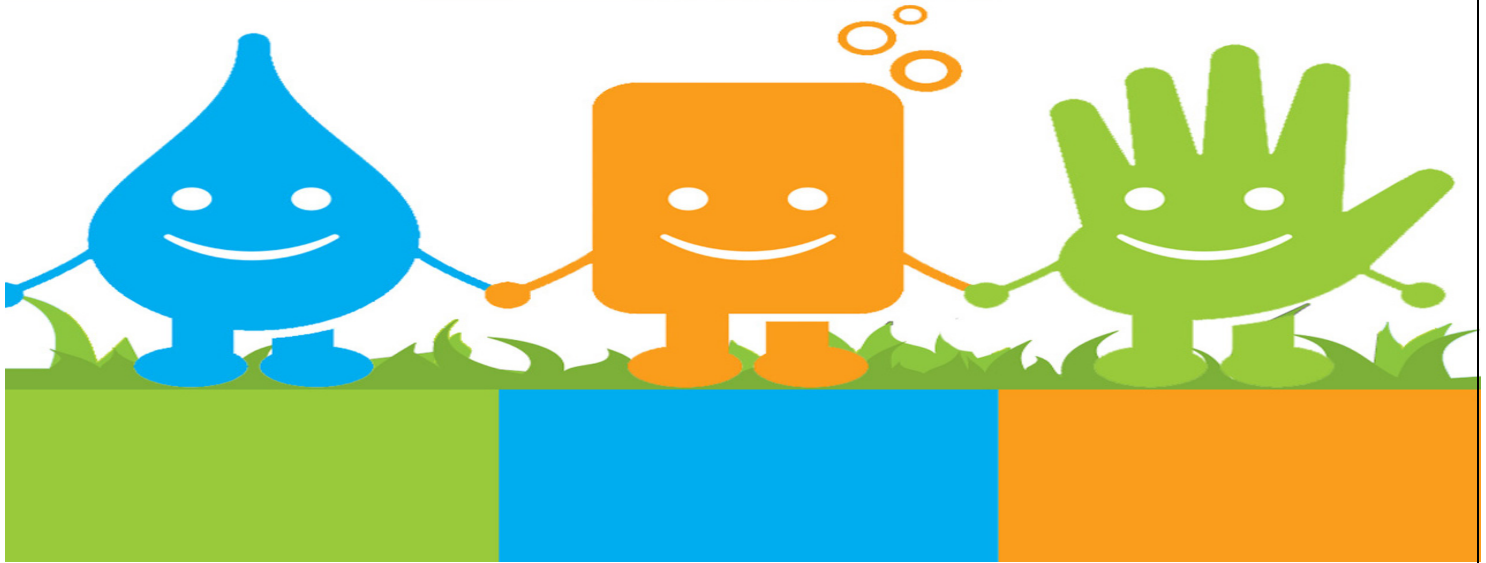
IDENTIFY ME.....



- I was Born on August 23, 1918, in a Syrian Christian family in Travancore.
- I started my research career at the Indian Institute of Science, Bengaluru, under the supervision of Sir C.V. Raman.
- My work on the spectroscopy of diamonds and rubies resulted in five research papers and a PhD dissertation, but as I did not have a master's degree I was refused a PhD.
- In 1945, I did my internship in a course on meteorological instrumentation at the Imperial College, London.
- In 1948, I returned to India and joined the India Meteorological Department, Pune.
- I standardised the drawings of about 100 weather and radiation related instruments and also set up monitoring stations across the country to monitor solar radiations, to help India harness solar energy.
- In 1976, I retired as Deputy Director General of the Meteorological Department and returned as a visiting professor to the Raman Research Institute, Bengaluru for three years.
- I published two books that are considered to be standard reference texts for budding scientists – the *Handbook of Solar Radiation Data for India* and *Solar Radiation over India*
- Because of my significant contributions in the field of solar radiation, ozone and wind energy instrumentation I was called the '**Weather Woman of India**'.
- I suffered a stroke in 1996 and died on August 16, 2001, in Thiruvananthapuram.

Global Handwashing Day

October 15



The day was founded by the **Global Handwashing Partnership (GHP)** in 2008 to help communities, advocates, and leaders spread the word about handwashing with soap.

