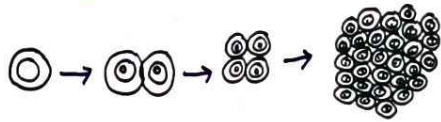




# PLATINUM DRUGS FOR CANCER

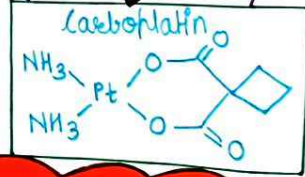
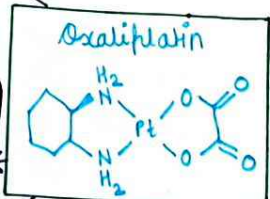
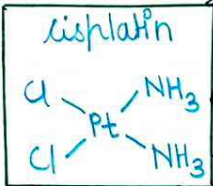


Why does Platinum Metal is used?

The cells in our body are continually dividing; when they do, their DNA un-zips and replicates, producing two copies. The copy isn't perfect so small changes can accumulate. In cancer, these changes have broken the control over cell division, means divide constantly.

What is cancer cell?

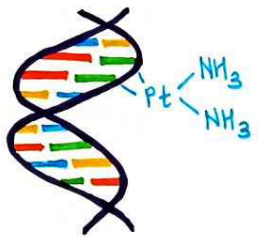
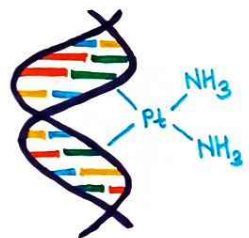
Platinum based nanodrugs, such as platinum nanoclusters, have novel anti-cancer mechanisms and great potential in tumor targeted therapy and have shown promising results in clinical application.



## HOW PLATINUM CANCER DRUG WORKS?

Platinum based drugs bind primarily to guanine bases in DNA strands, forming a platinum bridge. This stops the DNA strand from unzipping and replicating, stopping cancer growth and causing cell death.

### DNA CROSS-LINKS



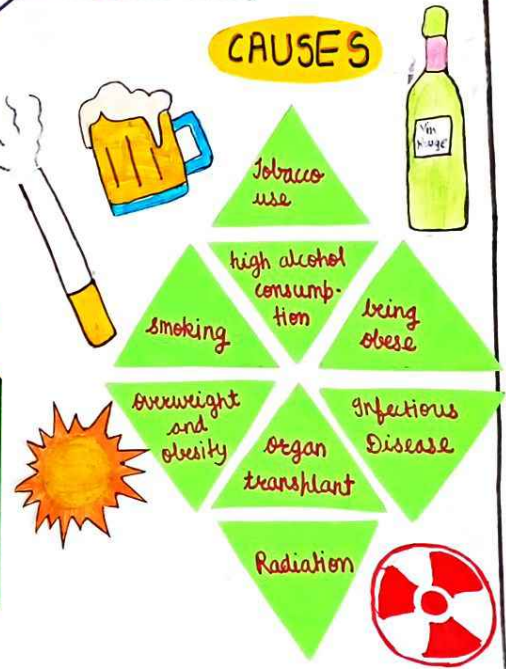
Side effects

Irashness, feeling and being sick, Hair loss, Infections, anemia, Bruising and bleeding, sore mouth, skin and nail changes.

## SYMPTOMS

Weight loss, Fatigue, Unusual bleeding and problems heing, cough up blood, changes to your moles, changes in your bowel habits, etc.

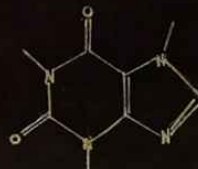
## CAUSES



# CHEMISTRY IN EVERYDAY LIFE

## LIFE

Caffeine structure



Have you ever wondered why chemistry is important? why do we study chemistry?

CHEMISTRY  
HEALTH  
MEDICINE  
INDUSTRY  
SCIENCE  
TECHNOLOGY  
RESEARCH  
YOU

We all are made of chemicals and everything around us is made of chemicals. Everything we hear, see, smell, taste, and touch involves chemistry and chemicals (matter). Hearing, seeing, tasting, and touching all involve intricate series of chemical reactions and interactions in our body. Many of the changes we observe in the world around are caused by chemical reactions. Chemistry is not limited to beakers and laboratories. It is all around us, and the better we know chemistry, the better we know our world. Chemistry is present in every aspect of life, and few examples are



Chemistry is an integral part of our daily life. We see it everywhere. From the food we eat, the soap we use, to the medicines we take, everything we see is a result of chemistry. It is impossible to live without chemistry.



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 are 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. Water is most dense at 4 degree Celsius. As it cools further and freezes, it becomes less dense. Hence, ice is more dense than liquid water and floats on it.

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 so it remains inside and starts to build up pressure. Under pressure, higher temperatures raise much faster than under normal conditions, hence the food is cooked much faster.

Example  
Of  
Chemistry in  
Everyday  
Life

5. The chemistry of love



Chemistry is at the bottom of every step in a relationship. When we fall in love, our brain suffers some changes and also certain chemical compounds are released. Love is driven by these hormones: oxytocin, vasopressin, endorphins.

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.

7. Vegetables are coloured

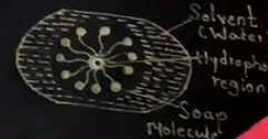
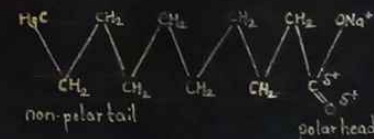


Many vegetables and fruits are strongly coloured because they contain a special kind of chemical compound named carotenoids. These compounds have an area called chromophore, which absorbs and gives off particular wavelengths of light, generating the colour that we then perceive.

8. How soap cleans?



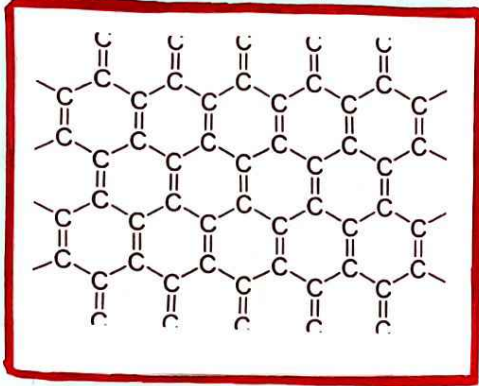
Soap is formed by molecules with a head which likes water (hydrophilic) and a long chain that hates it (hydrophobic). Then when soap is added to the water, the long hydrophobic chains of its molecules hydrophilic heads go into the water. An emulsion of oil in water is then formed, this means that the oil particles become suspended in the water and are liberated from the cloth. With the rinsing, the emulsion is taken away.



- 1] Shreyash. R. Phote
- 2] Prathmesh. S. Agalave
- 3] Vinayak. N. Gosavi
- 4] Aditi. V. Kshirsagar
- 5] Snehal. R. Pirai

# WONDER MATERIAL - GRAPHENE

## STRUCTURE OF GRAPHENE.



## SCIENTIST.



## FUTURE OF GRAPHENE.

- It will replace the Silicon and Used as Semiconductor.
- It will next Plastic.
- Artificial Smelling Device.
- Graphene will be Used as Super Capacitors.

## WHAT IS IT

- Single layer Carbon Atom.
- Stable Crystal Structures.
- Smaller Version of Graphite (but Single layer).

## DISCOVERY.

- Observed in Electron Microscope in 1962.
- In 2004, Andre Geim And Kostya Novoselov Discovered Graphene.
- They won Nobel Prize in 2010.

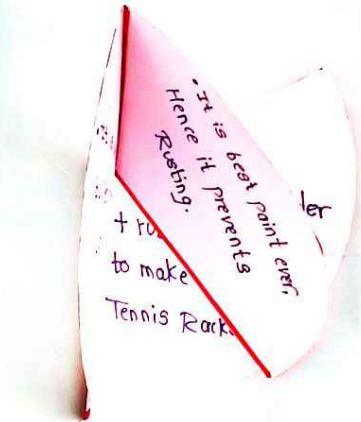
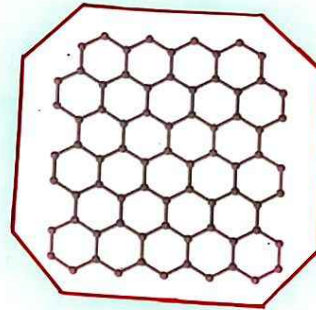
## PROPERTIES.

- Hybridisation of all Carbon in graphene is  $sp^2$ .
- Bond Angle is  $120^\circ$ .
- It is Pure Crystal Structure.
- It is stronger than steel and Kevlar.
- It is good conductor of electricity.
- It can stretch as much as 25% of its length.

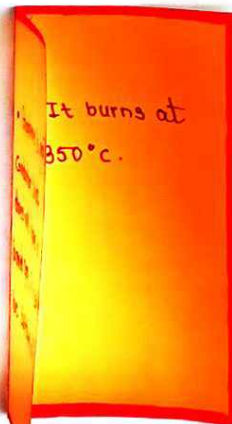
## AMAZING FACTS.

- Graphene is the strongest material ever tested.
- Made of Normal Carbon.
- One Atom thick.
- Super strong and light.
- The Tensile strength is about GPa of 130.

