



CurioBuddy's

The  
**Curious**  
At & MA SARAZ PROMOTIONS  
PUBLICATION

## Science of Colour

Designed for curious minds aged 8-16, this STEM-packed magazine explores the vibrant secrets of colour. Read vibrant articles on rainbows, deep-sea hues, pH indicators and the psychology of shades. With fun DIYs, mind-bending puzzles, and our exclusive survey results, this issue is a spectrum of discovery!

## ABOUT THE COVER

A young scientist sits joyfully on a fantastic machine, turning colourful items from the natural and scientific worlds into a brilliant rainbow. His amused expression perfectly captures the wonder of exploring the vibrant spectrum.

Pg 8



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## Meet Oddy! Our Curious Explorer



Hey friends! I'm Oddy the Octopus—curious, clever, and full of ideas! With my eight arms, I explore mysteries, solve puzzles, and bring science to life. Did you know that approximately 300 million people worldwide have some form of colour blindness affecting around 8% of men and 0.5% of women?



### Get in Touch

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## For Parents

Encouraging curiosity and a love for learning is one of the greatest gifts we can give children. The Curious Atom (TQA) is crafted to nurture young minds through engaging science stories, hands-on activities, and fun experiments. This special "Colour" issue is designed to engage your children (ages 8-16) with complex scientific concepts in a fun and accessible way. Every issue of TQA is carefully curated to go beyond standard school curricula and inspire a lifelong love for learning, while also discussing unique conditions that expand our understanding of what it means to be human.

## Ever Wondered?

### Why are flamingos pink?

When Flamingo chicks are born they are pale grey. They feed on food like shrimps & Algae which are carotenoid rich foods. Carotenoids are compounds that are also present in carrots and tomatoes and are responsible for their red colour. When Flamingos eat carotenoids, the same is broken down by their liver and is deposited on their wings thus imparting the pink colour.



## The Spectrum Of Science

When we started planning this issue, I thought colour was all about art. But the more I read, the more I realised—colour is chemistry, biology, and physics all rolled into one. It's the way molecules absorb light, how animals use camouflage, and why colours affect our brain. This issue is a journey to discover its many shades.

Inside these pages, you'll uncover the secrets behind some of nature's most dazzling phenomena. We'll dive into the world of rainbows and refraction, plunging into the ocean depths to learn why colours disappear, and exploring how your screen creates millions of colours from just three glowing dots. Get ready to challenge your taste buds with our "colour vs. taste" experiment and try our fun quiz and DIY experiments. We've explored colour from every angle — including a fun survey to find out how you see things. I'll admit: I was surprised by my own answers!

So open your eyes wide and read on and on — this issue is going to get colourful.

— Kanira, Editor-in-Chief, The Curious Atom

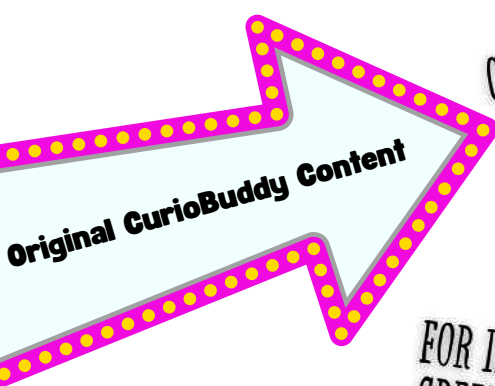
## About Us

The Curious Atom (TQA) is an exciting science magazine designed for curious minds aged 8-16. Co-created by science explorer kids like our chief editor, Kanira Gupta (10 years) and academicians, TQA blends fun and learning through illustrated articles, hands-on experiments, brain-teasing puzzles, and fascinating science stories. Each digital issue explores themes like space, biology, chemistry, and technology. We make science easy and engaging for our primary and middle school learners. TQA also highlights real-world applications, inspiring young readers to think critically and explore solutions for a better future. With interactive activities, science news and captivating facts, TQA sparks curiosity, builds knowledge, and encourages creativity. Join us in making science fun and inspiring for the next generation of innovators!

SCAN HERE



# Colour psychology



COLOUR PSYCHOLOGY IS A STUDY OF HOW COLOURS AFFECT HUMAN EMOTIONS, BEHAVIOUR AND PERCEPTION.

FOR INSTANCE, THE COLOUR GREEN MAY BE RELATED TO NATURE OR RED MIGHT BE CONSIDERED A SYMBOL OF LOVE.

COLOUR PSYCHOLOGY EXPLORES HOW DIFFERENT HUES AND SHADES CAN EVOKE SPECIFIC PSYCHOLOGICAL AND PHYSIOLOGICAL RESPONSES. FOR THIS ISSUE OF THE QURIOUS ATOM, WE CONDUCTED A SURVEY WITH OVER 100 PEOPLE PARTICIPATING TO SEE HOW DIFFERENT PEOPLE PERCEIVE DIFFERENT COLOURS.

ON ANALYSING THE RECIEVED RESPONSES, WE SAW THAT, IN ONE OF THE QUESTIONS (WHAT COLOUR DO YOU THINK THE NUMBER THIRTY-THREE IS?), 22.9% OF PEOPLE WROTE YELLOW, WHILE 11% WROTE ORANGE. 33 IS GENERALLY ASSOCIATED WITH WARM COLORS LIKE YELLOW, ORANGE OR GOLDEN, AND OUR SURVEY PROVED THAT.

IN ANOTHER QUESTION (WHAT COLOUR DO YOU PERCEIVE MATHS AS?), 34.9% CHOSE BLUE, MAKING IT THE COLOUR WITH MOST SELECTIONS.

