

Param

Exploring the joys, challenges, and fascinating insights into childhood, parenting, and the journey of growing up.

Kidology: The Science of Kids & Parenting

issue
11

Parenting: A Zoo of Styles

There is no guide for parenting as we know! As the most evolved species, it is ironic to note that humans mimic parenting styles of many animals. We take a look at a few of them in this edition.

science magazine

Kids with Big Ideas
Meet young inventors who turned everyday problems into amazing solutions. From helping farmers and the planet to making life easier for families, their creativity and determination changed lives. These inspiring stories show how a little curiosity and big dreams can make a world of difference!

[supported by]



A Letter from a Curious Child

Hi Everyone,

Can I tell you a secret? Adults are so weird. They don't see the world like I do. When I see a dragon in the clouds, they say it's just water vapour (boring!). But guess what? Science is on my side—it's about imagination, experiments, and asking "Why?"

I mean, even my favourite rhyme makes me curious. It goes like this:

*Twinkle, twinkle, little star,
How I wonder what you are!
But then someone told me this next part:
"We are suns so far away,
Burning bright both night and day."*

And just like that, everyone believes it. Why do grown-ups accept answers so quickly? Why don't they stop and wonder first? I mean, what if stars are something even cooler—like tiny portals, or alien flashlights, or just glitter sprinkled by the universe?

That's why this issue is extra special! Not only is it our **second anniversary** (woohoo!), but it's also a **Children's Day celebration edition** dedicated to exploring the amazing ways kids think, imagine, and create. For the first time, we're diving into the **science of psychology**, understanding how different kinds of parenting shape children's behaviour.

To add a dash of fun: we're also featuring **young inventors**—kids who turned their wild ideas into real creations. Plus, there's an experiment you can participate in, which reveals just how adults and kids think differently (look for the results in the next issue)!

Oh, and did you know? Despite all the differences between humans, we're not so different from other species when it comes to childhood. Whether we're human, animal, or any other species, we all go through the same stages of growing up, and this issue will help you see how much we have in common.

So, adults, maybe it's time to take notes.

And kids—keep asking "why," because that's where all the fun starts.

Enjoy!

(And maybe one day, you'll see things my way!)

Sincerely,

A Curious Kid

(with a little help from the inner child of
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young inventors

Frozen Ears, Fluffy Solutions

On a freezing winter day in 1873, 15-year-old Chester Greenwood was ice skating in Farmington, Maine. He loved the crisp air and the thrill of gliding on the ice, but there was one big problem—his ears were freezing! Wool scarves didn't quite stop his ears stinging in the winter wind.

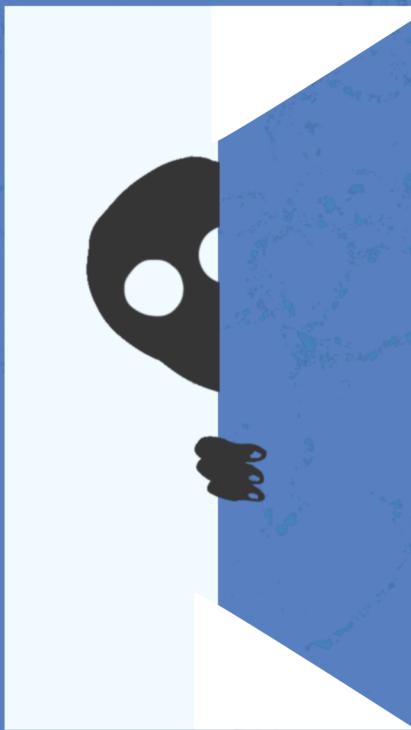


But Chester was a kid with ideas. He went home, grabbed a piece of wire, and bent it into loops that fit over his ears. Then he asked his grandmother to sew some soft fur onto them. And that's how earmuffs were invented!

Chester didn't stop there. He kept improving his invention, adding a comfy band and using better materials. Soon, he had a final design and proudly called it the "Champion Ear Protector." By the time he was 18, he'd started a factory in his hometown, making thousands of earmuffs and giving people jobs. How cool is that?



From Door Wars to Saving Crops



Neil Deshmukh's journey with artificial intelligence started with a problem only a big brother could understand: how to keep his little brother out of his room. 14 year old Neil had an idea – what if his door could recognize faces and only let him in? So, he got to work, using a camera and a tiny computer to program it to recognize facial features. What started as a fun project to protect his room turned out to be the start of something much bigger—and life-changing!