## USES.

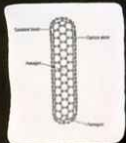
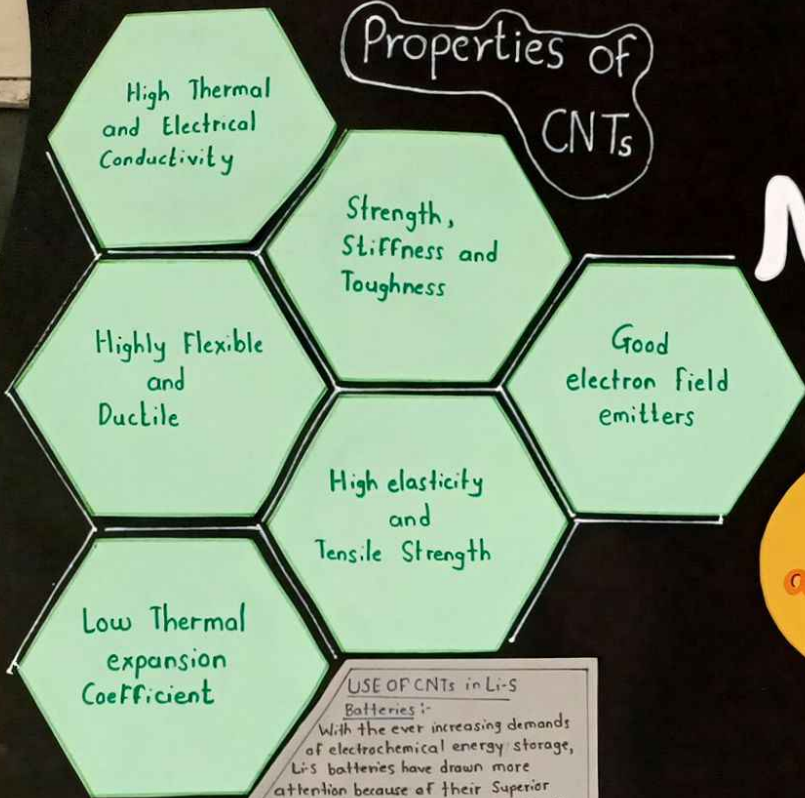


## DISADVANTAGES.



# CARBON NANOTUBE

## Properties of CNTs

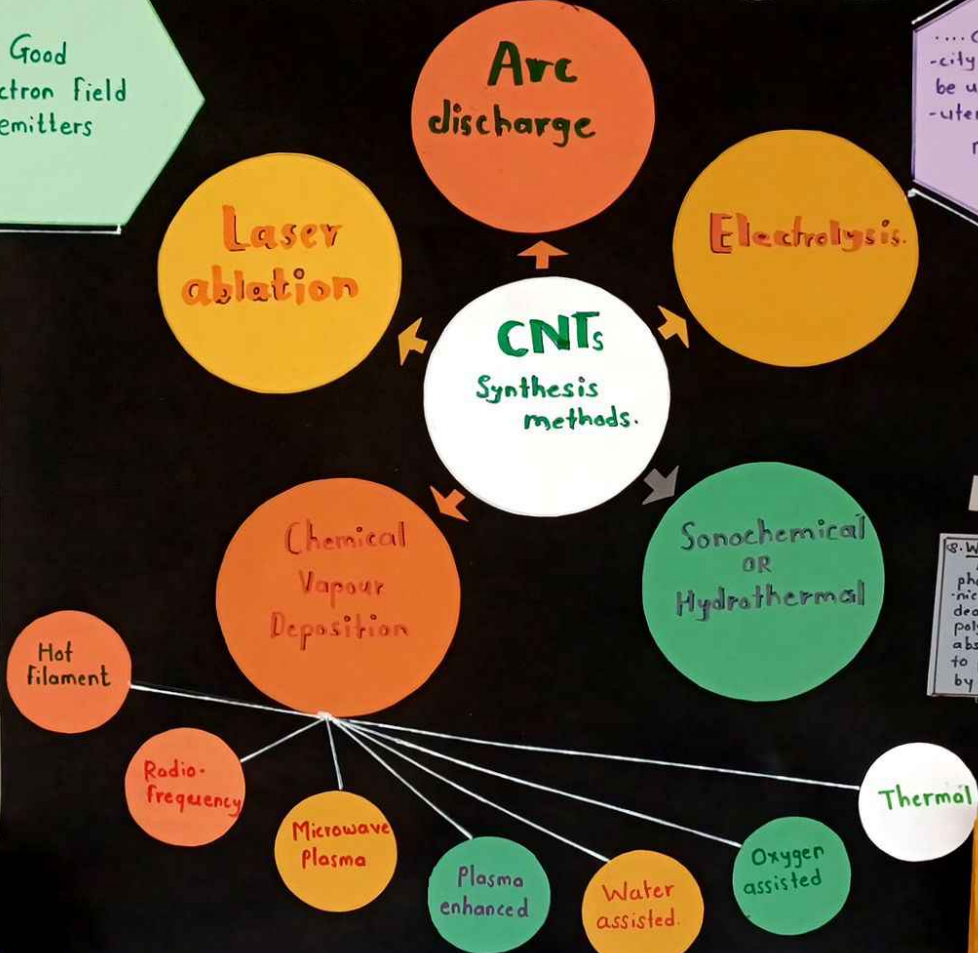


**USE OF CNTs in Li-S Batteries:-**  
 With the ever increasing demands of electrochemical energy storage, Li-S batteries have drawn more attention because of their Superior theoretical energy density & high Specific Capacity.  
 However, practical applications of Li-S batteries suffer from problems such as low conductivity of Sulfur and discharged product, large volume change of Sulfur during cycling, resulting in sluggish rate performance and unsatisfactory cycle life.  
 Various nanostructured carbon material have been served as barrier layer to overcome these problems.  
 In particular CNTs with unique 3D nanostructure have been introduced to Li-S as the intermediate layer because of its Superior flexibility, excellent electrical conductivity & good chemical stability.

**CNT Discovered by**  
 discovered the Carbon Nanotube in 1991.

**Classification of Carbon Nanotube**  
 only one graphene sheet used.

## CNTs Synthesis methods.



The methane gas introduced in vacuum chamber and heated. As the heat increases inside the chamber the bonds between carbon and hydrogen atoms begin to decompose. The carbon then diffuses into a melted metal catalyst substrate. This then becomes the metal carbon solution which eventually becomes supersaturated with carbon. At this point carbon starts to precipitate out and form carbon nanotube.

**This material...**  
 ... is a tube 10 million times smaller than the straw  
 ... is Super Strong and could one day be made into cables 100 times stronger than the same weight of steel

... can conduct electricity and could one day be used to make computers smaller and more powerful.

... is being mixed with plastics to make tennis rackets and bike frames stronger and more lightweight

... is made entirely from element carbon just like diamonds and graphite

... has special properties because of its unique structure: A tube of carbon atoms arranged in hexagons

## USE OF CNTs in Organic Solar Cell

**What is Organic Solar cell?**  
 An organic solar cell is a type of photovoltaic that uses organic electronics a branch of electronics that deals with the conductive organic polymer or organic molecule for light absorption and charge transport to produce electricity from sunlight by the photovoltaic effect.

**How CNTs useful in OSCs?**  
 The reasons behind the incorporation of CNTs in organic solar cells are their properties such as low resistivity, high specular transmittance in the range of UV to NIR. They also have the high flexibility which further can play important role in flexible cells.



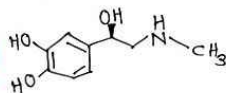
**CNTs in diagnosis and Analysis:**  
 • Biosensor vehicles for diagnosis.  
 • Extraction of drugs and biochemicals.

**Disadvantages**

# How Do Chemicals In Our Brains Create Moods

**Introduction :-** The brain controls the release of certain chemicals called "Neurotransmitters" which communicate with other areas of the brain to stimulate or calm us. This then has influence on our mood, emotions and behaviour. It is also important to know that a chemical imbalance in our brain, is when you're making either too much or too little of certain neurotransmitters. This may contribute to a mood disorder or mental health condition.

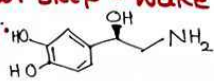
## Adrenaline



Adrenaline is primarily a hormone released by the adrenal gland, but some neurons may secrete it as a neurotransmitter. It is produced during stressful or exciting situations.

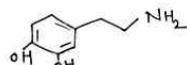
## Noradrenaline

Noradrenaline plays an important role in our body's "fight-or-flight" response. It also affects our sleep-wake cycle, mood and memory.



## Dopamine

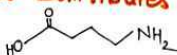
It is primarily responsible for feelings of pleasure, but is also involved in movement and motivation.



## Gaba

(Gamma-aminobutyric acid)

Inhibits motor firing in the CNS - high levels improve focus whereas low levels cause anxiety. Also contributes to motor control & vision.



## Glutamate

Most common brain neurotransmitter. Regulates development and creation of new nerve pathways and hence is involved in learning and memory.

## Acetylcholine

Involved in thought, learning and memory within brain.