THESE RESPONSES SHOW HOW OUR BRAINS OFTEN CONNECT COLOURS WITH FEELINGS, SUBJECTS, OR EVEN NUMBERS IN UNIQUE WAYS. IT'S FASCINATING TO SEE PATTERNS EMERGE, EVEN WHEN CHOICES FEEL PERSONAL OR INSTINCTIVE.

# Colours and Their Associations

<b>RED</b> Excitement Strength Love Energy	<b>ORANGE</b> Confidence Success Bravery Sociability	<b>YELLOW</b> Creativity Happiness Warmth Cheer	<b>GREEN</b> Nature Healing Freshness Quality	<b>BLUE</b> Trust Peace Loyalty Competence
<b>BLUE</b> Royalty Luxury Spirituality Ambition	<b>PINK</b> Compassion Sincerity Sophistication Sweet	<b>BROWN</b> Dependable Rugged Trustworthy Simple	<b>BLACK</b> Formality Dramatic Sophistication Security	<b>WHITE</b> Clean Simplicity Innocence Honest

## Colour Synaesthesia

SOME PEOPLE EXPERIENCE A UNIQUE CONDITION CALLED SYNAESTHESIA, WHERE THEIR SENSES MIX TOGETHER OR CROSS-OVER. FOR EXAMPLE, SOMEONE WITH COLOURED-GRAPHEME SYNAESTHESIA MIGHT ALWAYS SEE CERTAIN NUMBERS, LETTERS, OR SOUNDS IN SPECIFIC COLOURS EVEN IF THOSE COLOURS AREN'T REALLY THERE! SO, THE NUMBER '5' MIGHT ALWAYS APPEAR GREEN TO THEM, OR THE LETTER 'A' MIGHT FEEL RED. IT'S NOT IMAGINATION; IT'S PERCEPTION. THIS IS HOW THEIR BRAINS NATURALLY WORK!

APPROXIMATELY 4% OF THE POPULATION EXPERIENCES SOME FORM OF SYNAESTHESIA, WITH COLOR SYNAESTHESIA BEING ONE OF THE MOST COMMON TYPES. MANY SYNAESTHETES (INDIVIDUALS WITH SYNAESTHESIA) USE THIS PERCEPTION AS AN AID TO REMEMBER DIFFICULT SPELLINGS OR WORDS. BASED ON THESE EXPERIENCES, COMPUTERS NOW USE TECHNOLOGY FOR "ARTIFICIAL SYNAESTHESIA" TO COLOUR NUMBERS AND WORDS FOR VARIOUS DETECTIONS OR PREVENT MALICIOUS ATTACKS.



# CAN COLOURS TRICK YOUR TASTEBUDS?



The **BIG**  
Curious  
Question

Have you ever reached for a blue candy and instantly expected a burst of blueberry flavour—even before you tasted it? Or assumed a yellow drink would be lemony just because of its colour? If so, you're not alone.

It turns out that colour can strongly influence how we perceive taste. In fact, your brain often makes flavour predictions based on colour alone (even if those assumptions turn out to be completely wrong).

Let's dig into the fascinating connection between colour and taste, and see just how easily our brains can be fooled.

## The Colour-Taste Illusion

Our brain acts like a detective, constantly gathering clues to interpret the world. One of the strongest clues it uses, when we eat, is **colour**.

For instance, when you see a bright red jellybean, your brain jumps to a conclusion: "This is going to taste like cherry or watermelon." But what if the flavour is spicy wasabi instead? That unexpected twist reveals just how deeply colour influences our expectations.



Researchers have conducted numerous experiments that demonstrate this effect. In one study, participants were given three glasses of lemonade—one pink, one yellow, and one green. Unbeknownst to them, each drink was chemically identical. Yet most people insisted they tasted different. Why? Because their brains were interpreting the colours as signals for different flavours.

### The Science Behind Taste Perception

Taste is far more complex than just what happens on your tongue. It's a **multi-sensory experience** that involves your eyes, nose, mouth, skin, ears, and most importantly, your brain.

- **Eyes** detect the food's colour and shape.
- **Nose** picks up scents that heavily influence flavour.
- **Mouth** experiences the basic tastes - sweet, salty, sour, bitter, and umami.
- **Skin** senses temperature and texture.
- **Ears** even contribute through the sounds of crunching or fizzing.

Your brain gathers all this sensory input and makes a decision: "Do I like this or not?" It even processes social cues, like the "cheers" before a drink, to heighten anticipation and enjoyment.

### When Food Looks... Strange

Now imagine someone serves you a burger with a green bun. It tastes exactly like a regular bun—but would you want to eat it?

Some kids who claim to "hate peas" eat them unknowingly when they're hidden in a delicious yellow curry. The taste of peas didn't change; only the colour did.



Here's how your brain often interprets colours in food:

- Red suggests sweetness or fruitiness.
- Yellow often signals something tangy or citrusy.
- Green is linked to sourness or freshness.
- Brown implies chocolate, nuts, or roasted flavours.
- White feels plain, neutral, or creamy.

So, when you unwrap a purple popsicle, you might expect grape—even if it turns out to be something totally different, like maybe ginger!

Many people hesitate or reject food that "looks weird," even if the taste is unchanged. This reaction is proof of how strong visual perception is. That's why food companies use bright, appealing colours to influence buying decisions. From neon candies to rainbow-coloured ice creams, visual excitement often overrides actual flavour.

Did you know **blindfolded taste tests** are common in food science to eliminate visual bias? They help measure how something truly tastes without the influence of colour.

