

GYAN BHARATI SCHOOL

QUEST

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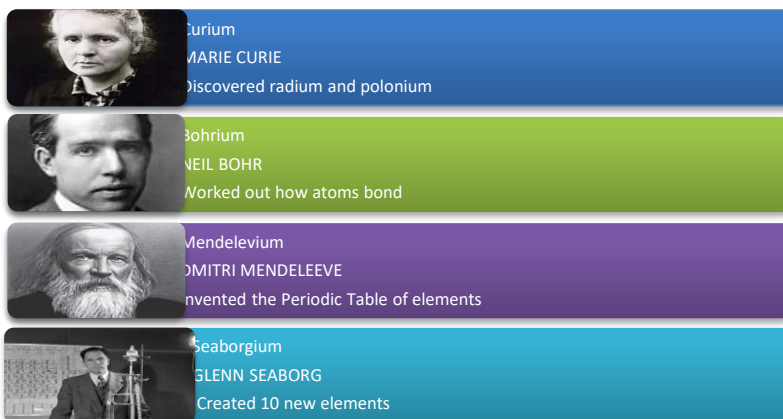


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FACTS ABOUT PERIODIC TABLE

- There are 118 confirmed elements in the periodic table. Among those, 90 elements can be found in nature, others are strictly man-made. Technetium was the first man-made element.
- Hydrogen is the lightest element with its atomic weight 1 and that is why it can be found in the top left corner of the periodic table.
- Uranium is the heaviest element with an atomic weight of 238.
- Helium, neon, argon, krypton, xenon, and radon are known as the Noble Gases as they were believed to be unreactive. But recent studies have shown reactive compounds of xenon, krypton and radon.
- The International Union of Pure Applied Chemistry (IUPAC) is responsible for maintaining the periodic table.
- Most of the elements on the periodic table are metals- almost 75 per cent.
- Mendeleev's periodic table was designed in the order of increasing atomic weight while the modern periodic table is designed according to increasing atomic number.
- The only two elements that are liquid in room temperature are mercury and bromine.
- Where Mendeleev's table had blank spaces, he correctly predicted the weights and chemical behaviors of some missing elements-gallium, scandium, and germanium.
- Carbon is unique in that it is known to form up to 10 million different compounds. Carbon is important to the existence of life.
- Francium is the rarest element on earth. There are probably no more than a few ounces of it on earth at any given time.
- The only letter not in the periodic table is the letter J.
- The country Argentina is named after the element silver (symbol Ag) which is argentum in Latin.
- Although there is helium on Earth, it was first discovered by observing the sun.



Chemistry in everyday life

1. Sky is Blue

An object is coloured because of the light that it reflects. The white light from the sun contains all the wavelengths, but when it impacts on an object some of its wavelengths are absorbed and some reflected. The colour of the sky can be explained considering phenomena named Rayleigh scattering that consists on the scattering of light by particles much smaller than its wavelength. This effect is especially strong when light passes through gases.



2. Ice Float on Water

Ice is less dense than liquid water. The heavier water displaces the lighter ice, so ice floats on top.



3. How Sunscreen Works?

Sunscreen combines organic and inorganic chemicals to filter the light from the sun so that less of it reaches the deeper layers of your skin. The reflective particles in sunscreen usually consist of zinc oxide or titanium oxide.



4. Meals are cooked faster in a Pressure Cooker

A pressure cooker has a more elaborated lid that seals the pot completely. When we heat water it boils and the steam cannot escape, so it remains inside and starts to build up the pressure. Under pressure, cooking temperatures raise much higher than under normal conditions, hence the food is cooked much faster.