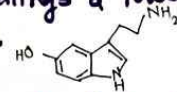


## Endorphins

Release is associated with feelings of euphoria and a reduction in pain (body's natural 'pain killer'). Released during exercise, excitement & sex.

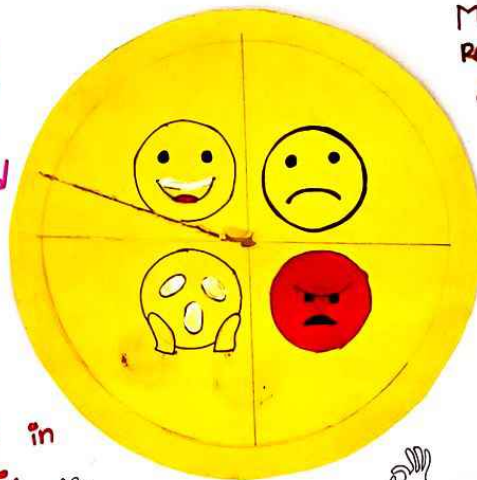
## Oxytocin

Oxytocin is typically linked to warm, fuzzy feelings & lower stress and anxiety.



## Serotonin

It is often called our body's natural "feel good" chemical. When serotonin is at normal levels, you feel more focused, emotionally stable, happier and calmer. Low levels of serotonin are associated with depression.



# GREEN HYDROGEN

Poster No. 8

India have Committed to green hydrogen is one of the solution of emissions, especially in power sector. Hydrogen produced by using renewable energy which has been used by bio-methane. It is developed by using solar renewable energy plant, which green hydrogen plant will be generated in accordance with rules as per period of 30 days for RE used.

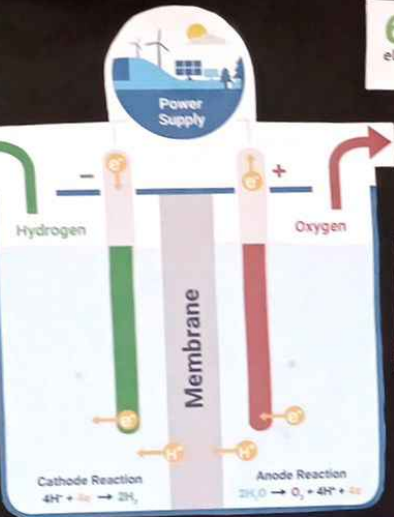
**UNION CABINET APPROVES NATIONAL GREEN HYDROGEN MISSION**  
**EXPECTED DELIVERABLES BY 2030**

Total outlay approved: ₹ 19,744 crore

**60-100 GW** electrolyser capacity

At least **5 MMT** GH<sub>2</sub> annual production

**125 GW** RE capacity for GH<sub>2</sub> generation and associated transmission network



- The Water Used in the electrolysis must contain salts and minerals to conduct the electricity.
- Two electrodes are immersed in the water and connected to a power source and a direct current is applied.
- The dissociation of hydrogen and oxygen occurs when the electrodes "attract ions" with an opposite charge to them.
- During the electrolysis an oxidation-reduction reaction occurs due to the effect of the electricity.

- Rs 1 lakh crore** import savings
- Rs 8 lakh crore** investment
- 50 MMT** CO<sub>2</sub> annual emissions averted
- 6 lakh** jobs



**BLUE H<sub>2</sub>**  
 Blue hydrogen is produced via natural gas or coal gasification combined with carbon capture storage (CCS).

**IMPORTANCE**

- Hydrogen can be used to power vehicles, generate electricity, power industries & heat our homes.
- It could make a huge difference on our carbon emissions & will be critical to achieving net zero.
- Hydrogen as an energy carrier is that when it combines with O<sub>2</sub> the only byproducts are H<sub>2</sub>O and no greenhouse gases.
- Hydrogen is used for explosion - proofing space.

**BLACK H<sub>2</sub>**  
 The hydrogen is produced via coal or lignite gasification or via a process called steam methane reformation (SMR).

**ADVANTAGES**

- It is a clean energy source.
- It is a versatile energy carrier.
- It is a sustainable energy source.
- It is a safe energy source.

**DISADVANTAGES OF GH<sub>2</sub>**

- High Cost: Energy from renewable sources which are key to generating green hydrogen through electrolysis, is more expensive to generate, which in turn makes hydrogen more expensive to obtain.
- High energy consumption: The production of hydrogen in general and green hydrogen more in particular require more energy than other fuels.
- Safety issues: Hydrogen is a highly volatile and flammable element & certain safety measures are therefore required to prevent leakage & explosions.
- Difficulty in storage.

**FUTURE OF GH<sub>2</sub>**  
 tonnes of GH<sub>2</sub> by 2030  
 Government of India

**GH<sub>2</sub>**

Recently with an approval of the Union Cabinet, the Government of India has announced a 'Global Hydrogen Mission' to make India a 'Global Hydrogen Hub'.

The mission is aimed at making India a 'Global Hydrogen Hub' and 'Export Hub'.

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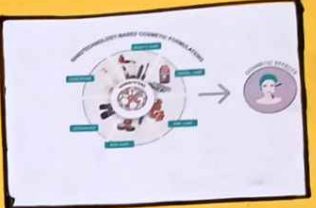


# NANO-TECHNOLOGY

**INTRODUCTION:** THE BRANCH OF TECHNOLOGY THAT DEALS WITH DIMENSIONS OF LESS THAN 100nm. ESPECIALLY THE MANIPULATION OF INDIVIDUAL ATOMS AND MOLECULES.



AGRICULTURE AND FOOD



INDUSTRY AND TECHNOLOGY

APPLICATIONS OF NANO-TECHNOLOGY

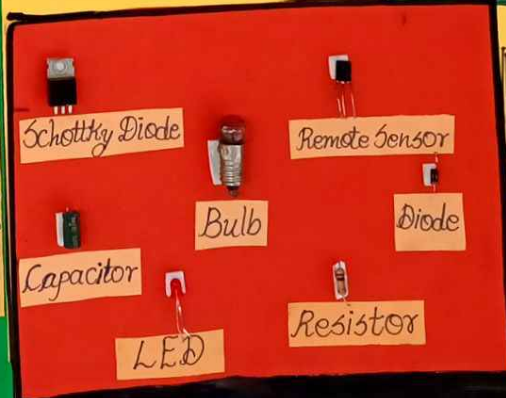
COSMETICS AND PAINTS



MEDICINE AND DRUG DELIVERY



Carbon nanotubes	Nano-Materials	Anti-microbial	Functions	Transportation
Graphene		Catalyst		Commodities
Nanowires		Filtration		Textiles
Nanofibres		Sun protection		Communications
Quantum dots		Green Chemistry		Environment
Nano-Carbon		Health		Chemicals



POSTER DONE BY:~  
 Vaishnavi Gurav, Rasika Magdum,  
 Hanmant Kapse, Yusuf Bargair,  
 Sahil Sawant, Vaishnavi Tadhar  
 CLASS:~ Bsc (TY)  
 TOPIC:~ NANOTECHNOLOGY  
 (Nanomaterials used in Semiconductor devices)

# CHOCOLATE CHEMISTRY



1300-500 BC  
ANCESTRAL MESO-AMERICANS DISCOVER HOW TO MAKE CHOCOLATE

1600s - 1800s  
CHOCOLATE TAKES OVER EUROPE and AMERICA

AD 1300s - 1500s  
SO DO THE AZTECS

## CHOCOLATE TIMELINE

2000s - PRESENT  
AMERICAN ARTISANS REVOLUTIONALIZE CHOCOLATE

1834  
HERSHEY FACTORY OPENS

1847  
THE FIRST SOLID CHOCOLATE BAR IS MADE

1500.  
CHOCOLATE COMES TO SPAIN

AD 250-300  
MAYANS LOVE THEM SOME CHOCOLATE



## STRUCTURES OF CHOCOLATE

The molecules in cocoa butter can be stacked together in different ways. These are known as polymorphs. Tempering chocolate is required to obtain only form V, the most desirable. This is achieved by allowing the chocolate to cool at room temperature, which leads to some of all the polymorphs except VI forming, then heating gently so just below the melting point of form V is in the most form remaining.

**BOTH SOFT AND CRUMBLY WITH NOTICEABLE BLOOMING**

**I 17.3°C**  
Form I is produced by cooling melted chocolate rapidly (e.g. by putting it in the freezer).  
Form II is produced by cooling melted chocolate at 2°C per minute. Form I crystals also gradually become Form II after a short time of freezing temperature storage.

**BOTH FIRM, BUT DON'T GIVE A GOOD 'SNAP', & SHOW SOME BLOOMING**

**III 25.5°C**  
Form III is produced by cooling at 5-10°C. Form III becomes Form II after storage at low temperatures above freezing.

**IV 27.3°C**  
Form IV is produced by allowing melted chocolate to cool at room temperature. Form III also becomes Form IV after storage at room temperature for some time.

**SHINY, SMOOTH TEXTURE, GOOD 'SNAP', AND MELTS IN THE MOUTH**  
Formed by tempering chocolate slowly at room temperature. Most desirable!

**V 33.8°C**

**HARD AND MELTS SLOWLY IN THE MOUTH, SHOWS SOME BLOOMING**  
Can't be formed from melted chocolate. Can only be formed after solid, tempered chocolate has rested for at least 4 months.