# COLOURS v/s TASTE CHALLENGE

**Try At Home**

**Want to test the colour theory yourself?  
Here's a simple experiment:**

## **You'll need:**

- A clear juice like lemonade or white grape juice
- Red, yellow, and green food colouring
- Three small cups
- A blindfold
- A curious volunteer

## **What to do:**

1. Pour the same juice into each cup.
2. Add a different food colour to each one.
3. Ask your volunteer to taste each, knowing the colours.
4. Watch how they react—and see if they believe they're tasting different flavours.
5. Put a blindfold on your volunteer the second time. Since they won't see the colours, they will not notice a difference.



## **What is happening:**

Colour is far more than visual decoration—it shapes our expectations, emotions, and food experiences. It can enhance or distort the way we perceive taste.

Being mindful of this can help us make smarter, healthier choices. Instead of relying solely on how food looks, pay attention to how it actually tastes, smells, and feels. Real, natural foods might not always be brightly coloured, but they're full of authentic flavour and essential nutrients.

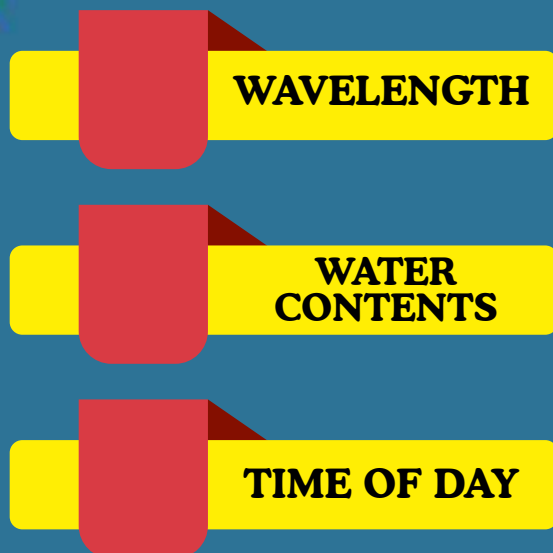
So next time you're tempted by that blue drink or neon snack, ask yourself: is my brain being honest—or just dazzled by colour?

# The Grey

## Under Water Bed

Do you know that we cannot see colours in the deep sea as we do on the surface? Let us find out the mystery (or should we say science!) behind this case.

### Factors That Affect Light Passing Through Seawater



Much of the vivid colour of the deep sea disappears below 10 meters when viewed in natural light. At this depth sunlight, which contains all visible colours, gets absorbed by water, and this absorption happens differently for each colour (wavelength). The seawater turns increasingly blue (and finally grey) as you go deeper.

As we keep going deeper in the sea we start losing colours one by one. The wavelengths of light are absorbed at different depths, with red being absorbed first, followed by other colours like orange, yellow, and green. By the time you reach deeper depths, only blue and violet light penetrate, and eventually, even those are absorbed, leaving the deep sea in near darkness.

Only blue light is visible to human eyes at a depth of around 150 meters, even in the clearest water. There is no visible light from the surface that the human eye can detect beyond roughly 800 meters.

## How can Scuba Divers see Colours ?

Scuba divers often carry torches (underwater flashlights) even during daytime. Dive lights emit a full spectrum of light, including red, orange, yellow, and blue. When a dive light illuminates an object, it provides the missing wavelengths, allowing divers to see the object's true colours. That's why when a scuba diver shines the dive torch on a red coral, it vividly becomes red again!

# How Screens Create Colour ?

## Activity Alert!

Even zoomed into your screen? No, use your eyes instead of your fingertips! If you could shrink down and peek inside your TV, tablet, or smartphone screen, you will find an intricate grid of tiny light-emitting components known as pixels. Each pixel is comprised of three sub-pixels: red, green, and blue (RGB). That's it! Just three colours. However, when they shine at various brightness levels and mix, they produce millions of colours! Now, let's conduct a simple experiment to understand how this works on your screen.



Become a curious explorer with Oddy the octopus.

### Let's Understand:

This experiment explores the fundamental principles of additive colour mixing. This is the opposite of how pigments mix, where combining colours creates a darker shade. With light, combining colours creates a brighter, more vibrant colour. The entire palette of millions of colours that we see in modern digital displays is an illusion created by varying the intensity of the three primary colours.

- Red + Green = Yellow
- Green + Blue = Cyan
- Blue + Red = Magenta
- All three = White light!

This process is a sophisticated form of "colour math," that tricks our brains into perceiving a rich and diverse spectrum.

## TRY IT!

### What You Need:

Three small torches of white LED lights, white wall or paper, 3 cellophane sheets of Red, Green and Blue colour, and tape.

### Experiment:

- Tape red cellophane sheet over one light, green over another, and blue over the third.
- Turn off the room lights.
- Project all three lights individually first onto the white wall or paper.
- Now, try overlapping any 2 followed by projecting all 3 colours on the same spot on the wall.

### Observe:

- Shine no light at all on a white wall. What do you see?
- Project the red and green flashlights so they overlap. What colour do you observe?
- Overlap the red and blue flashlights and observe the colour on the wall.
- Project all three flashlights - red, green, and blue - so they all overlap. Now what colour do you see?

# Myths ↔ Facts

## COLOURFUL MYTHS WE GROW UP WITH!

✗ **Myth 1: The colour red makes bulls angry.**

✓ **Fact :** Bulls are actually colour blind to red and cannot distinguish it from other colours. It's movement of matador's cape that makes them charge not the colour. You can try to use a blue or a yellow cloth to provoke the bull's charge and see the same result.