WHEN TO WASH YOUR HANDS

- 1** After going to the **toilet**

- 2** Before **touching and eating food**

- 3** If they look or feel **dirty**

- 4** After playing with **pets**

- 5** After **coughing, sneezing** or blowing your nose


HOW TO WASH YOUR HANDS

- 1** Use **soap** and warm water

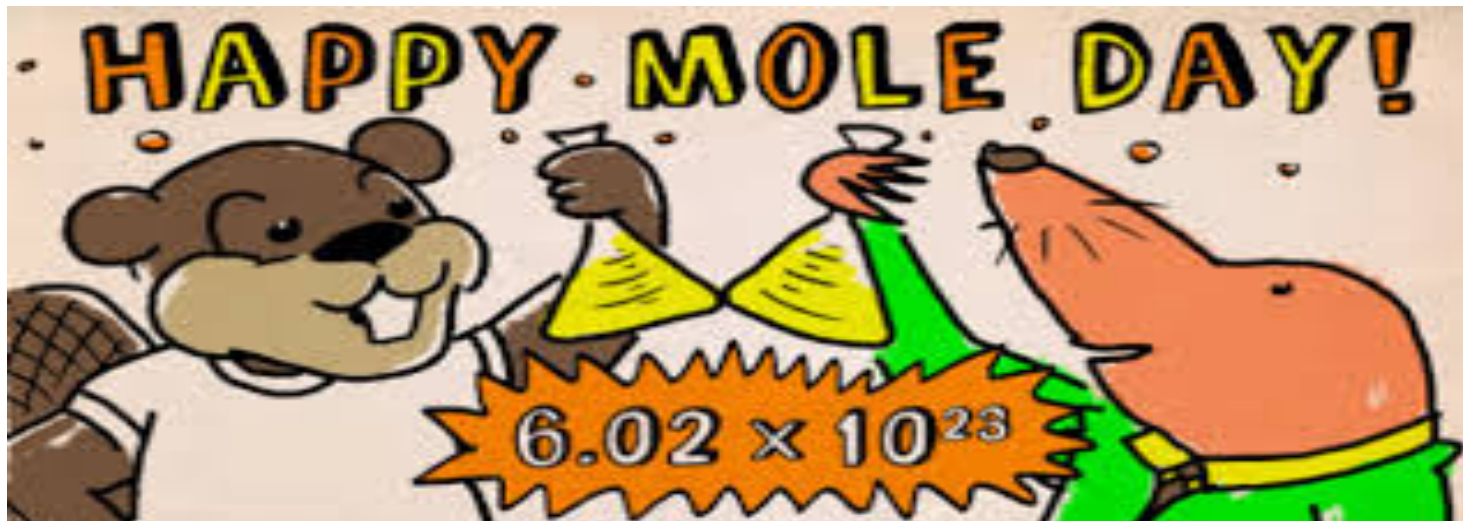
- 2** Rub the soap over **both sides** of your hands

- 3** ...between **every finger** and around the **thumbs** and **nails**

- 4** Rinse off with **clean** warm water

- 5** Dry hands thoroughly with a clean dry towel, paper towel or under a hot air dryer


EVEN THOUGH YOU CAN'T SEE THEM, GERMS ON YOUR HANDS CAN QUICKLY SPREAD AND MAKE YOU ILL. KEEP YOUR HANDS CLEAN.



What Is Mole Day?

Celebrated annually on **October 23** from **6:02 a.m. to 6:02 p.m.**, **Mole Day** commemorates **Avogadro's Number** (6.02×10^{23}), which is a basic measuring unit in chemistry.

THE MOLE: 6.022×10^{23}



What is a Mole?

One mole is the amount of a substance that contains 6.022×10^{23} atoms or molecules. It is specifically defined as the number of atoms contained in 12 grams of carbon-12. This is also known as 'Avogadro's Number' (N_A); it is named after the Italian scientist Amedeo Avogadro (left), a suggestion put forward by French scientist Jean Perrin to recognise Avogadro's work.



One mole is essentially _____

602,214,179,000,000,000,000,000,000

_____ of something - in chemistry, atoms or molecules



Water



Iron



Oxygen



Table Salt



Gold



Helium

ONE MOLE IS A DIFFERENT MASS FOR DIFFERENT ELEMENTS & COMPOUNDS

This may seem confusing; however, it's similar to comparing a dozen elephants to a dozen mice. Although their masses may be very different, you still have a dozen of each!



A mole is often referred to as 'a chemist's dozen'

IT'S JUST AN EASIER WAY TO COUNT LARGE NUMBERS OF ATOMS & MOLECULES

$$\text{NO. OF MOLES} = \text{MASS (g)} \div \text{MASS OF 1 MOLE (g)}$$



Amazing Science facts

J.B DUNLOP was the first to have the brilliant idea to put **AIR INTO TIRES** to cushion the ride.



Human **JAW MUSCLES** can generate a **FORCE OF 200 POUNDS.**

The longest living cells in the human body are **BRAIN CELLS** which can live the entire lifespan of an individual.



PORCUPINES FLOAT IN WATER.



Your nose can remember about **50,000** different scents.



90% of the human body is made up of **Oxygen, Carbon, Hydrogen** and **Nitrogen.**

The tentacles of the **GIANT ARCTIC JELLYFISH** can reach **120 FEET** (36.6 meters) in length.