When Neil visited a small farming village in India, where his parents were born, he saw how tough life was for the farmers. Their crops kept getting ruined by diseases, and it was heartbreaking. That's when he had a lightbulb moment —what if the same tech he used for his door could help farmers?



At just 17, Neil created PlantumAI, an app that helps farmers spot crop diseases early so they can save their crops and feed the world!

Magnetic Magic for Tiny Plastics

Fionn Ferreira grew up on the Irish coast, always surrounded by the sea. His family built boats, so he spent lots of time by the water, helping out and exploring the shore. The ocean was his favourite place! But Fionn started to notice something upsetting—tiny bits of plastic were floating everywhere. They weren't just harming sea creatures but also finding their way into our food and water.

YIKES!



Even Robert Downey Jr. (yep, The Iron Man!) and the Footprint Coalition thought it was awesome and jumped in to support him. Now, Fionn's invention can grab more than 85% of tiny plastics from water in one go! It's like giving the ocean a big clean up hug!



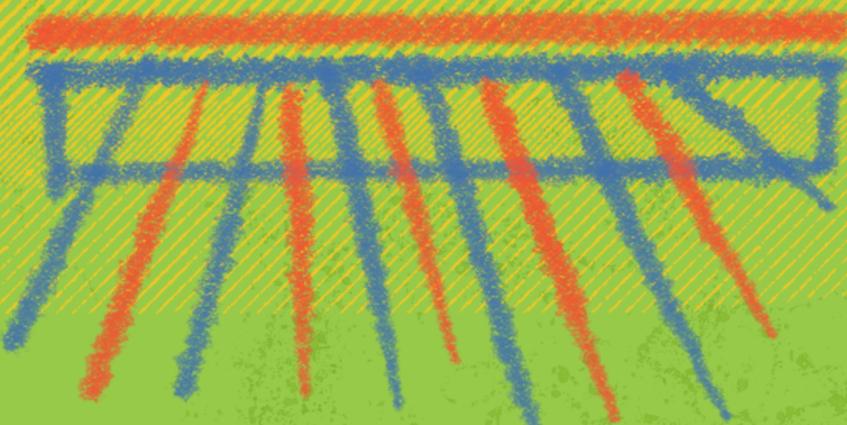
Fionn couldn't just sit and watch. At just 18, he decided to fix the problem.

He came up with a cool idea using a magnetic liquid called ferrofluid, made from iron oxide powder and oil.

This liquid grabs tiniest bits of plastic, and magnets pull them right out of the water. It's super clever, doesn't generate any extra waste, and can be used again and again!



Grandpa's Guardian Sock



Kenneth Shinozuka's journey into inventing started with a problem that hit close to home—his grandfather's Alzheimer's. When Kenneth was just four, he was walking with his grandfather in a park in Japan when his grandfather suddenly got lost and confused. That moment led to his diagnosis, and things only got tougher from there.



As the disease progressed, Kenneth's grandfather started wandering out of bed at night, which worried the whole family. At 15, Kenneth had an idea—what if he could make something to keep his grandfather safe? So, he got to work and created a special sock with a pressure sensor. The sock could tell when his grandfather got out of bed and sent an alert straight to his family's phones. Simple, smart, and super helpful!



What started as a way to help his grandfather turned into something much bigger. Kenneth's invention won him the \$50,000 Scientific American Science in Action Award and showed how personal challenges can inspire ideas that help so many people.