✗ **Myth 2: A colour-blind person cannot see any colours.**

✓ **Fact :** This's not entirely correct. While true colour blindness, where everything is seen in shades of grey, is a rare condition called achromatopsia, most people with colour blindness can still see colours, but they have trouble distinguishing between certain colours, usually red and green. This is also known as color vision deficiency.



✗ **Myth 3: All animals see colours like all of humans do.**

✓ **Fact :** Animals see the world in very different colours, or sometimes, in fewer colours. For example, dogs and cats can't see red or green very well. But some insects like butterflies can see ultraviolet light, which even humans can't! Mantis shrimp have a unique and complex colour vision system, with up to 12 different types of colour photoreceptors, allowing them to perceive a wider range of colours and polarised light than humans.



# Light and COLOUR!

*Have you ever wondered why the sky turns fiery orange at sunset or why rainbows appear after rain? The answer lies in the fascinating physics of light and colour.*

## DID YOU KNOW?

Contrary to what it seems, objects don't have colour on their own. Instead, they reflect certain wavelengths of light and absorb others.



White sunlight might look plain, but it's actually a mix of all **visible colours**—from red to violet. These colours are made up of light waves, and each has its own **wavelength** and energy. Longer wavelengths like red carry less energy, while shorter ones like violet carry more. Together, they form what we call the **visible spectrum**:

**Red – Orange – Yellow – Green – Blue – Indigo – Violet**

“

Colour is not something you see; it's something light reflects and your brain decodes.

”

— Dr. R. G. Blue  
TQA Scientist

## HOW DO WE SEE COLOUR?

Our eyes are equipped with special photoreceptor cells called **cones**.

These come in three types:

- One responds best to **red** light
- One to **green** light
- And one to **blue** light

Your brain mixes signals from these cones to produce the full spectrum of colours, just like blending paints on a palette.

When you look at a red apple, you're not seeing colour in the object. You're seeing the light it reflects.



Your brain does this colour mixing in milliseconds automatically!

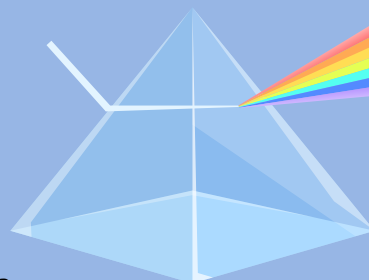
**BRAIN POWER**



**Rainbows** form when sunlight passes through raindrops. Inside the drop, the light slows down and bends through a process called **refraction**.

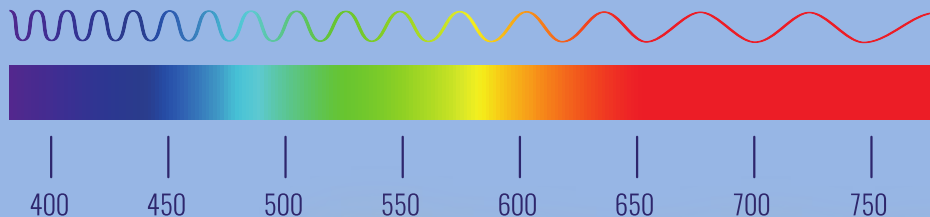
The sunlight reflects off the inner surface of the drop, and bends again as it exits. Since each colour bends at a slightly different angle, the light separates into a beautiful arc of colours.

A **prism** works the same way—splitting white light into a rainbow.



You can even try this at home. Hold a CD or a DVD under sunlight and tilt it. Watch a mini rainbow dance across the surface!

VISIBLE SPECTRUM



# RAINBOW and Refraction!

COLOUR ISN'T JUST PRETTY—IT'S PHYSICS IN ACTION!

## FUN FACT!

- Light travels at 300,000 km/sec, but slows down in water or glass, which helps split the colours.
- Dogs have fewer cones than humans—so they see fewer colours.
- Rainbows always appear opposite the sun—and you can only see them at certain angles!

# COLOUR

## CHEMISTRY

Ever wondered why leaves change colour, fireworks dazzle in the sky, or purple cabbage juice turns pink in lemon juice? The answer lies in the chemistry of colours—tiny molecules creating big effects!

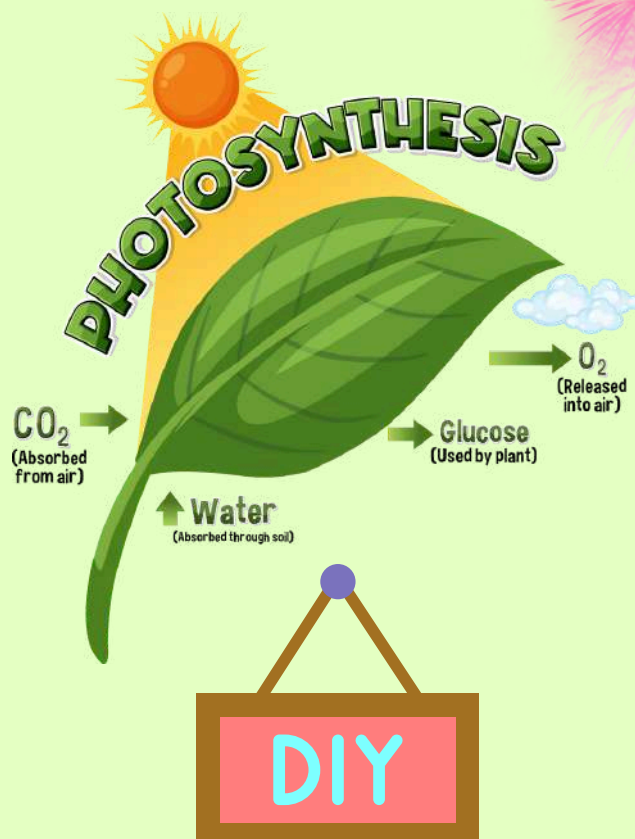
### WHY ARE PLANTS GREEN?

