A Science Magazine For Tech- Crazy Kids

Science for Kids

Rs.60

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Drones - Special

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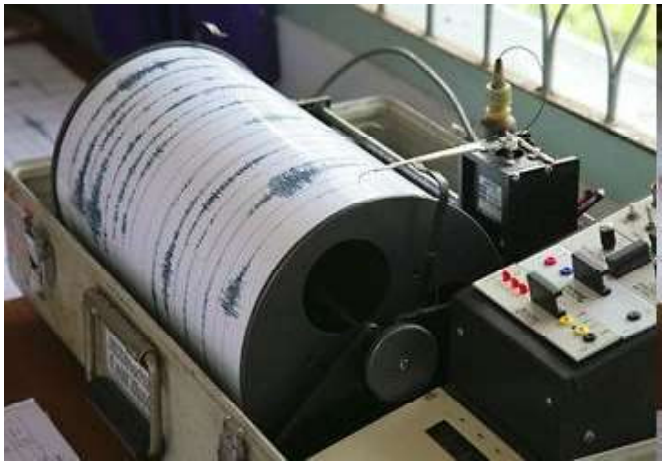

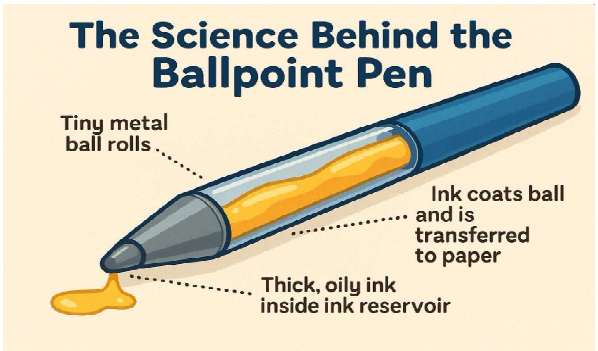

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The Magazine for Tech Crazy Kids

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Visual Quiz

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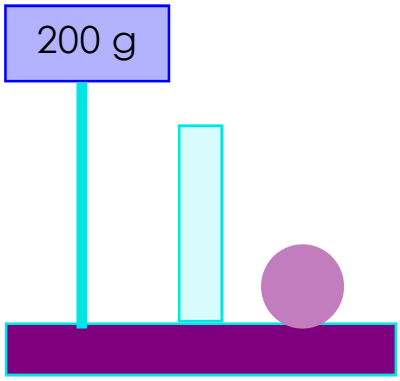

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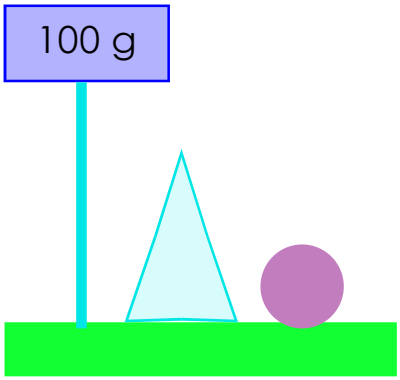

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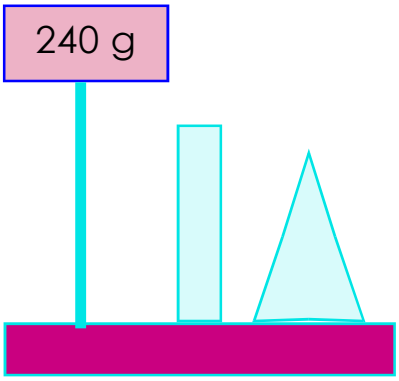

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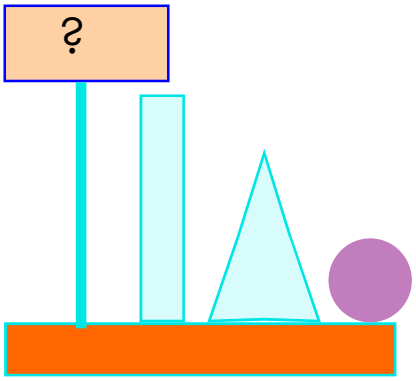


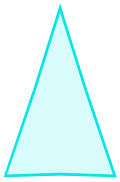
How much do the three different building blocks weigh together?

a. 270g b. 280g c. 290 g d. 300g e. 310g

Answer - Visual Quiz

= 170

= 30



= 70

The three different building blocks weigh together is 170 + 30 + 70 = 270 g. So the answer is (a)

Drones: The Flying Robots

Have you ever seen a small flying machine zooming through the air without a pilot inside? **That's a drone**

Drones are super cool robots that can fly on their own or be controlled by people using remote controllers

Drones, also called Unmanned Aerial Vehicles (UAVs), use a combination of science and technology to fly.