baby2teen

BLUNDERS TROUBLE

0-2 months



Dogs

3-6 months



1-2 years

Digging in flowerbeds, stealing socks, barking at shadows



Parrots

0-2 months



3-6 months



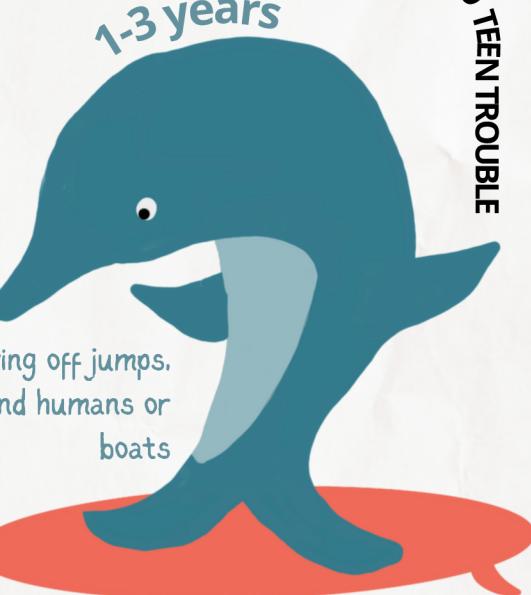
1-2 years



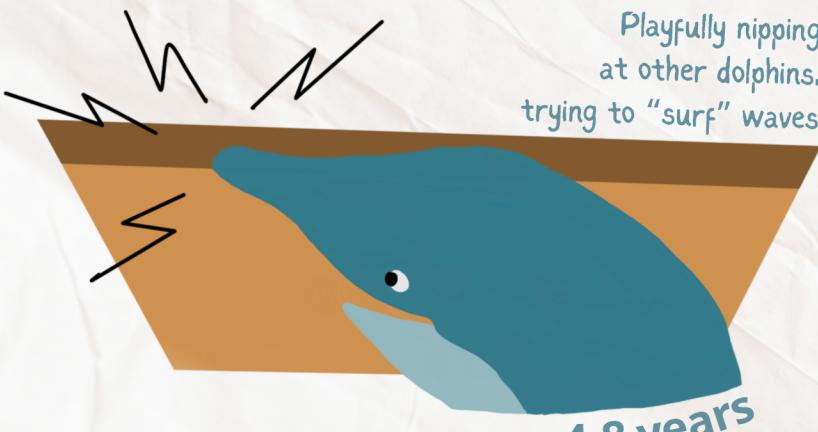
Dolphins



Getting lost while following mother, popping out of water too often



Showing off jumps, poking around humans or boats

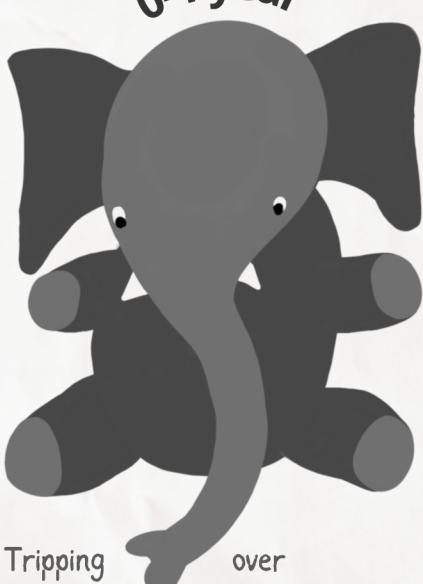


Playfully nipping at other dolphins, trying to "surf" waves

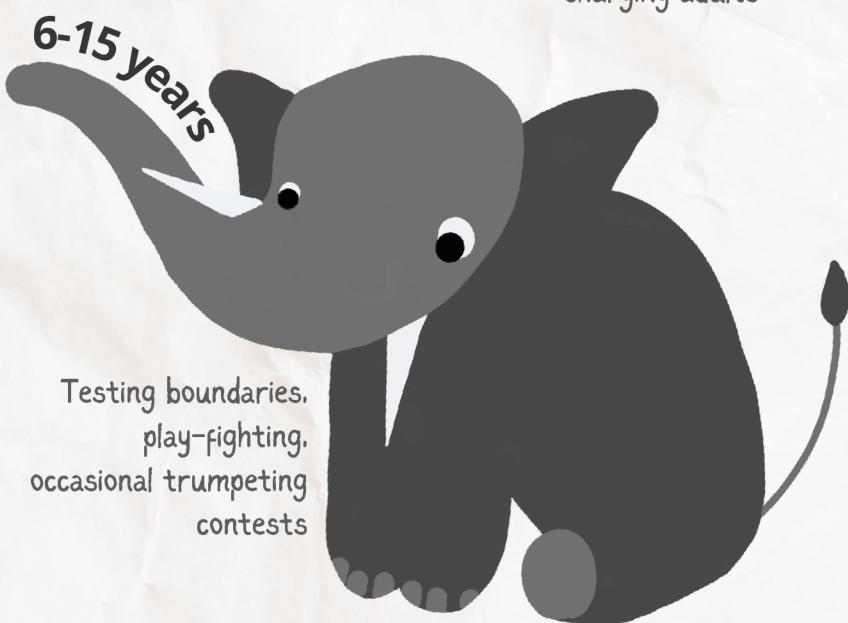


Splashing water everywhere, play-fighting, mock charging adults

Elephants



Tripping over trunk trying to eat dirt



Testing boundaries, play-fighting, occasional trumpeting contests

MOM! IT'S NOT MY FAULT!