Sloths, opossums and armadillos spend about **80%** of their lives **sleeping.**



The most poisonous animals in the world are the **POISON ARROW FROGS** of South and Central America.



A car traveling at 80 kmph uses half its fuel to overcome wind resistance.



MUSCLES make up about **HALF OF THE WEIGHT** of the **HUMAN BODY.**

VENUS is the hottest planet in the solar system, with an estimated surface temperature of **864 F (462 C).**

Chimpanzees are the only animals that can **recognize** themselves in a mirror.



The **MICROWAVE** was invented by a researcher who walked by a **RADAR TUBE** and the chocolate bar in his pocket melted.



Your **LEFT LUNG** is smaller than your **RIGHT LUNG** to make room for your **HEART.**



The body can lose **40 to 50 percent of body heat** through the head because of its **Extensive Circulator Network.**

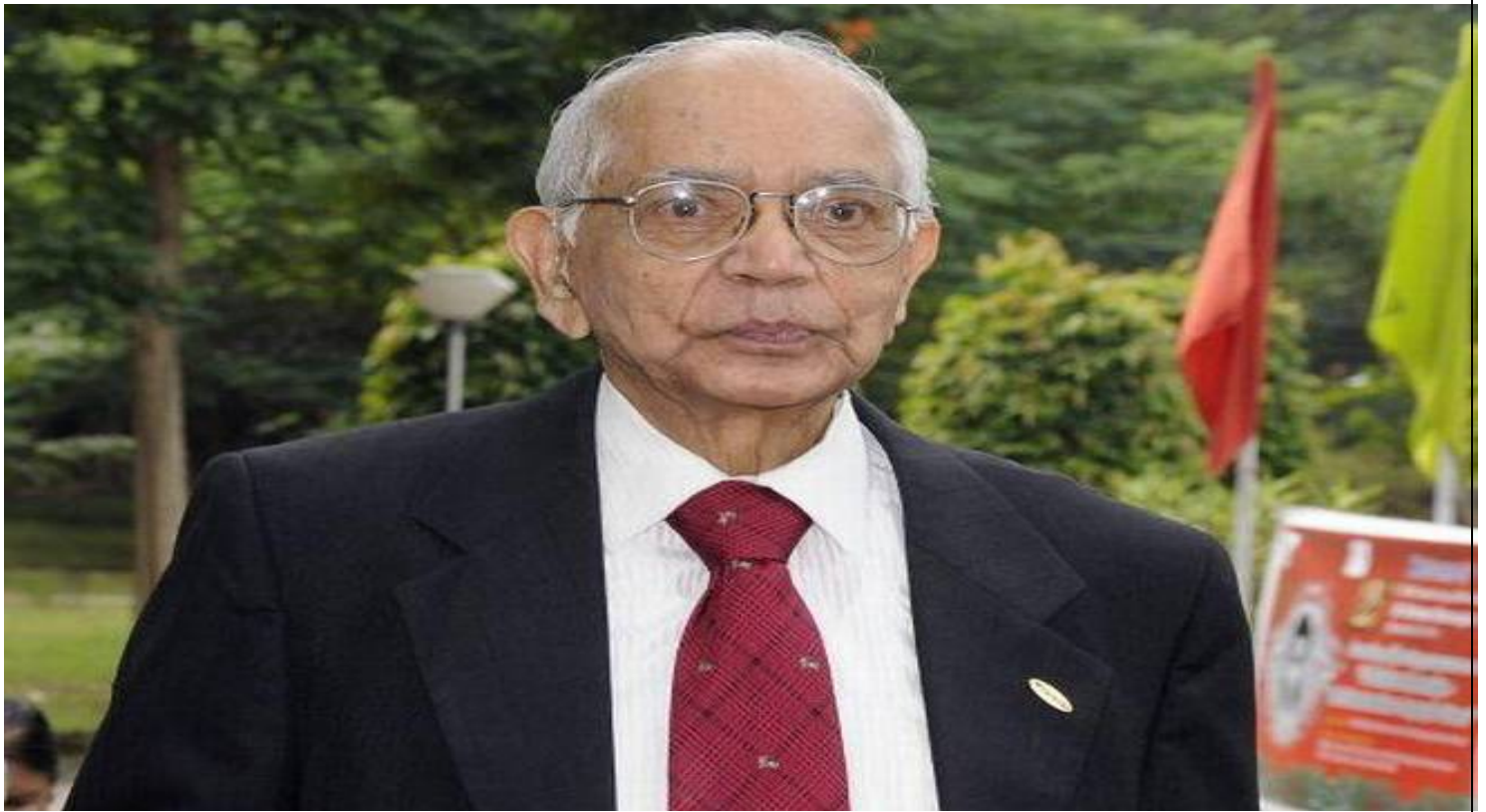
It takes light from the Sun about **8 minutes and 20 seconds** to reach the Earth.

