



THE TIMES OF INDIA

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STUDENT EDITION

TUESDAY, MAY 25, 2021



WEB EDITION

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CBSE, UNICEF join hands to award **YoungWarrior** certificate

The Central Board of Secondary Education (CBSE) has started a movement called 'YoungWarrior' to combat Covid-19 in the country. Through the heads of all its institutions, the initiative aims to engage millions of young people to lead action against Covid-19. The CBSE, along with the ministry of youth affairs and sports, ministry of health and family welfare, YuWaah-UNICEF, and a multi-stakeholder consortium of over 950 partners, are activating the #YoungWarrior movement to engage five million young people to lead action against Covid-19, and impact 50 million people.

- Any student and/or teacher between the age group of 10 and 30 years can join this movement, and can help society safeguard themselves, their families, their communities, and the country
- This engagement will comprise a series of easy and real-life tasks, with the #YoungWarrior earning certificate for their actions. These actions include promoting access to verified health and essential services, vaccine registration, Covid-appropriate behaviours, myth busting etc



HOW TO JOIN #YOUNGWARRIOR MOVEMENT?

To join the #YoungWarrior movement, follow these simple steps

1 On WhatsApp: Type YWA and send it to +91 96504 14141 OR simply give a missed call to 080-66019225

2 Once you join, you can motivate 10 or more young people (10-30 yrs) to join the movement

3 Pledge to take action against Covid-19 by posting message with the phrase 'I am a #youngwarrior' on social media, tagging friends

4 After the completion of the tasks, you will be awarded a UNICEF certificate

Quote unquote

India did not take the vaccines seriously in 2020 unlike other nations. This crisis should help India learn its lessons, especially in the healthcare sector. It is ok to make mistakes as long as we accept it. When it (Covid-19) gets over, we must change. We all have changed to an extent. The change will be in personal sphere, the business sphere, and how and what we can learn as a nation. The only good thing about a crisis is a lesson

Chetan Bhagat, author



Gautam Adani beats China's Zong Shanshan to become Asia's second richest man

Adani Group's founder and chairman Gautam Adani took the spot of Asia's second richest man from China's Zhong Shanshan, according to data compiled by Bloomberg. Adani's wealth rose by \$625 million to \$66.5 billion, as per data available on the Bloomberg Billionaires' Index. At the same time, Shanshan's wealth dropped by \$78 million to \$63.6 billion. Adani's wealth has soared over \$32 billion in 2021 so far, the third-highest wealth surge this year after Bernard Arnault and Miriam Adelson.

IN THE ELITE CLUB

Adani is just behind Reliance Industries' Mukesh Ambani whose total net worth stood at around \$76 billion

The commodity trader turned industrial tycoon at present owns some of the biggest and most important infrastructure projects in the country, including the majority of its ports, and some of the busiest airports in the country, including the Mumbai International Airport

Adani Group companies have been on an acquisition spree, utilising the depressed asset valuations caused by the Covid-19 pandemic



China becomes 2nd country to drive rover on Mars



China's remote-controlled Zhurong rover drove down the ramp of its landing capsule and onto the Martian surface, Beijing's space administration said on Saturday, making China the second country after the United States to successfully deploy a land vehicle on the Red Planet.

- Zhurong touched down last week and underwent diagnostics tests for several days before joining the US rovers Curiosity and Perseverance, but separate explorations of Mars.
- The rover, which sent its first round of images back to Earth earlier this week, is expected to be deployed for 90 days, during which it will

study Mars' surface and atmosphere
Zhurong, named after a Chinese mythical fire god, is a six-wheeled solar-powered rover, which resembles a blue butterfly, and has a mass of 240 kg. It also has an expected lifespan of at least 90 Martian days (about three months on Earth)

The US was the first country to land a robot on Mars. US space agency NASA landed its Viking-2 mission in 1976 in Utopia Planitia. This colossal basin, more than 3,000 km wide, was likely formed by an impact early in the planet's history. There is some evidence pointing to it having held an ocean long ago. In February, the US landed the Perseverance robot in a deep crater near Mars' equator called Jezero

Neena Gupta's tell-all autobiography to hit the shelves on June 14

Veteran actress-director Neena Gupta's tell-all autobiography 'Sach Kahun Toh' will hit the stands on June 14, publisher Penguin Random House India has announced. From her time at the National School of Drama (NSD) to moving to Bombay (Mumbai) in the 80s, and her single parenthood, the book will share Gupta's life story in the most "unapologetically honest" manner.



BOOK

The book addresses issues like casting couch, film industry politics, and also talks about what it takes for a young actor to survive without a godfather or guide

Centre asks social media to remove content referring to 'Indian Covid variant'

The ministry of electronics and information technology has asked all social media platforms to immediately remove all content that refers to or implies 'Indian variant' of coronavirus. In an advisory to social media platforms, the MEIT said, this is in line with earlier advisories to curb fake news, misinformation concerning coronavirus on platforms.