How Do Drones Work

Propellers & Motors

Drones have four propellers (like fans) that spin really fast to lift them into the air. These propellers are powered by small electric motors.

Battery Power

Most drones run on rechargeable batteries. The battery gives energy to the motors, sensors, and cameras.

Remote Control

Drones are controlled using a remote controller or a smartphone app. Some advanced drones can even fly on their own using GPS (like a car's navigation system).

Sensors & Cameras

Drones have special sensors that help them stay balanced in the air, avoid obstacles, and take amazing pictures or videos.

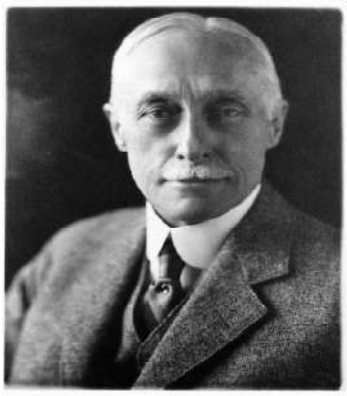
The invention of drones (Unmanned Aerial Vehicles, UAVs) is attributed to multiple scientists and engineers who contributed to their development over time.

Nikola Tesla (1898)

Proposed the idea of a remote-controlled aerial vehicle in his patent for a radio-controlled boat.(1898) – The brilliant scientist who first created a radio-controlled boat, which laid the foundation for drone technology. He even imagined flying machines controlled by radio waves!

Elmer Sperry (1916-1917)

Developed the first gyroscopic stabilizers for aerial torpedoes, leading to early UAV concepts.



Elmer Sperry & Peter Cooper Hewitt (1918) –

These inventors built the Kettering Bug, one of the world's first unmanned aircraft used in World War I. It was like a flying robot

Archibald Low (1917) –

British scientist who created the first radio-controlled aircraft, known as the “Aerial Target.

Archibald Low

Peter Cooper Hewitt

Reginald Denny (1930s-1940s)

Developed the first mass-produced UAV, the "Radioplane," used for military training.

Reginald Denny

Abraham Karem (1970s-1980s)

Known as the "Father of Drones," he designed the Predator drone, one of the most advanced drones used by the military and later for other purposes like rescue operations and science research

Abraham Karem

Drones have come a long way from simple remote-controlled planes to high-tech flying robots used in almost every field today

Drones fly using a principle of physics called lift and thrust.

Lift

When the propellers spin, they push air downward, creating an upward force that lifts the drone.

Thrust

The drone moves forward, backward, left, or right by changing the speed of its propellers.

Yaw, Pitch, and Roll

These are the three ways a drone moves:

Yaw:

Rotating left or right

Pitch:

Tilting forward or backward

Roll:

Tilting sideways

This movement helps drones fly smoothly and perform tricks in the air

Drones are not just for fun—they are used in many important fields

Photography & Filmmaking

Drones capture stunning aerial photos and videos for movies, sports, and travel.

Rescue Operations

In emergencies, drones help find missing people and deliver medical supplies. Farming

Farmers use drones to check crops, spray fertilizers, and monitor fields.

Security & Surveillance

Drones help police and security teams watch over large areas.

Delivery Services –

Some companies are testing drones to deliver packages to customers!

Science & Environment

Scientists use drones to track wildlife, study volcanoes, and monitor climate changes.

Fun Facts About Drones

The first drones were developed for military use in the early 1900s.

The fastest drone in the world can fly over 300 km/h (186 mph)

Some drones can be as small as a coin, while others are as big as a car There are drone racing competitions where pilots race drones at super high speeds!

You can learn to fly a drone using a simulator before flying a real one

Drones are amazing flying machines that use science, technology, and engineering to perform many exciting tasks. Whether it's for fun, research, or saving lives, drones are shaping the future of aviation.

Lift and Thrust: Real-Life Examples

Drones fly using two important forces: Lift and Thrust.

These same forces help many things move in real life! Here are some fun and simple examples:

Airplanes

Just like drones, airplanes use lift to stay in the air. Their wings push air downward, creating an upward force (lift). The engines provide thrust to move forward.