The rich green colour of most plants comes from a pigment called **chlorophyll**. It plays a vital role in **photosynthesis**, the process plants use to make their food using sunlight. Chlorophyll is excellent at absorbing red and blue light, but it reflects green light—and that's what our eyes see.

As seasons change, especially in autumn, chlorophyll breaks down. Then, other pigments hidden in the leaves take over:

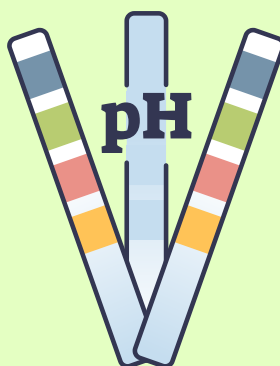
- **Carotenoids** – show up as yellows and oranges (like in carrots and corn).
- **Anthocyanins** – appear as reds and purples (like in grapes and berries).

That's why leaves turn brilliant shades in autumn. It's a chemical change in disguise!



### CHEMISTRY THAT CHANGES COLOUR (PH INDICATORS!)

Chemicals that exhibit a visible change in colour depending on whether something is an acid or a base are called pH indicators.



### Make Your Own pH Indicator

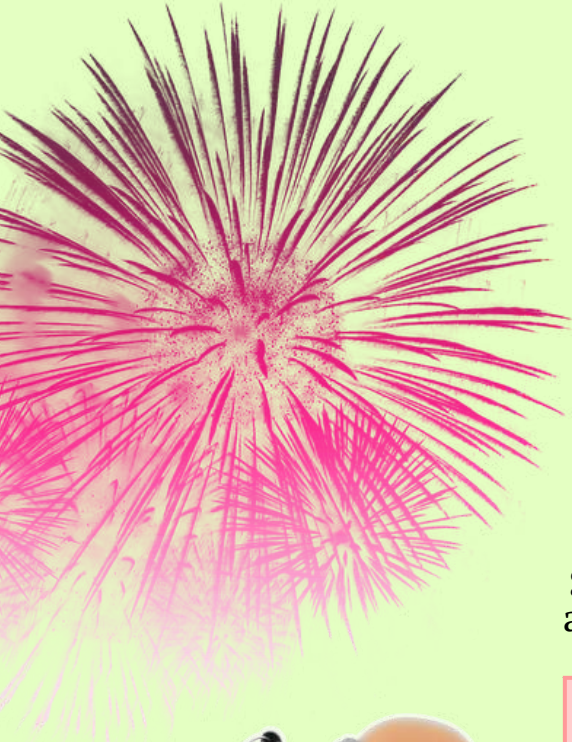
#### You'll need:

- Red cabbage
- Water
- Blender or boiling pot
- Strainer
- Transparent cups
- Household liquids: lemon juice, vinegar, soap water, baking soda water, cola

#### What to do:

Boil red cabbage leaves in water to make your own indicator, then test different household liquids like vinegar, soap water, or soda. It's colour-changing chemistry—right in your kitchen!

Red Cabbage Juice  
+  
Lemon Juice  
↓  
**PINK!**



### DID YOU KNOW?

The fireworks light up the sky in different colours because of various chemical reactions in metal salts.

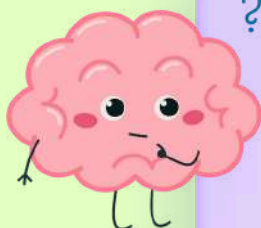
When fireworks explode, the metals inside get super-hot, and their atoms become excited. As they return to normal energy levels, they release light. Each metal gives off its own bright colour. Different metal salts are added to fireworks to give them their signature colours:

Colour	Chemical Used
Red	Strontium Salts
Green	Barium Compounds
Blue	Copper Salts
Yellow	Sodium Compounds
Purple	Mix of Sodium and Strontium



“Behind every colour in nature, there's a chemical story waiting to be discovered.”

— Dr. R. G. Blue  
TQA Scientist



Send your answers to our Email [submissions@curiobuddy.com](mailto:submissions@curiobuddy.com) and get featured in the next issue!

- ??
- ? What pigment makes plants appear green?
  - ? Which metal salt gives blue colour to fireworks?
  - ? What does red cabbage juice indicate?
  - ? Which pigment gives leaves their red and purple shades in autumn?
  - ? What colour will red cabbage juice turn in baking soda water?

# THE COLOUR LAB THAT EXPLODED

Aviraj tip-toed into the school lab, clutching his notebook like a treasure map. "Guys, are you as excited as I am?" he whispered. Across the table, Arya adjusted her safety goggles and gave him a playful nudge. "Only if we don't turn this place into a rainbow disaster!" Nikki chimed in, already measuring vinegar with the precision of a pastry chef.

Ms. Mehta had warned them: "This 'Rainbow Reaction' is spectacular. But it can be unpredictable."

SCIENCE  
STORY



ingredient- red cabbage juice! It tells us if something's sour or basic." With a grin, Nikki added a few drops. Instantly, the clear liquid turned a brilliant fuchsia—like liquid magic.

Aviraj flipped to his vocabulary page. "Chromatic—meaning 'all about colour.' This is so chromatic!" he laughed. They each picked a flask and, on the count of three, poured in a shot of vinegar.

