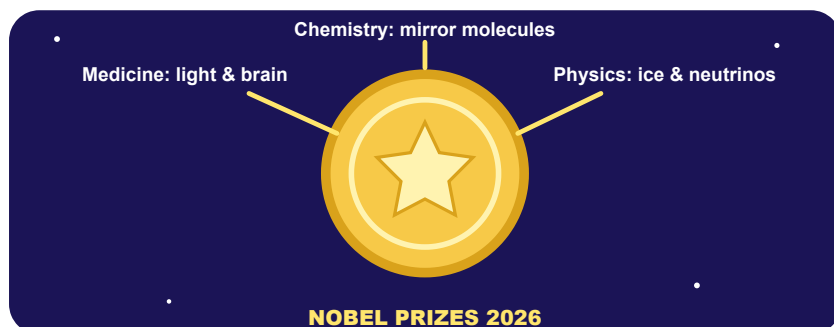




LEAD STORY · NOBEL PRIZES

Nobel week: light, ghost particles and mirror-image molecules



Every October the world waits for the **Nobel Prizes**, the most famous awards in science. This week three were announced: **Medicine on Monday 5 October**, **Physics on Tuesday 6 October** and **Chemistry on Wednesday 7 October**. Each one rewards a curious idea that took years, sometimes decades, to prove.

The Medicine prize went to **Karl Deisseroth, Peter Hegemann and Georg Nagel** for light-gated ion channels, the tools behind a field called **optogenetics**. The Physics prize went to **Francis Halzen** for helping to build the IceCube neutrino detector in Antarctic ice. The Chemistry prize went to **Henri Kagan and Kenso Soai** for work on molecules that come in left- and right-handed forms. Read about each on the next page.

Did you know?

Each Nobel Prize in Physics, Chemistry and Medicine carries **12 million Swedish crowns** for 2026, and the medals are handed over on **10 December**, the day Alfred Nobel died in 1896.

REMEMBERING

Alfred Nobel's big idea

Alfred Nobel was a Swedish chemist and inventor. In his will he asked that his fortune be used for prizes to those who gave "the greatest benefit to humankind". The first prizes were given in 1901. Who do **you** think has helped the world this week?

Numbers of the week

3

Nobel Prizes in science announced

82

age of physics winner Francis Halzen

21

dusty star systems studied by the Webb telescope

7

days of World Space Week (4 to 10 October)

In this issue

- **p. 2** The three Nobel Prizes explained
- **p. 3** Space: Webb, World Space Week
- **p. 4** Brain corner, poem, next week

Try this today

Stand in front of a mirror and raise your right hand. Which hand does your reflection raise? Now hold up both hands, palms facing you. Can you turn your left hand so it exactly covers your right? (Try it!)

Answer on page 4.

KIDS' CORNER

Your work could be here

Edulin's Kids' Corner publishes children's drawings, articles, poems and stories. Ask a parent or teacher to email a clear photo or the text to **great@edulin.in** with your first name, class and school, and a line saying they agree to it being published.

The 2026 Nobel Prizes, explained simply

MEDICINE · ANNOUNCED 5 OCTOBER

Switching brain cells on with light

Karl Deisseroth, Peter Hegemann and Georg Nagel share the prize for light-gated ion channels. Ion channels are tiny doors in the wall of a cell. Hegemann and Nagel studied tiny green algae and found proteins that open such a door **when light shines on them**. Deisseroth then put these proteins into nerve cells, so scientists can switch chosen brain cells on or off with a beam of light. This method is called **optogenetics**.

Why it matters: it helps researchers understand how the brain works, including problems such as fear, sleep and movement, and it may one day help in treating brain illnesses.

PHYSICS · ANNOUNCED 6 OCTOBER

Catching "ghost particles" in Antarctic ice

Francis Halzen, born in Belgium and working at the University of Wisconsin–Madison in the USA, wins the prize for decisive contributions to the **IceCube Neutrino Observatory**. Neutrinos are so tiny and so shy that trillions pass through your body every second without touching you, which is why they are called "ghost particles". Halzen realised that the thick, clear ice at the South Pole could act as a giant detector. IceCube uses a whole **cubic kilometre of ice** filled with light sensors. When a neutrino very occasionally bumps into the ice, it makes a faint blue flash.

Why it matters: IceCube found neutrinos that travelled to us from **far outside our solar system**. Neutrinos are a brand-new way to look at the universe, besides ordinary light.

CHEMISTRY · ANNOUNCED 7 OCTOBER

Left hand, right hand: molecules with a twist

Henri B. Kagan and Kenso Soai win for discoveries in **asymmetric synthesis**. Some molecules come in two forms that are mirror images of each other, like your left and right hands. They look alike but can behave very differently in the body: one form may be a useful medicine and its mirror twin may not be. Kagan and Soai discovered surprising ways for chemists to make mostly one form, including a reaction in which a small excess of one form helps to **make more of itself**.

Why it matters: making the right "hand" matters a great deal when medicines are made. Their work also hints at how life on Earth may have come to use mostly one hand of its building blocks.