**VI 36.3°C**

INCREASED STABILITY & DENSITY



IMPROVES MOOD



ACTS AS STIMULANT



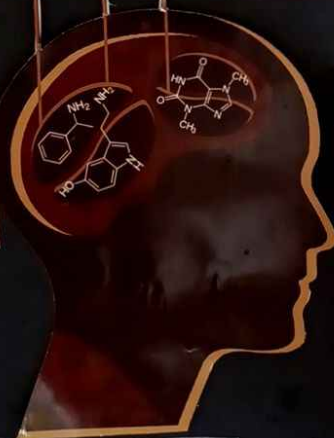
IMPROVES ALERTNESS

## CHOCOLATE and the BRAIN

**PHENYLETHYLAMINE (PEA)**  
Chocolate is packed full of PEA, a natural stimulant that encourages the production of dopamine and promotes well-being.

**SEROTONIN**  
Serotonin is a neurotransmitter that promotes happiness. It is derived from tryptophan, an amino acid found in chocolate.

**THEOBROMINE**  
This addictive compound is able to block inhibitory neurotransmitters.



## FACTS

Eating chocolate may perk you up is actually not very high in caffeine as a cup of decaffeinated coffee.

Stearic acid is the main fat found in milk chocolate. It shows no risk of raising LDL. It raises HDL (good cholesterol).

Dark chocolate is a good source of iron, magnesium, zinc and potassium. It also lowers the risk of coronary disease.

Sugar is not responsible for cavities. Foods like bread, rice, soda, and fruit cause them because they produce acid which is harmful to tooth enamel.

Dark chocolate consumed in moderation is healthy. An average chocolate bar contains about 220 calories, which is low enough for a snack.

## 10 Health Benefits of Eating

C  
H  
O  
C  
O  
L  
A  
T  
E  
S

57% less heart disease when eaten 5x per week

## The Health Benefits of Chocolate

boosts blood antioxidant levels by nearly 20%

48% less risk of stroke

Improved skin quality, reduced wrinkles

5 WEEKS reduced body fat (BMI), 69% less pre-eclampsia

dark chocolate lowered blood pressure, reduced stress hormone levels after 2 WEEKS

**WHITE CHOCOLATE**  
COCOA SOLIDS: 0%

**STEARIC ACID**

**PALMITIC ACID**

POSTER Done by:  
1. Gjaswita R. Desai  
2. Shurradha Shivange  
3. Rutuja Kamble  
4. Shoa Mulla  
5. Dethviraj Bawat

# GREEN CHEMISTRY

Disadvantages

Uses  
of Green  
Chemistry



Green  
Chemistry

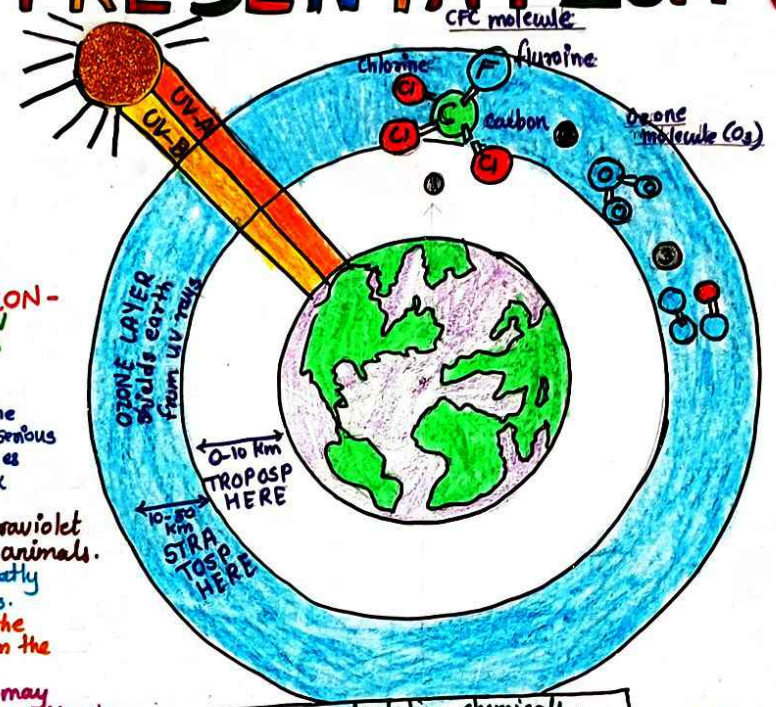
Tejashree Jadhav  
Aparna Bharati  
Anurag Patil

# OZONE LAYER DEPLETION POSTER PRESENTATION

Scientific evidence indicates that stratospheric ozone is being destroyed by a group of manufactured chemicals the chlorofluorocarbons (also called CFCs) and other industrial chemicals. These products are still used in air conditioners, cosmetic products, liquid in pressure steel bottles (sprays).

## EFFECT OF OZONE LAYER DEPLETION-

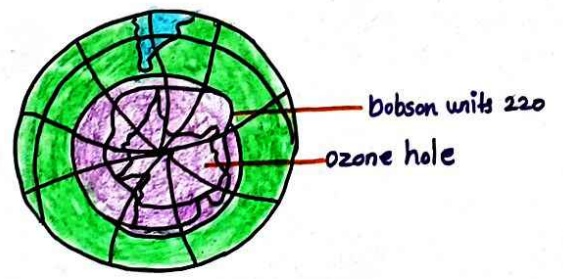
- Ozone layer depletion causes increased UV radiation level at the earth's surface which is damaging to human health. Human will be directly exposed to harmful ultra violet radiation of the sun due to the depletion of ozone layer. This might result in serious health issues among human. Such as skin diseases, cancer, sunburns, cataract, quick ageing weak immune system.
- Effect of animals :- direct exposure to ultraviolet radiation lead to skin and eye cancer in animals.
- Effect on Marine life :- planktons are greatly affected by the exposure to harmful UV rays. These are higher in aquatic food chain. If the planktons destroyed the organism present in the food chain are also affected.
- Effect on environment :- strong UV rays may lead to minimal growth flowering and photosynthesis in plants. The forests also have to bear the harmful effect of the ultraviolet rays.



- Ozone-depleting chemicals.
- 1) Halons (fire extinguishers)
  - 2) Methyl Bromide (pesticides)
  - 3) CFCs (aerosols, refrigerants, [chloro fluoro carbons] solvents)
  - 4) HCFCs (aerosols, refrigerants)
  - 5) Chlorine (Cl), Bromine (Br)
  - 6) Nitrogen oxide (NO), chlorine oxide, and electromagnetic radiation.

## SOLUTION FOR PREVENTING OZONE LAYER DEPLETION ARE AS FOLLOW-

- 1) Avoid the consumption of gases dangerous to the Ozone layer, due to their content or manufacturing process.
- 2) Minimize the use of cars :- The best transport option is urban, bicycle or walking. If you use a car to a destination, try to car pool with others to decrease to the use of cars in orders to poll.
- 3) Do not use cleansing products that are harmful to the environment and to us. Many cleaning products contain solvents and substances corrosive but you can replace these dangerous substance with non-toxic products such as vinegar or bicarbonate.
- 4) Buy local products :- In this way you not only get fresh products but avoid consuming food that has traveled long distance. As the more distance travelled the more nitrous oxide is produced.
- 5) Maintain air conditions as their malfunctions causes CFC to escape into the atmosphere.

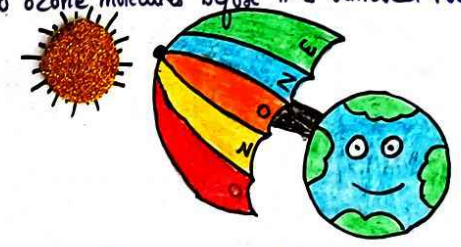


1] Ultra-violet rays split a chlorine atoms away from the CFC (chlorofluorocarbon) molecule.

2] The chlorine atom breaks up an ozone molecule, making a hole in the ozone layer.