Unlike most other birds, **Hummingbirds** cannot walk. They can only fly.



MOTOR NEURONS are the longest cells in the human body. They run from the **LOWER SPINAL CORD TO THE BIG TOE** and can be up to **4.5 FEET** (1.37 meters) long.

The human body has **60,000 miles** (97,000 km) of blood vessels.



- **Calyampudi Radhakrishna Rao, FRS known as C R Rao (born 10 September 1920) is an Indian American mathematician and statistician.**
- **He is currently professor emeritus at Pennsylvania State University and Research Professor at the University at Buffalo.**
- **Rao has been honoured by numerous colloquia, honorary degrees, and festschrifts and was awarded the US National Medal of Science in 2002.**
- **The American Statistical Association has described him as "a living legend whose work has influenced not just statistics, but has had far reaching implications for fields as varied as economics, genetics, anthropology, geology, national planning, demography, biometry, and medicine."**
- **Among his best-known discoveries are the Cramér–Rao bound and the Rao–Blackwell theorem both related to the quality of estimators.**
- **Other areas he worked in include multivariate analysis, estimation theory, and differential geometry.**
- **His other contributions include the Fisher–Rao theorem, Rao distance, and orthogonal arrays.**
- **He is the author of 14 books and has published over 400 journal publications.**

FUN with MATHEMATICS....



1.

5 pirates of different ages have a treasure of 100 gold coins.

On their ship, they decide to split the coins using this scheme:

The oldest pirate proposes how to share the coins, and ALL pirates (including the oldest) vote for or against it.

If 50% or more of the pirates vote for it, then the coins will be shared that way. Otherwise, the pirate proposing the scheme will be thrown overboard, and the process is repeated with the pirates that remain.

As pirates tend to be a bloodthirsty bunch, if a pirate would get the same number of coins if he voted for or against a proposal, he will vote against so that the pirate who proposed the plan will be thrown overboard.

Assuming that all 5 pirates are intelligent, rational, greedy, and do not wish to die, (and are rather good at math for pirates) what will happen?

2. Tom asked his Granny how old she was. Rather than giving him a straight answer, she replied:

"I have 6 children, and there are 4 years between each one and the next. I had my first child (your Uncle Peter) when I was 19. Now the youngest one (Your Auntie Jane) is 19 herself. That's all I'm telling you!"

How old is Tom's Granny?

Answers to FUN with MATHEMATICS....

1) 5 Pirates riddle

The oldest pirate will propose a $98 : 0 : 1 : 0 : 1$ split, in other words the oldest pirate gets 98 coins, the middle pirate gets 1 coin and the youngest gets 1 coin.

Let us name the pirates (from oldest to youngest): Alex, Billy, Colin, Duncan and Eddie.

Working backwards:

2 Pirates: Duncan splits the coins $100 : 0$ (giving himself all the gold). His vote (50%) is enough to ensure the deal.

3 Pirates: Colin splits the coins $99 : 0 : 1$. Eddie will accept this deal (getting just 1 coin), because he knows that if he rejects the deal there will be only two pirates left, and he gets nothing.

4 Pirates: Billy splits the coins $99 : 0 : 1 : 0$. By the same reasoning as before, Duncan will support this deal. Billy would not waste a spare coin on Colin, because Colin knows that if he rejects the proposal, he will pocket 99 coins once Billy is thrown overboard. Billy would also not give a coin to Eddie, because Eddie knows that if he rejects the proposal, he will receive a coin from Colin in the next round anyway.

5 Pirates: Alex splits the coins $98 : 0 : 1 : 0 : 1$. By offering a gold coin to Colin (who would otherwise get nothing) he is assured of a deal.

(Note: In the final deal Alex would not give a coin to Billy, who knows he can pocket 99 coins if he votes against Alex's proposal and Alex goes overboard. Likewise, Alex would not give a coin to Duncan, because Duncan knows that if he votes against the proposal, Alex will be voted overboard and Billy will propose to offer Duncan the same single coin as Alex. All else equal, Duncan would rather see Alex go overboard and collect his one coin from Billy.)

2. Tom's Granny is 58 years old. Let's see why:

First child born: Granny is 19

Second child born: Granny is 23 ($19 + 4$)

Third child born: Granny is 27 ($23 + 4$)

Fourth child born: Granny is 31 ($27 + 4$)

Fifth child born: Granny is 35 ($31 + 4$)

Sixth child born: Granny is 39 ($35 + 4$)

Sixth child is 19: Granny is 58 ($39 + 19$)

IDENTIFY ME..... Answer: Anna Modayil Mani