1-3 yrs "TINY EXPLORERS" STAGE



HELPS DEVELOP SENSORY AWARENESS BY EXPLORING,
TEMPERATURE AND AUTONOMY

DS DEVELOP SENSATION, TEMPERATURE AND AUTONOMY
TOUCH, TEMPERATURE AND AUTONOMY
NATION

An illustration of a baby with a green frog on its head. The text 'RANDOM OBJECT FASCINATION' is written in a curved, hand-drawn font across the bottom. The word 'TOUCH' is written in a smaller, hand-drawn font above the frog.



BOOSES SENSORY-MOTOR DEVELOPMENT AND
SPARKS EXPLORATION OF THE ENVIRONMENT

4-6 yrs : THE "IMAGINATIVE CHAOS" PHASE

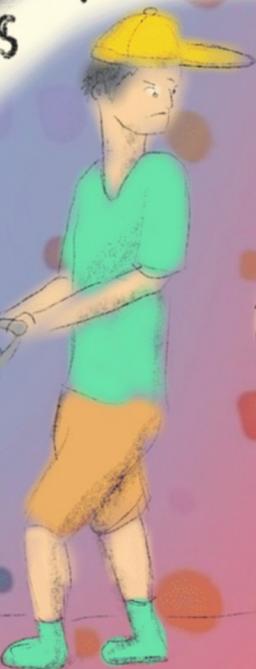
SHOE-ON-THE-WRONG-FOOT

TOLERANCE

PART OF THEIR DEVELOPING COGNITION -
PERSONAL PREFERENCE OVER LOGIC

FEARLESS FASHION

ENCOURAGES ROLE-PLAY, WHICH
NURTURES EMOTIONAL
AND SOCIAL
DEVELOPMENT



7-9 yrs : THE "MINI-KNOW-IT-ALLS" ERA

DIY SCIENTISTS



THESE WILD TESTS FUEL CURIOSITY AND SCIENTIFIC THINKING



EXPANDING WORLD VIEWS TRIGGERS THE START
OF MORAL REASONING

SUDDEN ETHICAL DEBATES

DO ANTS
HAVE
FEELINGS??



10-12 yrs : THE "DOUBLE AGENT STAGE"



SUDDEN MOOD SWINGS

HORMONAL CHANGES AND SOCIAL
PRESSURES SPARK EMOTIONAL SHIFTS.



ODD COLLECTIONS



BUILDS SELF-EXPRESSION
IDENTITY, AND
EMOTIONAL CONNECTIONS

13-16 yrs: THE "EVOLVING PHILOSOPHER" PERIOD



DRAMATIC TEXTING RITUALS

REFLECTS EVOLVING COMMUNICATION
SEEKING CONNECTION WHILE
ASSERTING INDEPENDENCE!

MULTI-TASKING CHAMPIONS



THE ADOLESCENT BRAIN CRAVES

NOVELTY, REWARDING MULTI-TASKING WITH BURSTS OF **STIMULATION**

Parenting

Should children be allowed to watch screens while eating so parents can stuff anything while they stare into oblivion? Should children be punished? Should children eat sweets? How much hygiene is good for a child? How to talk to a child? How not to? How not to lose your cool while your child is throwing a wild tantrum? How much freedom is good for a child?

Welcome to new age parenting where every little thing in your child's life is the most important thing and everything revolves around your child and most importantly how to be a good parent when you're constantly judged by your peers for almost everything?

In this age of information overload, one would think it would be easy to find answers to everything but the opposite has happened. There are too many answers out there. A perfect child going on to becoming a perfect adult is a myth at most. What is perfection? Just this question has a hundred different answers and one person cannot fit into so many moulds. Apart from neglect and abuse, it is evident that children become more resilient when they have some challenges while they are growing.

Giving a child a textbook perfect environment to grow only makes the child not develop many crucial survival skills to get along in this big bad world which is very far from perfect. So what is the right way to rear a child? What is the right amount of challenges to throw at a child? This is a question that no one has answers to.