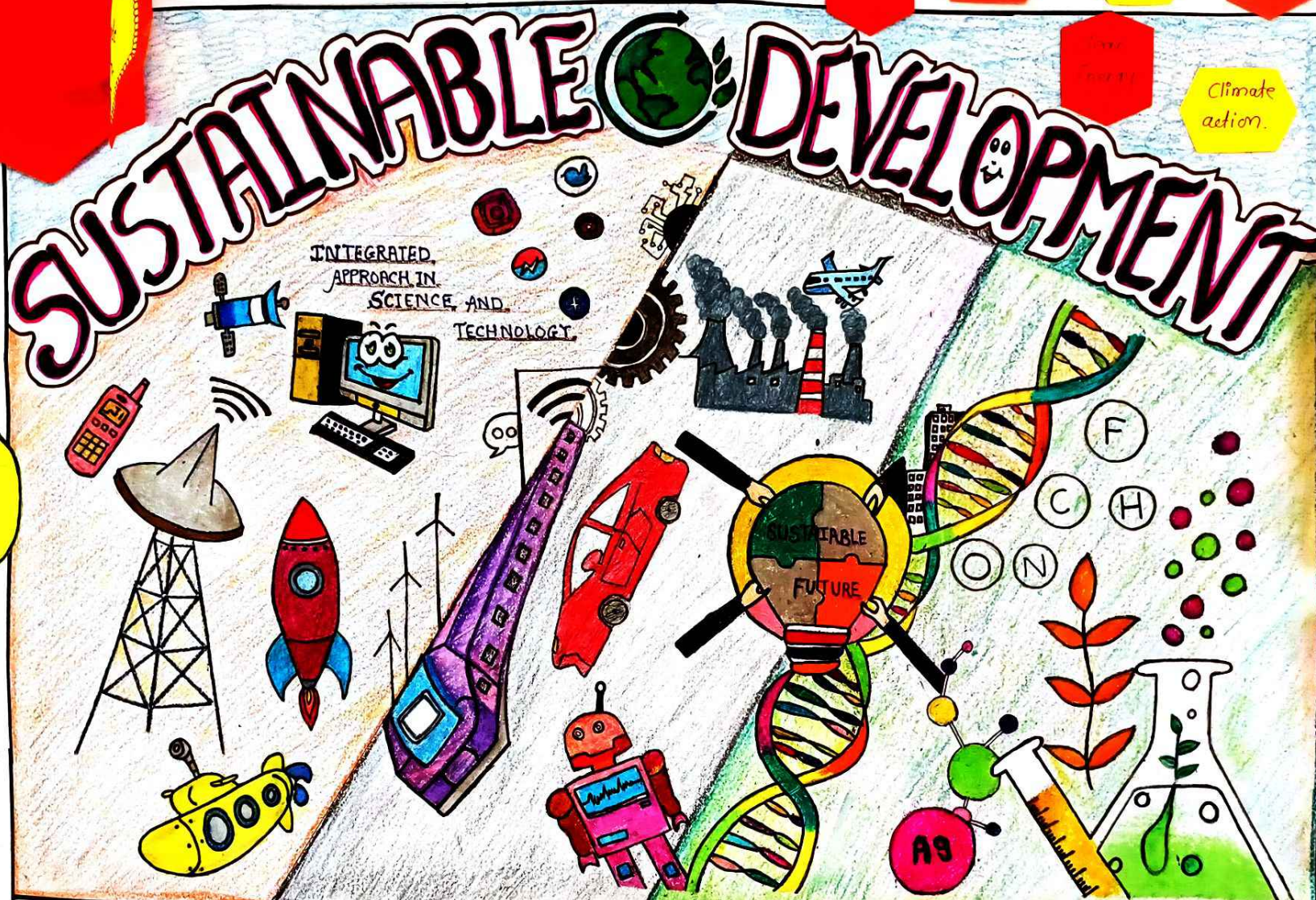
## Ozone Depletion-

When chlorine and bromine atoms come into contact with ozone in the stratosphere, they destroy ozone molecules. One chlorine atom can destroy over 100,000 ozone molecules before it is removed from stratosphere.



3] The molecule left behind are chlorine monoxide and oxygen (O2)

# SUSTAINABLE DEVELOPMENT



## THINK GREEN BE GREEN



GOALS

- Good Health
- Zero Hunger
- No Poverty
- Economic Growth
- Gender equality
- Quality Education
- Climate action

to GOVERN cooperation

The Four Pillars of Sustainable

- Human sustainability
- Social sustainability
- Economic sustainability
- Environmental sustainability

The Sustainable development goal passed on 1 January 2016.

TUESDAY	107/02/2022
LAD No.	
1	11
25	26
28	29
31	32
34	
1	2 3
4	5 6 1
7	8 9 1
10	11 12 1
13	14 15 1
16	17 18 2

was released in report and 121 out of India was ranked. It was ranked the 183rd in 2021.

start as the principle was by by d.

developmentomic and

- 1) Anurag Jadhav
- 2) Mansi Dangare
- 3) Swarupa Bhangade
- 4) Madhavi Singare
- 5) Swarup Mane

Poster No.

# COSMETIC CHEMISTRY

## DEFINITION

Cosmetics are products that are applied to the human body with or face to improve appearance, cleanse, condition, shield, or enhance it without affecting its structure or function. Common cosmetics include lipstick, mascara, eye shadow, foundation, rouge (blush), cleansers and skin lotion (Gel, hair spray, etc) perfume, Cologne.

Chemistry plays a huge role in creating as well as improving Cosmetic Products.



Depending on the colour of ink required, a number of different dyes are used in highlighter pens. Yellow highlighters commonly make use of a pyrene-based dye. Such as pyrene + fluorecein. Can also be used. Triphenylmethane dyes are used to make blue highlighters, and these can be mixed with pyrene-based dyes to produce green inks, or mixed with the rhodamine dyes used to make pink highlighters to produce a purple ink.



Mascara is a man made product chemistry is involved in mascara by the fact that some mascaras are hydrophilic meaning they are soluble in water (Non water proof) and have weak hydrogen bonds. The other kind (water proof) is called hydrophobic. This kind has stronger hydrogen bonds and is non polar. All mascara basically contains the same components of pigments, oils, waxes and preservatives. The founder of the cosmetic company, maybelline discovered the modern day mascara using charcoal and vaseline.



Hair Colouring is the practice of changing the colour of hair. The main reasons for this practice are cosmetic (to cover white hairs, to change to a colour regarded as more fashionable or desirable, or to restore the original hair colour after it has been discoloured by hairdressing process or sun bleaching). Hair dye is one of the oldest known beauty preparations, & was used by ancient cultures in many parts of the world.

**Nail polish**  
Modern nail polish consists predominately of a film-forming polymer dissolved in a volatile organic solvent. The most common polymer is nitrocellulose, although the more expensive cellulose acetates such as CAB are claimed to give better performance.

**Eye-lineaz**  
Eyelineaz is a cosmetic used to define the eyes. Traditional wax-based eye lines are made from about 20 components. About 50% by weight are waxes. Stearyl heptanoate is found in most cosmetic eyeliner. Typical pigments include black iron oxides as well as smaller amounts of titanium dioxide and Prussian blue.

**Perfumes**  
The main ingredients of a perfume are ethyl alcohol and essential oils. The concentration of essential oils such as agarwood, sandalwood, cedarwood determines how long it can last on your skin. A solid perfume has 20-30% essential oil. Eau de Parfum (EDP) has 8-15% and Eau de Toilette (EDT) has 4-8% essential oil.



Lipstick is one of the most commonly used cosmetic products - and a range of chemicals are required for its production. The choice of these ingredients is carefully considered to provide the desired colour, glossiness, and indelibility. A single stick of lipstick will contain several hundred different chemicals. Compounds, but there are a few substances and compounds whose inclusion is essential.

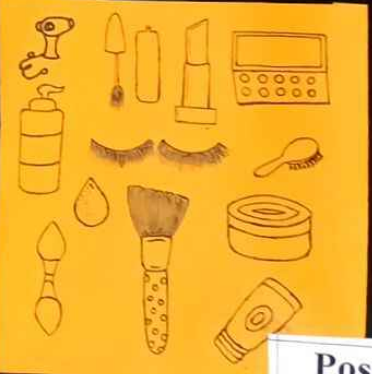


Eyeshadow is a form of cosmetic mainly found in a packed form or in some cases a dense liquid. It comes in all colors and grades to accentuate the eyes or can be used for special effects. Eyeshadow is not meant to be even so it doesn't have a foil label but typically it does have an ingredients label since different palette and companies don't usually share the exact same ingredients. Typically they commonly use the same type of ingredients through as in base fillers, binders, slip preservatives & in the case of a liquid oil is used.



The composition of foundation makeup consists of a variety of different chemicals mixed together to form either powder, liquid, or oil to use on skin to cover flaws and even skin tones. Some of these chemicals used include:

- Titanium dioxide (TiO<sub>2</sub>)
- Talc (Mg<sub>3</sub>(Si<sub>3</sub>O<sub>10</sub>)<sub>2</sub>(OH)<sub>2</sub>)
- Metallic stearates (C<sub>17</sub>H<sub>35</sub>O<sub>2</sub>)
- Lecithin (C<sub>42</sub>H<sub>82</sub>N<sub>8</sub>O<sub>8</sub>P)
- Sulfosuccinate (C<sub>20</sub>H<sub>37</sub>NaO<sub>7</sub>S)
- Glycine (C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>)
- Urea (C<sub>1</sub>H<sub>4</sub>N<sub>2</sub>O)
- BHT (C<sub>10</sub>H<sub>12</sub>O)
- Bentonite (Al<sub>2</sub>O<sub>3</sub>·2SiO<sub>2</sub>·2H<sub>2</sub>O)
- Stearic acid (C<sub>18</sub>H<sub>36</sub>O<sub>2</sub>)




# GREEN




# CHEMISTRY

USE renewable feeds-  
used as  
raw materi-  
el source  
cturing.