"Ready?" Arya asked. "One... two... three!"

**BOOM!** A geyser of neon foam shot up like a miniature volcano, splashing pink and aqua bubbles everywhere.



They all nodded, though their eyes sparkled more than the polished glassware.

Arya held up a beaker of baking soda in water. "First step: our base solution." She pointed to tiny flasks waiting in a neat row. "Next comes our star

Nikki squealed, "We've made a colour tsunami!" Aviraj dove for a tray to catch the bubbly mess. "Relax, it's just carbon dioxide gas escaping," he explained, pointing to the fizz. "Science can be messy, but that's part of the fun!"

Just then, Ms. Mehta burst through

the door. She blinked at the riot of colours dripping off the counters. Then her face lit up. "Well! You've certainly discovered a... lively demonstration." Arya raised an eyebrow. "Is that a good thing?"

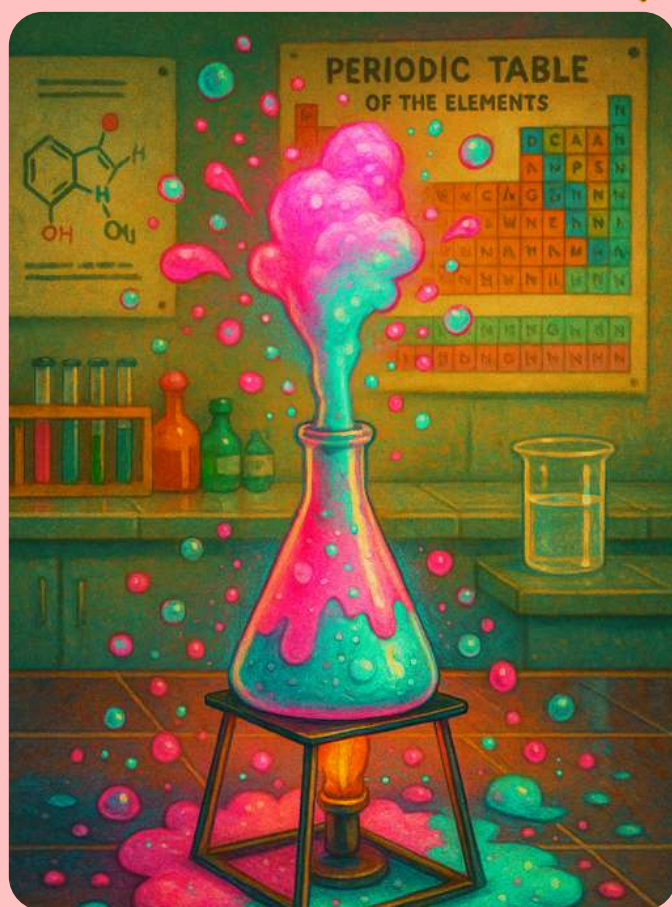
Ms. Mehta winked. "Absolutely. What you saw acted like a catalyst, speeding up the reaction. But a true investigation means doing it again more carefully."

Nikki rolled up her sleeves. "Round two: slow and steady." Arya added vinegar drip-by-drip to fresh cabbage juice while Aviraj stirred gently. Nikki timed every drop and scribbled observations.

They watched the potion dance through colours: from sea green to sky blue to soft purple to bright pink! Ms. Mehta nodded approvingly. "You've mapped out the full pH rainbow!"

Arya said excitedly, "This was way more thrilling than any video game." Aviraj grinned. "And a lot less messy this time." Nikki gave her friends a triumphant high-five. "Science in colour is the best kind of messy and the coolest when you see every shade pop!"

The next week, the school's annual Science Fair was buzzing—stalls lined up with robots, volcano models, and posters everywhere. Aviraj, Arya, and Nikki decided their pH Rainbow Reaction deserved center stage. They borrowed a long, clear plastic trough and set up a colourful display. The first station was a vibrant display of six beakers labeled from "Very Sour" to "Very Soapy," each filled with their



coloured cabbage-juice solutions. Just beside them, a drip system made of clear plastic tubes allowed visitors to carefully add vinegar, drop by drop, and watch real-time colour changes. The final challenge awaited at Station 3: a "Guess the pH" game. Spectators had to predict the colour change before each drop went in and win a sticker if they were right!

As the fair opened, curious students and parents flocked to their table. Aviraj's little sister timidly added a drop of lemon juice and her beaker glowed bright pink. She jumped back with a chuckle, "It's like magic!"

Arya explained, "It's not magic; it's chemistry. The colour tells us if something is an acid, a base, or neutral." She pointed to the pH scale poster behind them: reds and pinks on one side, greens and blues on the other.

Aviraj guided a group of classmates through the drip system. "See how slowly adding drops gives you more control? That's why careful investigation is so important," he said, echoing Ms. Mehta's lesson.

By midday, their booth had the longest line. Even Ms. Mehta stopped by, impressed. "You've turned a foamy mishap into a showstopper," she said proudly. "Well done, team!"

After the fair, the trio gathered under a shady tree, sipping lemon-soda. Their smiles were as bright as the colours they'd created. "I never thought cabbage could be so cool," Aviraj said.