Science and numbers

1. The Medicine prize was announced on 5 October and Chemistry on 7 October. How many days apart?
2. A Nobel prize is 12 million crowns. If it is shared equally by 3 people, how many crowns does each get?

Answers on page 4.

Try it: a "light switch" in your kitchen

Plants and algae also react to light. Place a potted seedling on a windowsill for three days. Which way do the leaves lean? That is **phototropism**: living things responding to light. Draw what you see each day.

Webb finds the dusty aftermath of planet crashes



On **7 October** astronomers using NASA's **James Webb Space Telescope** reported clues that worlds about the size of **Mars** have smashed into each other around young stars. Webb studied **21 stars** surrounded by unusually thick clouds of dust, called "extreme debris disks". Only about **1 in 100** young stars has such a disk.

What did they find?

- Webb sees **heat** (infrared light) that dust gives out.
- In some disks the dust is rich in **silica**, the material in sand and glass. The team thinks that is the sign of a very hard crash that turned rock into vapour.
- Other disks lack silica and may come from gentler bumps between smaller bodies.
- The silica-rich disks were found only around stars **younger than 300 million years**.

Why does it matter?

- Scientists think our own Moon formed when a Mars-sized world called **Theia** hit the young Earth.
- These dusty disks may show **how often** such crashes happen around other stars.
- Nobody saw a crash directly. Scientists worked out what happened from the dust, like detectives reading clues.

SPACE IN BRIEF

World Space Week

From **4 to 10 October** people in many countries celebrated space. This year's theme was "**Rocket Revolution**", about how new rockets make it easier and cheaper to reach space.

Hunting for ice on the Moon

NASA announced three investigations that will look for underground shelters, hidden ice and dangerous conditions on the Moon's surface, to prepare for future explorers.

Trishna: water from space

Trishna is a planned India–France Earth-watching satellite meant to measure heat and water on land and in the seas, which can help farmers and cities.

India's first private rocket

In July, on **18 July 2026**, Skyroot Aerospace's **Vikram-1** became India's first privately built rocket to reach orbit, lifting off from Sriharikota. It is a good example of the "rocket revolution" in our own country.

Edulin Space Scientist

Want to learn more? Edulin's **Space Scientist** missions for Classes 1 to 5 take you on a trip through the solar system, with games and challenges along the way.

Make it: crash a planet (safely!)

Spread a thin layer of flour on a tray. Drop a marble gently from low down, then from much higher. Which crater is bigger and which throws more flour out? The faster the crash, the more material flies out, which is why big planet crashes make so much dust. Ask an adult first and clean up well.

Puzzles, a poem and the week ahead

Riddles

- A.** I am tiny and I pass through you without a sound. Scientists catch me in ice. What am I?
- B.** I am green, I live in water and I lean towards the light. What am I?
- C.** You have two of me. We look alike but we cannot be laid exactly on top of each other. What are we?

Nobel week: true or false?

1. Optogenetics uses light to switch cells on or off.
2. IceCube is a telescope floating in space.
3. A left hand and a right hand are mirror images.
4. Webb sees infrared light, which we feel as heat.
5. Nobel Prizes were first given in 1901.

Secret message

Each letter is moved **one place forward** in the alphabet (A becomes B). Can you decode it?

O F V U S J O P H I P T U

Hint: it is a ghost particle.

Number crunch

1. Webb studied 21 disks and 8 were silica-rich. How many were not?
2. World Space Week runs from 4 to 10 October. How many days is that, counting both?

FROM THE KIDS' CORNER

Light

A poem by Ria, Class 5, Greenfield School, Pune (sample content)

A seed sits still in the quiet ground,
It cannot see, it makes no sound,
Then morning comes with gold and gleam
And wakes it from its sleepy dream.

Light is a switch for leaf and tree,
For cells in the brain and for you and me.
I turn my face to the sun and grin,
And let the day come in.

The week ahead

- 12 Oct** The **Nobel Prize in Economic Sciences** is announced.
- 14 Oct** Ask your class: what is **one question** you are curious about?
- 15 Oct** **World Students' Day** in India, the birthday of Dr A. P. J. Abdul Kalam.
- 16 Oct** **World Food Day.** Waste no food today!

Parents & teachers

The Nobel announcements are a good moment to ask your child: "**What question are you curious about?**" Every prize this week began as a child-sized question. Encourage experiments at home and celebrate effort over marks.

Answers

Page 1: No. Your hands are mirror images, so the left hand cannot be turned to cover the right exactly. **Page 2:** 1) 2 days. 2) 4 million crowns each. **Riddles:** A) A neutrino. B) An alga (algae). C) Your hands. **True or false:** 1) True. 2) False, it is in the ice at the South Pole. 3) True. 4) True. 5) True. **Secret message:** NEUTRINO GHOST. **Number crunch:** 1) 13. 2) 7 days.

Draw it! Challenge of the week

Draw "**a ghost particle passing through my house**", "**two planets crashing**" or "**the day I switched on my idea**". Use any colours you like. Ask a parent or teacher to send a clear photo to great@edulin.in with your first name, class and school, and a line saying they agree to it being published. The best pictures will appear in the Edulin Kids' Corner.