The only thing parents can do is to set a good example for their wards as children learn a lot from their parents. Other than this, a good and safe space at home, a haven for a child where he or she can thrive and learn life lessons to equip oneself for life.

In this piece, we try to delve into many parenting styles that may seem absolutely crazy for some and serious business for others.

An elephant mom is a firm but nurturing and protective parent who focuses on the emotional security and connection over academic and athletic success. This is probably an ideal parenting style that helps the child be strong, confident and compassionate.



A dolphin mom tries to create a balanced lifestyle by making some concrete rules and establishing a sense of responsibility, along with allowing their kids time to just enjoy this carefree phase of their lives. Dolphins nurse their calves for two to four years, they do separate from their calves allowing independence so the Dolphin parenting style is seen as balanced and collaborative, firm but flexible and value their children's autonomy.



Octopus moms are moms who sacrifice themselves to protect their kids. Female Octopuses lay eggs and die protecting them. They do not leave the den, starving themselves to death until the eggs hatch. Kids with these kinds of moms probably receive the best care but it's at the cost of the mothers needs.



Tiger moms and panda moms are two opposite ends of the parenting spectrum. Unlike Tiger Parents, where the parent thinks they know best, Panda Parenting is when parents let the child lead while the parents act more as guides.

Tiger parenting cannot be compared to the actual parenting style of tigers. Tiger parents have unreasonable expectations from their children, they leave little room for negotiation, and limit socialisation. Emotional threats and corporal punishments are part of this style. They don't trust their children to do anything and don't respect privacy.

Some tiger parents still provide a warm nurturing environment for their children to thrive despite the strict regimen they impose. Pandas on the other hand are goofy and accommodating but still manage to get the best out of their kids. This style is ideal if the parents know how to balance what they impart to their children.





The **ostrich parent** prefers to put his/her head down into the sand, avoiding emotions at all costs ignoring what seems too hard.

The downside is that the child with an ostrich parent may misinterpret this approach, seeing the carer as uncaring and may end up feeling unloved but many believe that parents have to do their parenting this way! The ostrich is a stubborn animal and does not budge which is a hallmark of this parenting style.

A humming bird parent doesn't constantly hover around and micromanage the child like a helicopter parent. The humming bird parent is nearby and zooms in only when necessary and zooms out allowing children more freedom while still being available when needed.

The humming bird reserves its energy for collecting the nectar but otherwise does not spend its energy hovering unnecessarily. This is one of the ideal styles to let children learn on their own.



The current favorite is probably **butterfly parenting**. Butterfly parenting is to allow children to spread their own wings, even if it's in a different direction than the parent would have hoped for them.

They are the explorers. Parents are the guides. Butterflies are an embodiment of freedom which is what this parenting style indicates.





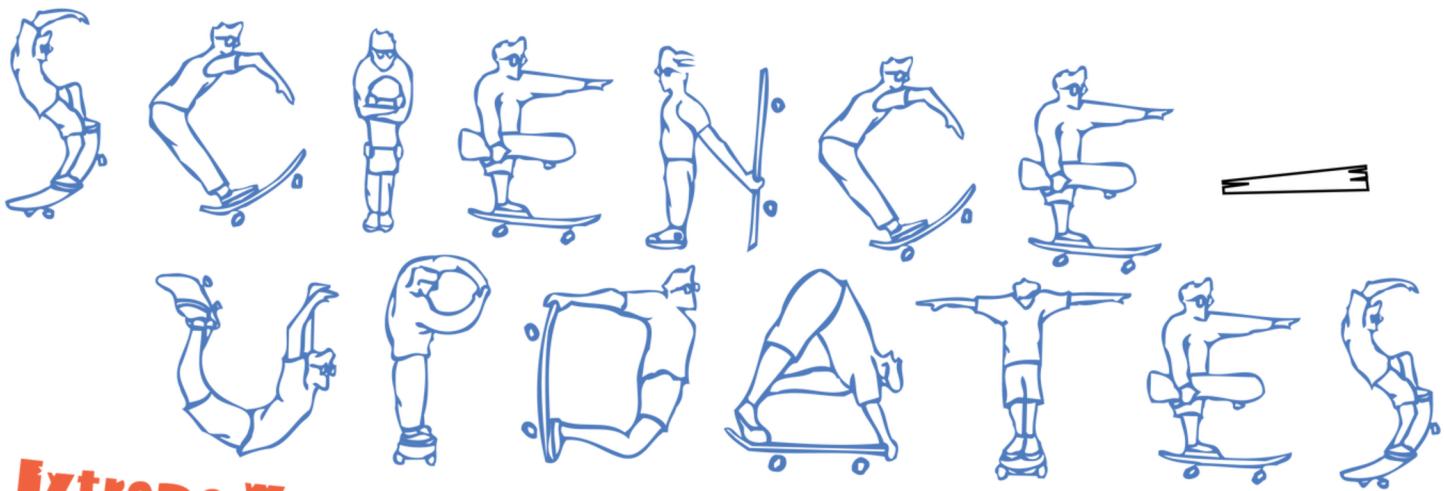
Apart from all these styles, we have granola moms, Disneyland parenting, monster parenting, umbrella parenting, lighthouse parenting, all self explanatory and are combinations of the many parenting styles that exist.