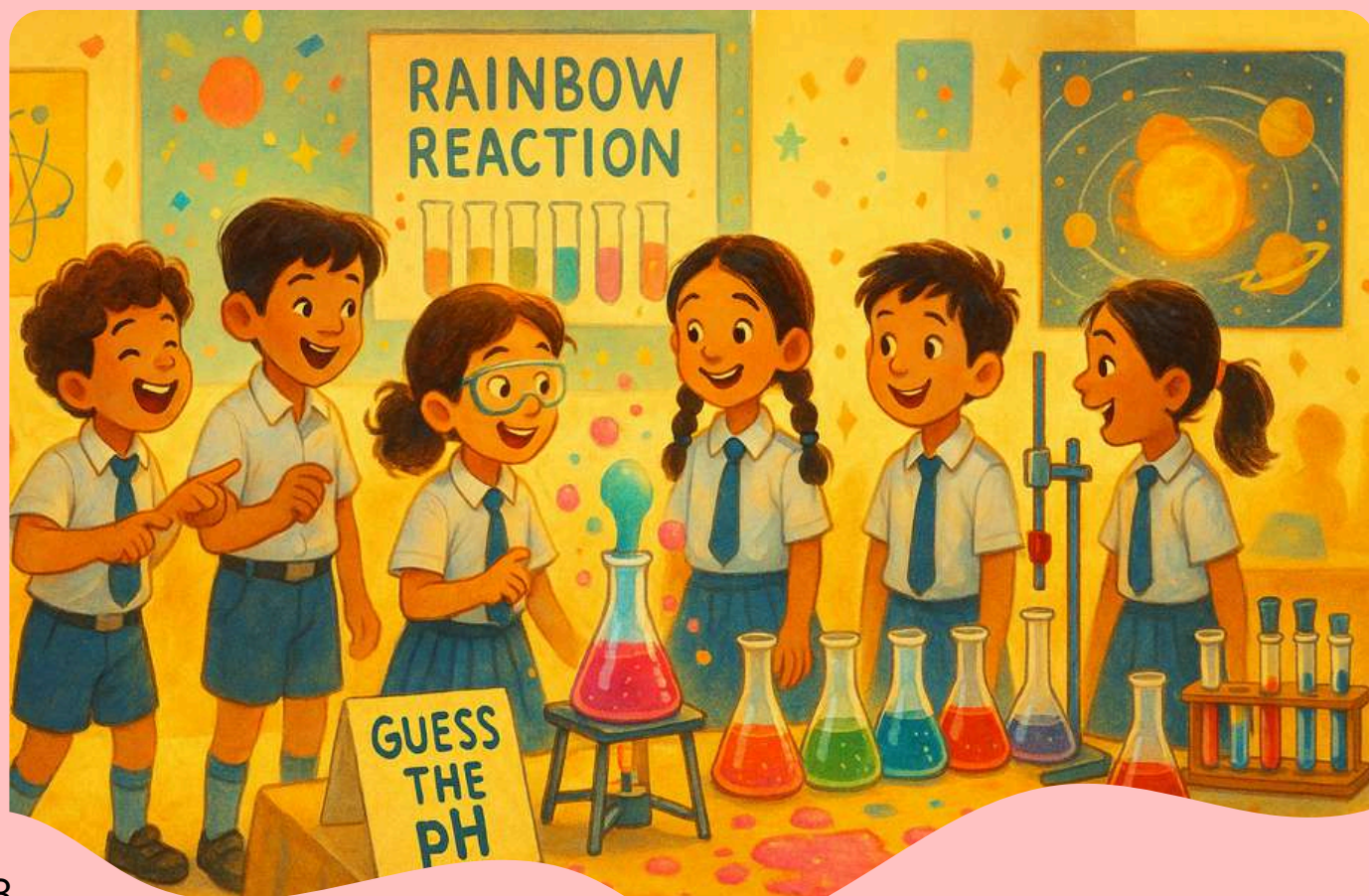
Arya grinned at the memory of mini-scientists cheering each new hue. "And we taught everyone about acids, bases, and how colour helps us understand the world!"

Nikki added, "Plus, we practiced being patient chemists; no more colour tsunamis!" They all laughed, remembering the first bubbly blast.

Ms. Mehta appeared with three ribbon badges "Top Chromatic Chemists!" She pinned one on each of them. "You showed creativity, teamwork, and real scientific thinking," she beamed.

That evening, at home dinner, Aviraj's little sister asked, "Can we try another colour experiment tomorrow?" He said, "Absolutely. How about we explore how salt changes water's colour-layering for our next adventure?"

As the three friends tucked into their beds, they knew this was only the beginning of their endless colourful experiments—each one a tiny spark of discovery 🌈





# WONDER



# WHY?

## SOME ANIMALS CHANGE COLOUR?



Some animals change colour using amazing skin cells called chromatophores, which can expand or shrink to reflect different colours. This helps them blend into their surroundings (camouflage), scare enemies, or communicate with others. For example, a chameleon might turn dark when it's scared or light green when it's calm and relaxed!

Colour blindness happens when the colour-sensing cells in the eyes, called cones, don't work properly or are missing. These cones help us see red, green, and blue colours. So if one type doesn't work, some colours get mixed up (like red and green looking the same). It's usually something people are born with, and even though they see fewer colours, their eyes work just fine in other ways!

## SOME PEOPLE ARE COLOUR BLIND?



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## Violet Sea Snail

This floating snail creates a bubble raft and sails the open ocean. Its unusual purple shell acts as camouflage against the sky when viewed from below.



## Yellow Boxfish

Though it looks like a floating piece of cheese, the yellow boxfish has a powerful defence—it secretes toxins when stressed! Its bright colour warns predators to stay away.



# THE

# VIVID



## Blue Dragon

This sea slug may look magical, but it's dangerous! It floats upside down on the ocean's surface and stores venom from jellyfish it eats—especially the deadly Portuguese man o' war. By concentrating their stingers in its own body, the Blue Dragon becomes even more powerful than its prey.