- The ministry said, it has come to its notice that a false statement is being circulated online, which implies that an "Indian variant" of coronavirus is spreading across the countries. "This is completely false. There is no such variant of Covid-19 scientifically called as such by the World Health Organisation (WHO). The WHO has not associated the term "Indian variant" with the B1617 variant of the coronavirus in any of its reports", the ministry said
- This has already been clarified by the health ministry on May 12, and now social media platforms have been asked to remove all contents, which refers to an "Indian variant" of Covid.



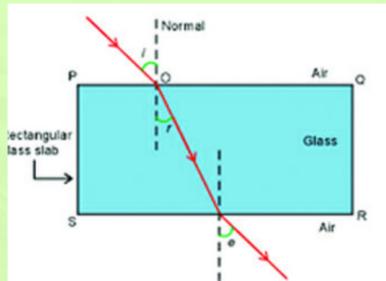
THE JOURNEY OF LIGHT

FROM ONE MEDIUM TO THE OTHER

CLASS: X
SUBJECT: PHYSICS
TOPIC: LIGHT REFRACTION & REFLECTION

Light hits everything. Some substances let it move at a constant speed, but others slow it down. When the speed of light changes, it bends, and hence objects might appear bent, closer, or larger than they really are.

- The change in direction of light when it passes from one medium to another obliquely is called **REFRACTION** of light.
- The phenomenon of bending of light around the corner of an obstacle is known as **DIFFRACTION** of light.
- Refraction of light takes place at the boundary between two media.



- The angle between incident ray and normal at the point of incidence is called **ANGLE OF INCIDENCE** ($\angle i$).
- The angle between the refracted ray and the normal at the point of incidence is called the **ANGLE OF REFRACTION** ($\angle r$).
- In refraction of light, the angle of refraction is usually not equal to the angle of incidence. ($\angle i \neq \angle r$).
- The angle of emergence ($\angle e$) is the angle of the light coming out of a medium.
- The angle of emergence is equal to the angle of incidence ($\angle i = \angle e$).
- A medium in which the speed of light is more is known as **optically rarer medium**.
- A medium in which the speed of light is less is known as **optically denser medium**.

- Speed of light in air is 3×10^8 m/s.
- Glass is optically denser than air.
- When a ray of light goes from a rarer medium to a denser medium, it bends towards the normal.

- When a ray of light goes from a denser medium to a rarer medium, it bends away from the normal.
- The perpendicular distance between the original path of incident ray and the emergent ray coming out of the glass slab is called **LATERAL DISPLACEMENT** of the emergent ray of light.
- If the incident ray falls normally (perpendicularly) to the surface of a glass slab, then there is no bending of the ray of light and it goes straight.
- When a coin is under water then due to refraction of light, a virtual image of the coin is formed nearer to the water surface. As the virtual image of coin which we see is nearer to the water surface, the coin appears to rise. Other examples are, a pool of water appears to be less deep than it actually is, a stick partly immersed in water appears to be bent at the water surface.

Laws of refraction of light

I law

The incident ray, the refracted ray and the normal at the point of incidence all lie in the same plane for the two given transparent media.

II law (Snell's law)

The ratio of sine of angle of incidence to the sine of angle of refraction is constant for a given pair of media.

$$\sin i / \sin r = \text{constant}$$

- **Refractive index of the medium n_m = Speed of light in air / Speed of light in medium = c/v**
- $c = 3 \times 10^8$ m/s.

$$\text{Refractive index} = \sin i / \sin r$$

- When light is going from one medium (other than vacuum or air) to another medium, then the value of refractive index is called **RELATIVE REFRACTIVE INDEX**.

■ **Relative refractive index of medium 2 with respect to medium 1 = n_{21} = Speed of light in medium1 / Speed of light in medium2**

■ **Relative refractive index of medium 1 with respect to medium 2 = n_{12} = Speed of light in medium2 / Speed of light in medium1.**

■ **The refractive index of light going**

from medium1 to medium2 is equal to the reciprocal of refractive index for light going from medium2 to medium1.

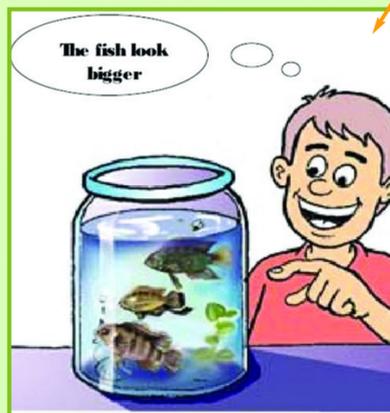
$$n_{12} = 1/n_{21}$$

- The power of a lens is a measure of the degree of convergence or divergence of light rays falling on it.

Power of a lens $P = 1/\text{focal length of the lens in metres}$.