To be fair to the parents, most only want the best for their children but whether they achieve it or not with all these parenting styles is a completely different thing altogether.

So many external variables influence a child to become the adult he or she ultimately becomes.

Parenting has never been easy and it has gotten way more harder with all the challenges we have in the modern world. A good benchmark would be to follow the wisdom of reasonably good parents who are real and a part of your life and not complicate it by leaning on a hundred different ideas online.

Trusting your immediate community rather than the ultra large online community that might not have a lot in common should make sense.



Extreme Weather and Nitrate Pollution



Researchers found that drought causes crops to absorb less nitrogen, leaving unused fertiliser in the soil. When heavy rains follow, nitrates from this fertiliser can seep into groundwater within days, exceeding safety limits.

This process, intensified by extreme weather, poses significant health risks, including cancer and infant illnesses. The findings underscore the urgent need for improved water and soil management practices.



A survey of 100 animal behaviour researchers found 98% believe primates experience emotions, with most attributing emotions even to insects (67%) and invertebrates (71%).

Respondents viewed denying animal emotions ("anthropodenial") as more problematic than projecting human traits onto animals. This first-of-its-kind study maps current views, offering a baseline for future research.

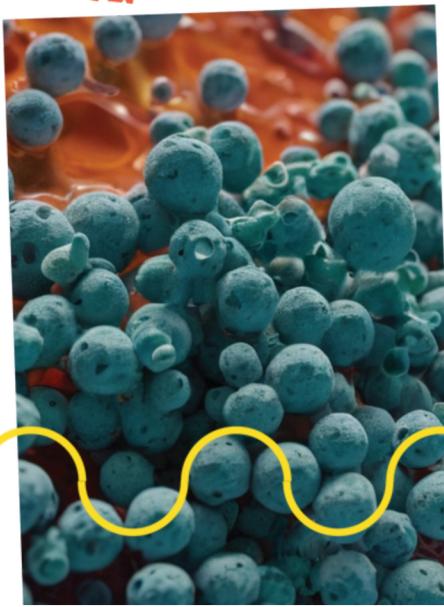
Animal Emotions and Consciousness



Revolutionary Hidden Molecular Holes

Scientists have discovered materials with "hidden holes" that appear only under specific conditions, precisely trapping certain chemicals.

This technology could enhance water purification, making drinking water



safer, or refine oil separation for cleaner fuels.

It demonstrates how natural principles can inspire smarter industrial processes, impacting daily life and the environment

Auditory Magic for the Mind's Ear



Researchers held a contest to create magic tricks experienced through sound alone, with the winning trick manipulating a voice to seem as though it jumped and circled the listener. This inclusive project expands magic to the visually impaired and hints at broader uses for auditory illusions in entertainment, therapy, and education.



AI Headphones with Sound Bubbles

Researchers at the University of Washington have developed AI-powered headphones that amplify voices within a 3-6 foot bubble while reducing outside noise by 49 decibels.

Unlike traditional noise-cancelling, the system uses microphones and neural networks to isolate nearby sounds by distance. This innovation could transform communication in noisy spaces like offices and restaurants.

Light Pollution Endangers Honey Bees

Artificial light disrupts honey bees' sleep and critical behaviours like the "waggle dance," vital for pollination.