MAXIMISE  
ATOM  
ECONOMY




MINIMISE  
ACCIDENT



Avoid Chemical  
Derivatives




SAFER SOLVENTS  
AND  
CONDITIONS



SAVE  
EARTH  
SAVE  
ENVIRONMENT




USE CATALYST



When possible  
reactant  
be perfor-  
temper-  
pressure  
the n

INCREASE  
ENERGY  
EFFICIENCY




PREVENT  
POLLUTION




PREVENT  
WASTE



DESIGN SAFE  
CHEMICALS AND  
PRODUCTS



LESS HAZARDOUS  
CHEMICAL SYNTHESIS



CHEMICALS TO  
DEGRADE AFTER  
USE

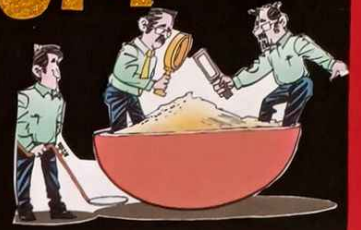


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19

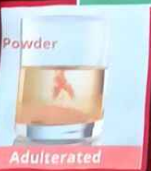


# FOOD ADULTERATION

## SAVE OUR LIFE FROM DANGER



### EXAMPLES



**ADDITION**  
Addition of small amounts of non-authenticated substance to mask inferior quality ingredient.

**ADULTERATION**  
Process in which the quality of food is lowered either by the addition of inferior quality material or by the extraction of valuable ingredient is called Food adulteration...

**REMOVAL**  
Removal of authentic and valuable constituent without purchaser's knowledge.



**REPLACEMENT**  
Complete or partial replacement of a food ingredient or valuable authentic constituent with less expensive substitute with the intention of circumventing on "Origin" and false declaration of the "process".



### TYPES

**Intentional adulteration**

• Done for financial gain.  
• Addition of Sand, marble chips, stones, mud, other filth, talc, chalk powder, water, mineral oil and harmful colour.

**Incidental Adulteration**

Happen due to carelessness and lack in proper hygienic conditions of processing, storage, transportation and marketing. eg. Pesticide residues, droppings of rodents, larvae in foods.

**Metallic Adulteration**

Occurs due to Arsenic from pesticides, lead from water, effluent from chemical industries, tin from cans.

### STANDARDS



### Additives:

• **Synthetic colours** used in different food items are harmful. Tartrazine is a synthetic lemon yellow azo dye primarily used as a food coloring. It is also known as E number E102. Coloring agent can cause itching, urticaria, runny nose and asthma.

• **Saccharin and cyclamate**, used as artificial sweeteners cause cancer of urinary bladder in long-run.

• **Nitrates and nitrites**, used as preservatives in packaged meat may cause stomach and gastrointestinal cancers.

• **Mono-sodium glutamate (MSG)** used as food flavour enhancer causes severe headache, nausea and occasionally chest tightness, burning sensation and asthmatic attack. Long-term use results in damage to brain.

• **Sodium meta bisulphate and Sulphur dioxide** are used in dry fruits, wines and beers to prevent discoloration and spoilage.

### WAYS TO AVOID ADULTERATED FOOD

- ✓ Buy only from authorized retail shops
- ✓ Go for packaged food items
- ✓ Remember to get the receipt
- ✓ Check & read the nutrition label
- ✓ Always check the expiry date of the product
- ✓ Do simple tests at home before using the product
- ✓ Beware of fake online shopping websites

DONE BY- TAHEESIN MULLA

GI PRATHAMESH KHARASE & GI PERNA WAGVEKAR

# FOR YOUR BETTER TOMORROW SAVE ENERGY TODAY

## SOURCES OF ENERGY

### RENEWABLE ENERGY

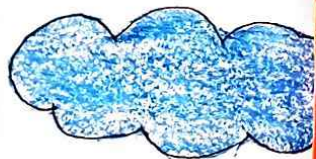
### NON-RENEWABLE ENERGY

#### Solar Energy

Solar Energy is a natural and abundant source of energy that is harnessed using a variety of technologies. It is a clean and sustainable source of power used to generate electricity.

Uses - Solar Energy is commonly used for solar water heating, solar home lighting, the heat from solar stills, the production of chemical and fertilizers, greenhouses, solar drying, and heating buildings. Cooling and providing a good source for electronic devices is also achieved by using solar energy.

#### WATER



Water is a renewable energy source that is harnessed using a variety of technologies. It is a clean and sustainable source of power used to generate electricity.

Uses - Water is commonly used for hydroelectric power generation, irrigation, and industrial processes. It is also used for domestic purposes like drinking and bathing.

#### WIND

#### Wind Energy

Wind Energy and wind power both describe the process by which the wind is used to generate mechanical power or electricity.

Uses - Mechanical power which is produced from wind can be used for specific tasks such as grinding grain or pumping water. Wind turbines produce electricity with the help of generators which is situated in it.

#### BIOMASS



Biomass is a renewable energy source that comes from plants and animals. It is a clean and sustainable source of power used to generate electricity.

Uses - Biomass is used to generate electricity, heat, and biofuels. It is also used for domestic purposes like cooking and heating.

#### COAL



#### Coal

Coal is a non-renewable fossil fuel that is combusted and used to generate electricity.

Uses - Coal is commonly used for electricity generation, industrial processes, and domestic heating. It is also used for the production of steel and other metals.

#### OIL



Oil is a non-renewable fossil fuel that is produced via the steam, which contains hydrocarbons that lived over a hundred million years ago.

Uses - Oil is commonly used for electricity generation, industrial processes, and domestic heating. It is also used for the production of plastics and other materials.

#### NATURAL GAS



Natural Gas is an odorless, colorless hydrocarbon gas consisting mostly of methane. It is used for heating and cooking.

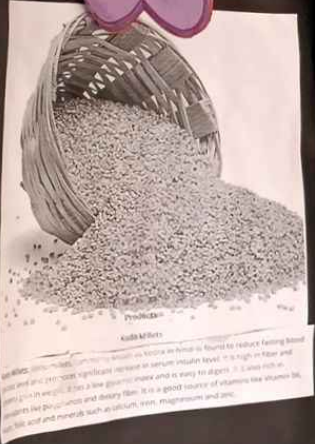
Uses - Natural Gas is commonly used for electricity generation, industrial processes, and domestic heating. It is also used for the production of plastics and other materials.

Nuclear Energy is a non-renewable energy source that is produced via the fission of atomic nuclei. It is a clean and sustainable source of power used to generate electricity.

Uses - Nuclear Energy is commonly used for electricity generation, industrial processes, and domestic heating. It is also used for the production of medical isotopes and other materials.

# Constitution In Millets

Kodo Millets



अश्विन श गणेश

Barnyard Millets



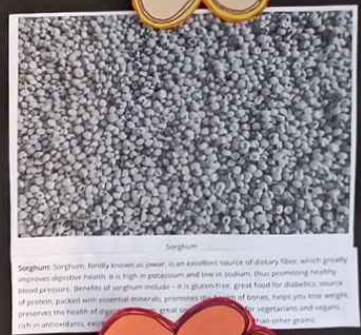
The following is a description of different types of millets & the benefits of incorporating them into our daily diet. Millets have exceptionally high nutrition value compared to other cereal low glycaemic index, high fibre content & alkaline nature, making them ideal to combat several lifestyle diseases.

Nareeta V. gharpade

Little Millets



Sorghum



India's Millets Map

INDIA'S MILLETS

Jowar is grown mainly in Madhya Pradesh, Karnataka, Rajasthan, and Tamil Nadu; Bajra mainly in Rajasthan, UP, Haryana, Gujarat, Jammu and Kashmir, Uttarakhand, Uttar Pradesh, Meghalaya, Gujarat, Madhya Pradesh, Maharashtra, Telangana, Karnataka, West Bengal, Odisha, Chhattisgarh, Andhra Pradesh, Tamil Nadu, Kerala.

**JOWAR**  
4.24 mha area  
4.78 mmt tonnes production

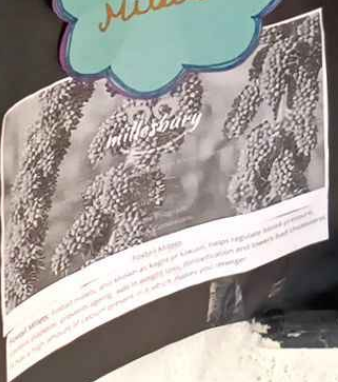
**BAJRA**  
7.75 mha area  
10.65 mmt tonnes production (2020-21)

**MILLETS GROWING**  
100 countries, traditional food for more than 500 million people

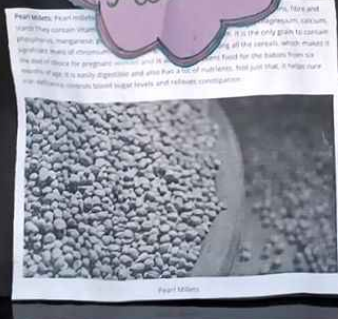
**MILLET CEREALS**  
New healthful millets need nutrition!

- Foxtail Millet
- Finger Millet
- Barnyard Millet
- Browwned Millet
- Little Millet
- Kodo Millet
- Pearl Millet
- Pennis Millet
- Sorghum

Foxtail Millets



Pearl Millets



Millets contain 65-75% of Complex Carbohydrates, 5-6-12% protein, fat, 2-5%, 15-20% Crude fibre and 2-5-3.5% minerals.