- Lens of shorter focal length has more power whereas a lens of long focal length has less power.

- The unit of power of a lens is **DIOPTRE (D)**. One dioptre is the power of a lens whose focal length is 1 metre.



- The power of a convex lens is positive and that of a concave lens is negative.

When the refractive index of a medium relative to lens is one, a convex lens will behave as an ordinary glass plate.

- 'The refractive index of diamond is 2.42'. The meaning of this statement is the ratio of speed of light in air to the speed of light in diamond is equal to 2.42.

- Kerosene has less mass density than that of water, but it is optically denser than water.

- A convex lens is used as a magnifying glass because when the object is kept within the focal length of the lens, it forms a virtual, erect and magnified image.

INTERESTING FACTS ON REFRACTION

- Most refraction in the eye occurs when light rays travel through the curved, clear front surface of the eye. The eye's natural lens also bends the light rays. Even the eye's tear film has refractive ability.
- If you have an aquarium or fish bowl at home, you might notice the fish look bigger when you look through the side due to refraction.
- The lens of a telescope or microscope uses refraction of light to make things look closer than they are.
- The twinkling of stars happens as light refracts when it passes through the different layers of the atmosphere.
- When refraction happens in a cloud with hexagonal ice crystals, a unique effect called **sun dog** (an optical phenomenon that consists of a bright spot to one or both sides of the sun) is created. The halo is what creates the illusion of multiple suns.

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MY SCHOOL PROJECT

Eco-friendly dishwasher

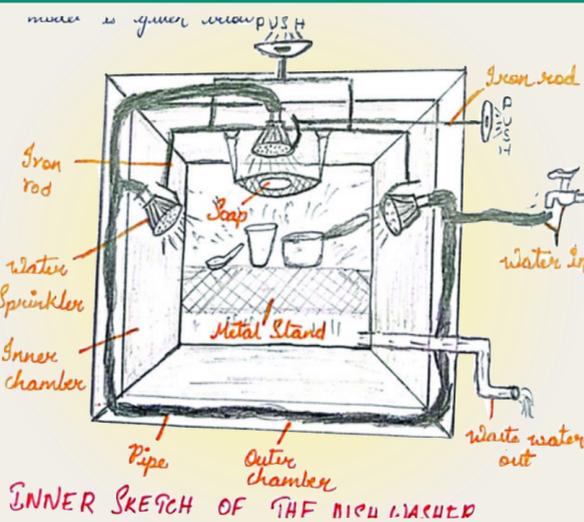
OBJECTIVE

- My mother is a teacher and returns home around 5 pm. At home she doesn't stop to rest and gets busy with all the household work and sleeps around 11 pm. Not just my mother, but women in many households find themselves tied down with daily household chores.

- Looking at this, I thought of making a machine which could make household work easy, be affordable and at the same time be eco-friendly.

THE SURVEY

- I carried out a survey and found that a lot of time and effort goes into one household chore, i.e., washing dishes. So I decided to make an eco-friendly and affordable dishwasher. I made this by following one basic principle: Superfast jet of water can clean and wash anything and everything.



THE MODEL

- This model is simple and can be operated manually. It does not even require electricity to run.
- Cleaning is done in three steps (see diagram)

STEP 1: Keep the utensils on the metal stand and push down the round button on the top and hold for few seconds; then release.

STEP 2: Push the side button and hold for few more seconds which helps in cleaning the utensils with

soap solution; then release

STEP 3: Then again push down the top run button and hold for few more seconds to complete the cleaning process

NOTE: you can keep the LOCK PIN instead of pressing and holding the button. You can even cycle the pedals if the load is above 5 kg.

Once done, your vessels are shining and clean! The gadget not only makes the work easy but also ensures the vessels are 100% clean and germ free.



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Be sharp at MUN

What is MUN?

MUN or Model United Nations is an educational activity which allows students to get a glimpse of how things actually work in the UN and internationally.

After filling the form for the MUN, one gets an agenda and a council as well as a country to represent.

The common councils in MUN are

- UNHRC (United Nations Human Rights Commission)
- UNSC (United Nations Security Council)
- WTO (World Trade Organisation)
- WHO (World Health Organisation)

In the form for MUN, one can select the council of choice and country as well. You can select three countries.



How do you begin research?

Start with the location of the country if you have absolutely no idea about it. Then move on to its significance in the world and its position globally.

Work your way through your agenda and your country's situation in that respect, your country's foreign policy and the trade policy. Additionally, knowing about the laws your country has implemented with respect to issues being discussed and the status of implementation is also beneficial. Also, you have to prepare a general speech of 120 seconds.



Some other points to watch out for:

- Know which countries are your allies.
- Learn all MUN terminologies. It'll be useful.
- Observe and learn to be diplomatic.
- Some sites to use for accurate info: BBC, Britannica.
- Also visit government websites for authentic information.

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