With light pollution now covering 25% of Earth's surface, researchers suggest shielding lights or reducing nighttime exposure near hives. These findings raise concerns for other pollinators, vital for ecosystems and crops supporting global food security.



Curiosity

Curiosity drives us to explore the unknown, ask questions, and solve mysteries. But how does it evolve

with age? Are children naturally more curious, or does our curiosity simply change as we grow?

It's not about right or wrong answers, but how curiosity and instincts guide you.

By participating, you'll contribute

to a larger story about how

I FIND YOUR VIEWPOINT TO BE...

QUITE CURIOUS

we explore and decide.

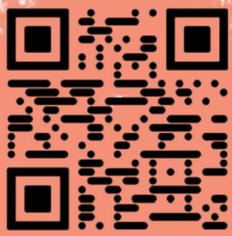
Discover the results in next month's issue. Ready to begin? Your journey awaits.

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explore and decide



To uncover this, we've created an interactive experiment—a 3-5 minute adventure through a mystical forest where your choices shape the journey.



Curiosity:
It may have killed the cat,
but it has taught me
almost everything I know.

Who knows what this is?



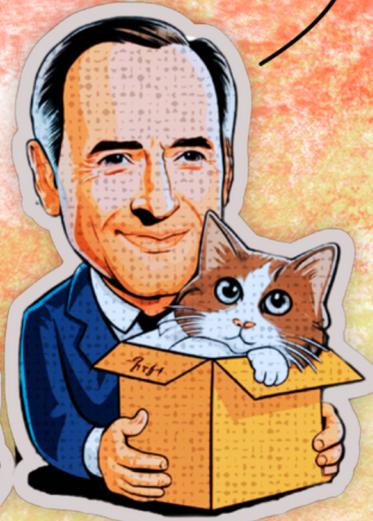
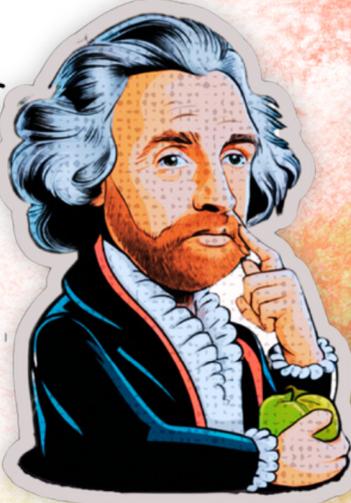
The Mel
@themelaniedione

A teachable moment for an overly curious child in a car alone.

"Curiosity didn't just kill the cat—it discovered gravity."

"Curiosity killed the cat?
Maybe. Maybe not. Open
the box to find out!"

"Curiosity didn't kill
the cat... but it
definitely made
it glow."



CURIOSITY

it killed the crow.



"Sorry! its curiosity"



Unified Vision for Science

Building a collaborative Ecosystem

Param Science's quarterly seminar series, uniting education stakeholders to catalyze education reform and ensure quality, hands-on learning for all.

Panel Discussion |  **06.12.2024**
4:00 PM to 4:40 PM



Sajoo Bhaskaran
Director
VITM



Nithya Sathian
Senior Astronomy Educator
Navaras Edutech



Aravind Ramachandran
Head of Didactics Initiatives
Janatics



Veena Mohan
President
Pragnya Public School

Know Thy Organization **4:45 PM to 5:45 PM**



Click or Scan
For RSVP

Networking Session **5:45 PM to 6:15 PM**



Yuvapatha Seminar Hall, 2nd floor, 31st cross, 11th main road
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December Workshops

Basic 3D Designing & Printing Workshop

What You'll Learn:

Introduction to 3D design tools
Hands-on experience in creating 3D models
Learn how to bring your designs to life with 3D printing

When: 15 Dec 2024, Sunday from 11.30am to 1.30pm

Where: PARSEC, Jayanagar

Who: Beginners and enthusiasts of all ages!

Registration Fee:
Rs.250/-

4-Day Winter Science Camp

What Awaits You:

Fun-filled hands-on science activities
Exciting experiments to spark curiosity
Perfect for young innovators and explorers

When: 26 to 29 Dec 2024,
11.30am to 1.30pm

Where: PARSEC, Jayanagar

Who: Curious minds aged 6 to 12 years

Registration Fee:

Rs.300/- per workshop;
Membership - Rs.1,000/- for all four



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to make a difference!