M.Sc I year sagark chav

Finger Millets



Girl's  
Wake up...&  
Enhance Ur  
Red Attitude

Don't Fear,  
Folic Acid Here...



Poster  
No.  
25

# WHY IS FOLIC ACID IMP DURING PREGNANCY...?



## What is the Folic Acid

Folic Acid is a human-made from folate. Vitamin B9. folate Cannot be Created by Our bodies So we need to get it from our diet folic acids name Comes from the Latin word 'folium' (leaf) as its found in leafy Vegetables..



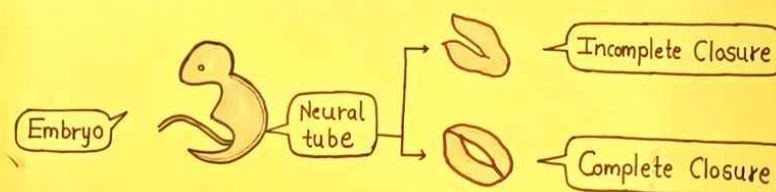
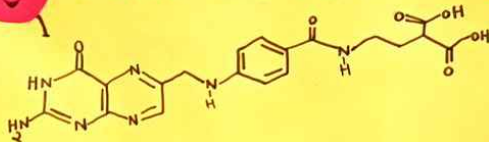
NUTRIENTS AND VITAMINS FOR PREGNANCY

## Pregnancy & Folic Acid

In the first month of Pregnancy neural tube defects Can Occur. They happen when the neural tube, which forms the brain & spinal cord, doesnt develop or Close Properly. This Can lead to Condition Such as "Spina bifida"



## Folic acid (Vitamin B9)

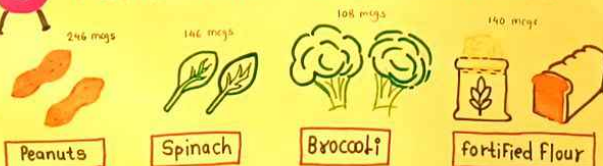


Folic acid is Converted Into folate in the body. folate Can also be obtained naturally from a number of foods. Additionally in Some Countries folic acid is added to foods such as rice pasta bread & cereals, a process known as folic acid fortification.

Low levels of folate have been linked to neural tube defect (NTD) development. If women take folic acid Supplements before during early pregnancy, it reduces the risk NTD's by around 70%. 400 micrograms of folic acid daily is the recommended dosage.



## Folic acid Fortification

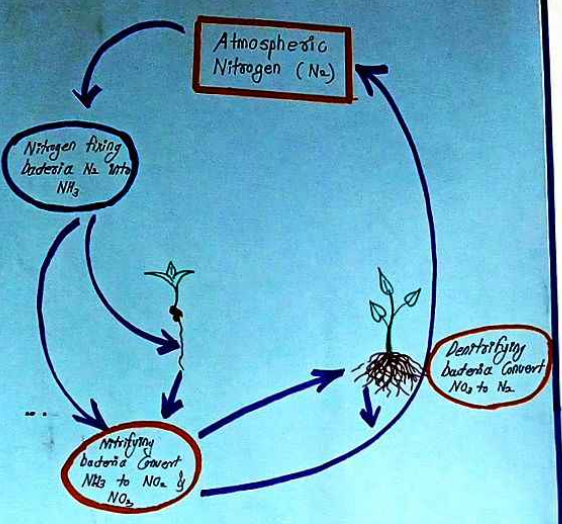


Quantities of folate/folic acid per 100 grams.

• Prevalence of NTD's in Europe  
9.1 per 10000 births  
Folic acid Supplementation but not folic acid fortification

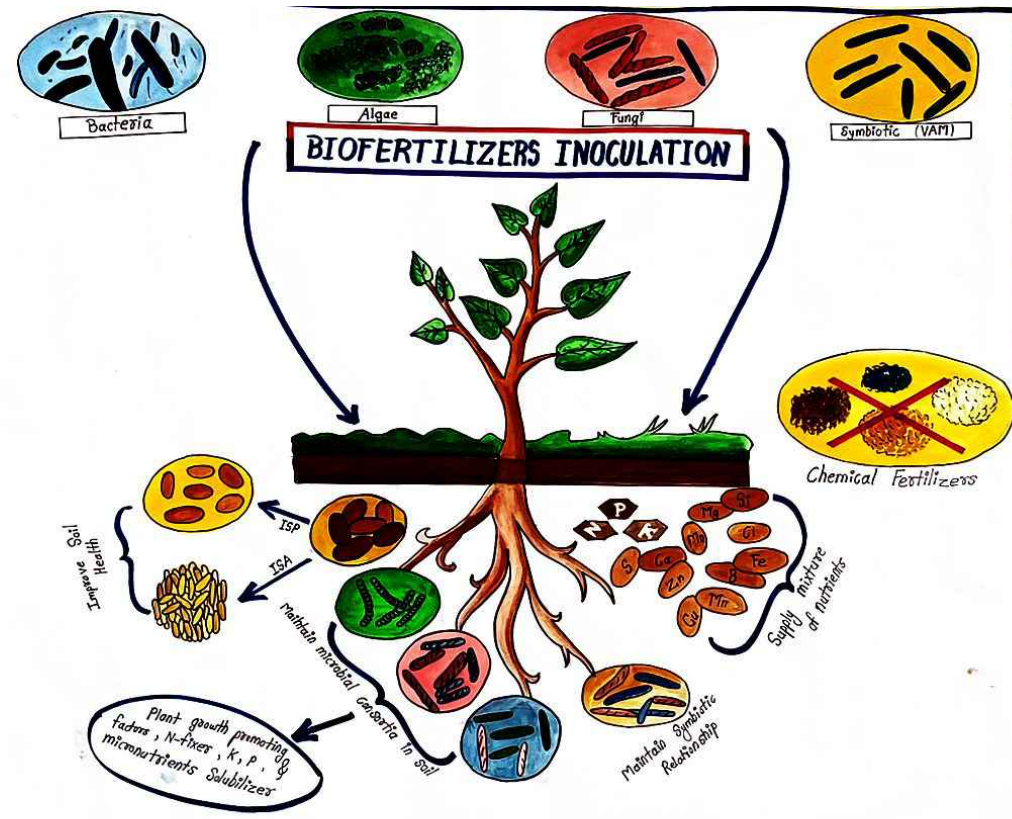
• Prevalence of NTD's in US  
5.3 per 10000 births  
folic acid Supplementation and folic acid fortification (1998)

The mechanism by which folate reduces NTD risk isn't Confirmed folate is important for the Synthesis of nucleic acids, the building block of DNA Large quantities of nucleic acids are required by the developing neural tube for DNA replication So folate deficiency may impacts this...



No adverse effect on plant growth & soil.

Replace 25-30% Chemical fertilizers



Eat clean and green  
Be Organic

Say No to chemical fertilizer,  
Use bio fertilizer

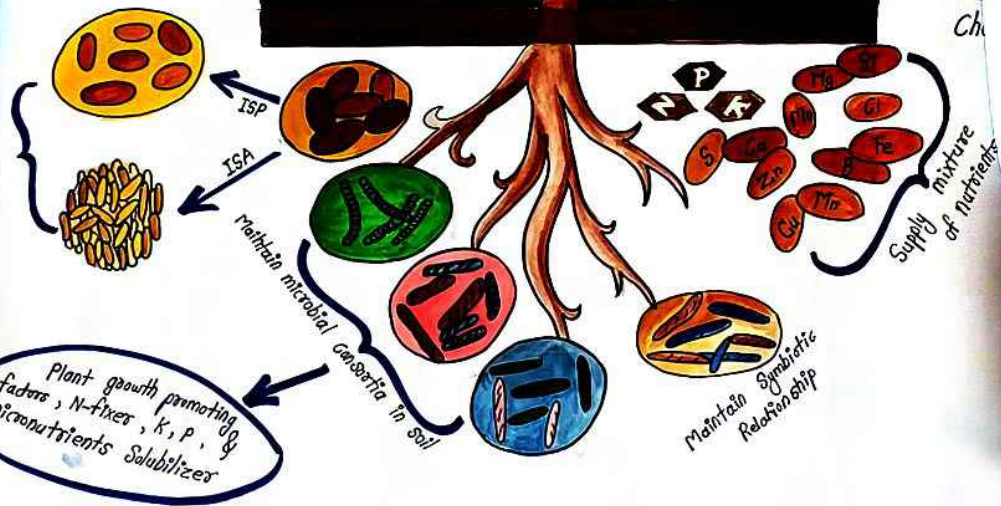
# BIOFERTILIZERS INOCULATION



Algae



Fungi



Plant growth promoting factors, N-fixers, K, P, & micronutrients Solubilizer

Maintain Symbiotic Relationship

Topic :-  
Biofertilizers

COME

# CONSTITUENTS OF MILLETS

## Introduction

Millets are group of highly variable, small seeded grasses widely grown around the world as cereal crops or grains for fodder and human food. These are important crops in the semiarid tropics of Asia, Africa (specially in India, Nigeria) and favoured due to high productivity and short growing season, under dry, high temperature condition. Millets are nutritious non glutinous and alkaline food, thus very easy to digest. excellent source of carbohydrates, protein and fatty acids.