Its shimmering blue colour camouflages it from both sky and sea—dark blue on top blends with ocean waves, while silver on the bottom hides it from fish looking up. That's countershading, a clever kind of camouflage many sea animals use.

Beauty with a bite!



## Plumed Basilisk Lizard ➤

Also called the “Jesus Christ Lizard,” it can run on water!

Its striking green colour helps it hide in leafy forests while it darts between branches and rivers.



## ◀ Strawberry Poison Dart Frog

This tiny frog may look like a strawberry, but it's no treat!

Its bright red colour warns predators that it's super poisonous. Some live in the rainforest, others on the beach—and their colours can change depending on where they live!

## WILD

**A guide to some of the world's most colourful creatures— from glowing sea slugs to frogs that look like berries, these animals don't just look amazing – their colours help them hide, warn, attract, and survive in surprising ways!**

## Golden Lion Tamarin

This small monkey's brilliant orange mane gives it a regal look! The colour may help family members stick together as they swing through the rainforest.



## Roseate Spoonbill ➤

Like Flamingos, these birds get their pink colour from the shrimp and crustaceans they eat. Their spoon-shaped beaks help them sweep through shallow water for food.



Amongst bears, Polar Bears are the heaviest and may reach up to 800 Kgs!

There are 8 species of bears in the world — including the polar bear, panda bear, and sloth bear.



*A bear's bite is powerful — strong enough to crush a bowling ball!*

## Big Brain!

Bears have the largest brain size of any carnivore, particularly the brown bear.

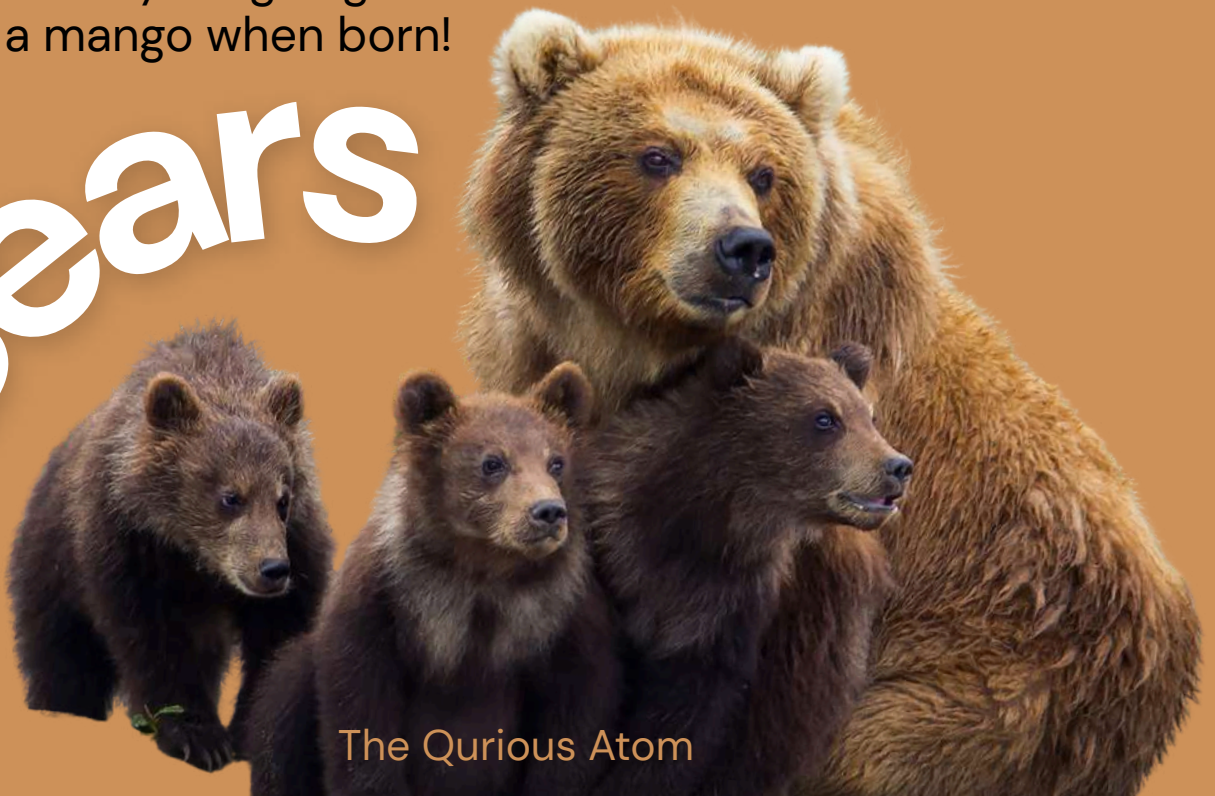
## Fun Facts!!!

1. Brown bears use their play-face, an open-mouth grin, to tell others they want to play.
2. When bears are born they are between 9 – 10 inches size only.

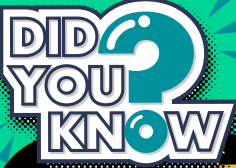
## Size of a Mango

Bear cubs are born tiny and blind; usually weighing less than a mango when born!

# Bears



# Tigers



Tigers have one of the loudest roars in the animal kingdom. They can be heard up to 3 kilometres away!

Each tiger has a unique stripe pattern, similar to human fingerprints.

Tigers have excellent night vision, seeing six times better in the dark than humans, making them effective hunters at night.



## Leap!

Tigers can jump up to 6 metres in one bounce!

International Tiger Day is observed on the 29<sup>th</sup> of July.



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