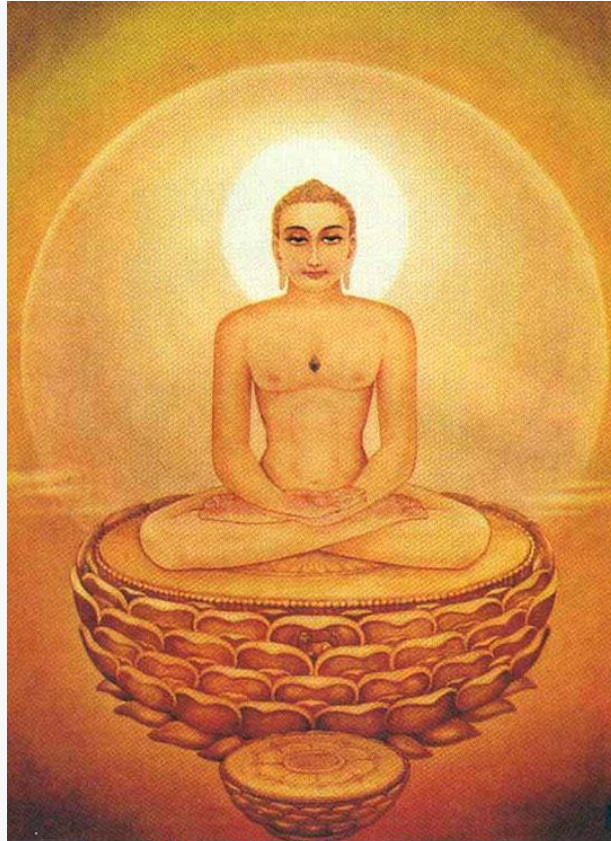


6. Coffee keeps us awake

Coffee keeps us awake because of the presence of a chemical called adenosine, in your brain. It binds to certain receptors and slows the nerve cell activity when sleep is signaled.



MAHAVIRA



Lord Mahavira's Parinirvana

Mahavira was a ninth century Indian mathematician known for separating astrology from mathematics. No exact information is available as to where he was exactly born, but it is mentioned that it was probably the Mysuru state of Southern India. Mahavira made significant contributions in the field of algebra. The book written by him, *Ganitasarasangraha*, is composed of mathematical procedures such as basic operations, reductions of fractions, miscellaneous problems involving a linear or quadratic equation with one unknown, the rule of three (involving proportionality), mixture problems, geometric computations with plane figures, ditches (solids), and shadows (similar right-angled triangles). His work was highly acclaimed because of his contributions to the establishment of terminology for concepts such as equilateral and isosceles triangle; rhombus; circle and semicircle. Mahavira was the first mathematician to explain that negative numbers don't have square roots. The brilliant mathematician's works were highly recognised in

Southern India and his texts were referred to by many scholars from southern India.

MATHS QUIZ

Question 1. The average of first 50 natural numbers is

- (i) 25.30 (ii) 25.5 (iii) 25 (iv) 12.25

Question 2. A fraction which bears the same ratio to $\frac{1}{27}$ as $\frac{3}{11}$ bear to $\frac{5}{9}$ is equal to

- (i) $\frac{1}{55}$ (ii) 55 (iii) $\frac{3}{11}$ (iv) $\frac{1}{11}$

Question 3. The number of 3-digit numbers divisible by 6, is

- (i) 149 (ii) 166 (iii) 150 (iv) 151

Question 4. What is 1004 divided by 2?

- (i) 52 (ii) 502 (iii) 520 (iv) 5002

Question 5. A clock strikes once at 1 o'clock, twice at 2 o'clock, thrice at 3 o'clock and so on. How many times will it strike in 24 hours?

- (i) 78 (ii) 136 (iii) 156 (iv) 196

Question 6. 125 gallons of a mixture contains 20% water. What amount of additional water should be added such that water content be raised to 25%?

- (i) $\frac{5}{2}$ gallons (ii) $\frac{17}{2}$ gallons (iii) $\frac{19}{2}$ gallons (iv) $\frac{25}{3}$ gallons

Question 7. $106 \times 106 - 94 \times 94 = ?$

- (i) 2004 (ii) 2400 (iii) 1904 (iv) 1906

Question 8. Which of the following numbers gives 240 when added to its own square?

- (i) 15 (ii) 16 (iii) 18 (iv) 20

Question 9. Evaluation of $8^3 \times 8^2 \times 8^{-5}$ is

- (i) 1 (ii) 0 (iii) 8 (iv) none of these

Question 10. The simplest form of 1.5 : 2.5 is

- (i) 6:10 (ii) 15:25 (iii) 0.75:1.25 (iv) 3:5

ANSWER:

1. (II) 2. (I) 3. (III) 4. (II) 5. (III) 6. (IV) 7. (II) 8. (I) 9. (I) 10. (IV)