## Nutrient Content of various millets

Crops	Protein (gm)	Fibre (gm)	Mineral (gm)	Iron (mg)	Calcium (mg)
Pearl millet	10.6	1.3	2.3	16.9	38
Finger millet	7.3	3.6	2.7	3.9	344
Foxtail millet	12.3	8	3.3	2.8	31
Proso millet	12.5	2.2	1.9	0.8	14



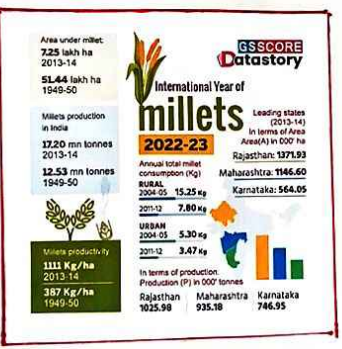
## Health Benefits of Millet

- 1) Helps in Weight Loss
- 2) Helps to decrease high blood pressure
- 3) Controls diabetes
- 4) Helps in slowing down muscle degradation
- 5) Helps in relieving menstrual cramps
- 6) Treats Coronary Artery Disorder
- 7) Reduces Risk of Colon Cancer
- 8) Helps in preventing celiac disease
- 9) Good Source of Antioxidants
- 10) Aids in sleep



## Millets for cardiovascular Disease

Millets are rich source of Mg, which is an important mineral for reducing blood pressure and the risk of heart attack. It helps to relax blood vessels enhance nutrient delivery by improving the blood flow and protects the cardiovascular system. Millets are also great source of Potassium (P) which further keeps blood pressure low by acting as vasodilator.



## Millets for Diabetes

Diabetes preventing effect of millets is primarily attributed to high fiber content and some antioxidant. They reduce the risk of type 2 diabetes because these are rich in magnesium. Magnesium is considered one of the most important mineral for increasing the efficiency of insulin and glucose receptors in the body by preventing these diseases. Millets have low glycemic index compared to most other cereals hence it reduces hunger.

## Conclusion :

Millets improve gastrointestinal system because of high fiber content and eliminate the problems like constipation, excess gas, bloating and cramping by regulating digestive processes, and reduce chances of serious conditions like peptic or colon cancer. Millets having lower glycemic index (GI) as compared to most other cereals and are beneficial for diabetic patients. Gluten sensitivity and celiac disease have been common problem these days. Millets being deficient in gluten provide protection against people affected by celiac disease.

- 1) Shreeyash .Ajay .Yadav
- 2) Mahesh Pardit Kumbhar
- 3) Yogesh Dinkar Jadhav

# HELIUM

## Helium

Discovered by Pierre Janssen and Norman Lockyer in 1868.

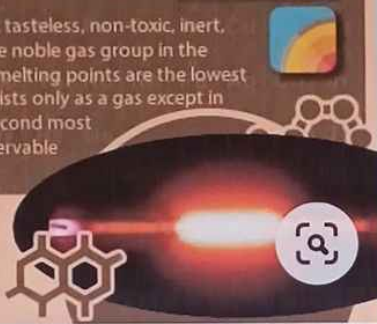
Melting point 0.95 K (-272 °C, -457.96 °F)  
Boiling point 4.222 K (-268.9 °C, -452 °F)

Helium is a colorless, odorless, tasteless, non-toxic, inert, monatomic gas that heads the noble gas group in the periodic table. Its boiling and melting points are the lowest among the elements and it exists only as a gas except in extreme conditions. It's the second most abundant element in the observable universe.

Helium  
2  
**He**  
4.002

### DID YOU KNOW...

Helium was discovered on the Sun before it was found here on Earth.



## Helium

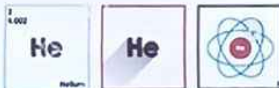
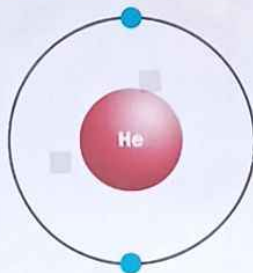
## Element # 2

### Information:

Name & Symbol: Helium, He  
Discovery: Pierre Janssen, 1868  
Appearance: gas  
Electron configuration:  $1s^2$   
Standard atomic weight: 4.002602  
Covalent radius: 28 pm  
Van der Waals radius: 140 pm

### Isotopes:

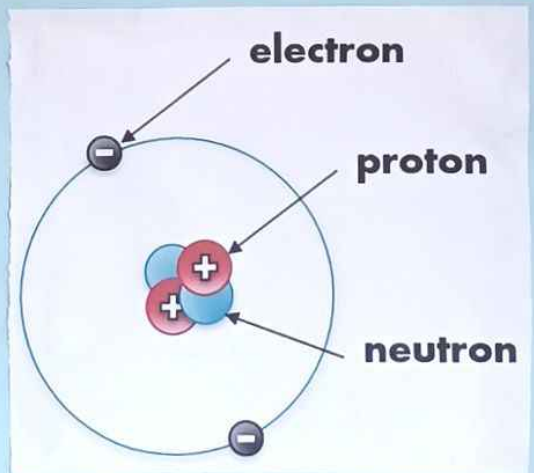
$^3\text{He}$ : 0.00027  
 $^4\text{He}$ : 99.99973



## Helium

# He

4.002602



- Name:- 1) Shrikrushna R. Pawar  
2) Sourabh S. Patil  
3) Shivam S. Gaikwad  
4) Atharv S. Deuskar

## HELIUM USES

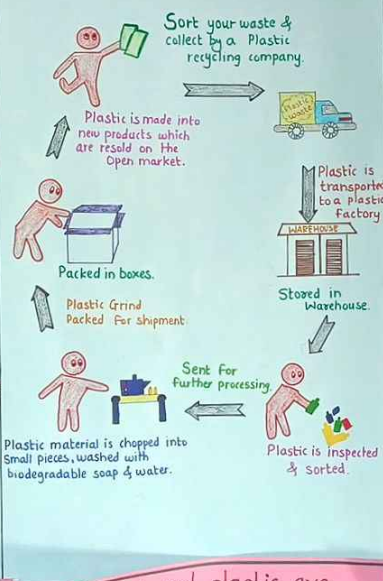
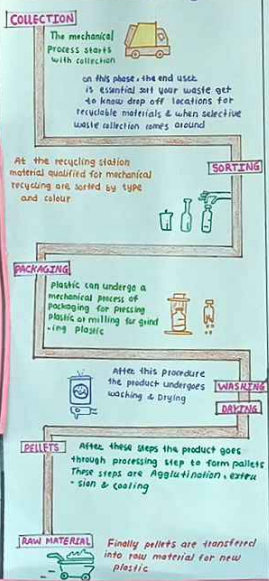
Global Share of Helium Applications





# RECYCLE PLASTIC

## Mechanical Recycling



You can't reuse, refuse it.

Use paper, steel, or bamboo straws instead of plastic.

Use reusable or degradable shopping bags.

Plastic pipes are predominantly manufactured from thermoplastics, which are 100% recyclable and sustainable.

The sand and plastic are mixed at very high temperatures and are then compressed into bricks.

Oceanic clothes are made from 100% recycled plastic bottles, without being mixed with other materials.

# Air purifying plants

Rubber Plant

Rubber plant has very thick broad leaves with a large surface area. Because of the large surface area, it's perfect for purifying the air. Rubber plant increases humidity within a room & prevents the pollutants & can other unwanted particles to turn into dust & harm your respiratory system. According to scientific research, rubber plants leaves can absorb airborne chemicals. They also absorb exhaled CO<sub>2</sub> & convert it into breathable oxygen.

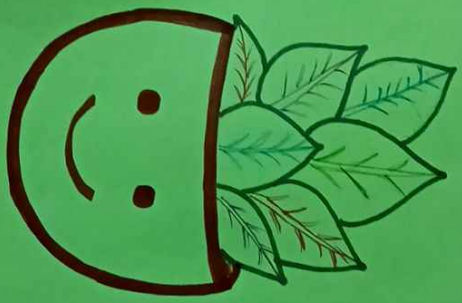


Areca Palm

Areca Palm is a natural cooler that has ability to purify the environment it's placed in by removing dangerous chemicals such as xylene formaldehyde & toluene. As with all plants, the Areca palm is biologically engineered to take in CO<sub>2</sub> & release oxygen. This plant has the ability to not just filter the air but also add moisture to the surroundings, absorbing all the toxins, leaving the air clear & fresh.

Feel free to

Plant a tree ...



# Water purifying plants

Eucalyptus tree



Eucalyptus tree is considered as a natural purifier of water. This tree with high transpiration rate, with long tap roots that suck up the water from ground which could also dry up water bodies. These trees absorb the surplus waste water & release pure water vapour into the atmosphere. That is, they add a plenty of oxygen into the atmosphere.

Pine tree

Pine trees can contain a huge amount of sap. This sap contains vitamins, minerals, sugar but is primarily made up of water since the tree is like one big filter, this sap is perfectly fine to drink. MITI researchers found that xylene from a white pine tree when used to filter contaminated water, removed 99% of E. coli bacteria.