Birds Flying –

Birds flap their wings down to create lift and push backward to create thrust. That's how they glide and soar in the sky

Ski Jumping

When a skier goes down a ramp and jumps, the air under their skis gives them lift, and their speed gives them thrust to move forward.

Helicopters

The spinning blades of a helicopter push air downward, creating lift, and when they tilt forward, they create thrust to move ahead.

Race Cars with Spoilers

Unlike planes, race cars use "downforce" (the opposite of lift) to stay stuck to the ground.

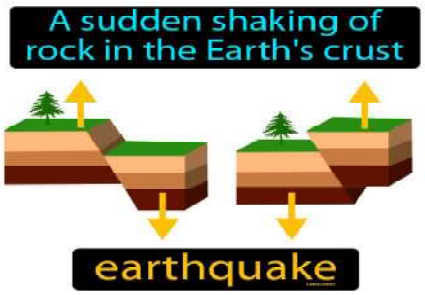
Their engines provide thrust to make them go faster!

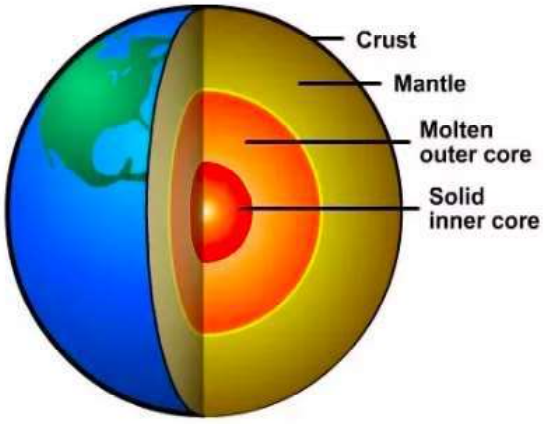
These forces are all around us in nature and machines.

That's why learning about lift and thrust is so exciting!

Seismometer– Listening to Earth's Heartbeat

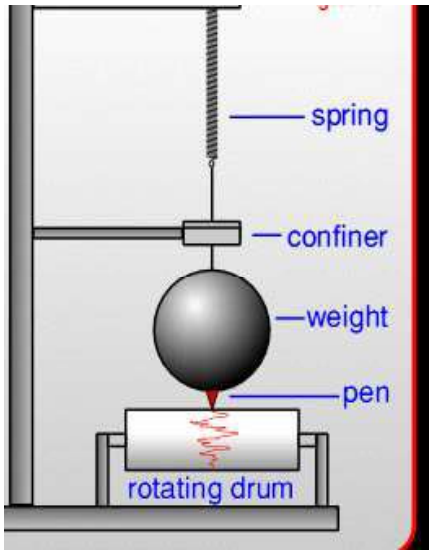
An earthquake is a literal term for the phenomenon of the Earth's surface shaking due to seismic activity occurring beneath the crust.





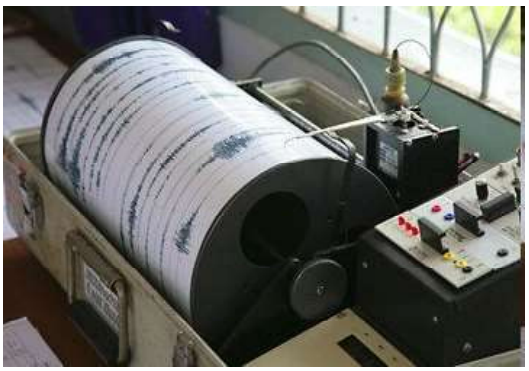
These seismic waves, generated by the Earth's lithosphere (the upper crust and mantle), cause the various tectonic plates that form the outermost part of the Earth to shudder, which in turn makes the ground we stand on shake violently.

Known as tectonic plates, these massive rock formations are constantly shifting due to movements in the mantle below and the planet's steady rotation. This continuous motion can create cracks in the Earth's crust, known as faults. Earthquakes occur when the crust suddenly shifts along or near one of these fault lines.



Seismometer: The Earthquake Detector

A seismometer is a special instrument used by scientists to detect and measure earthquakes. It helps us understand how the Earth's surface moves and shakes.



Who Invented the Seismometer?

The first known device to detect earthquakes was invented by a Chinese scientist named **Zhang Heng in 132 AD.** His instrument, called the Houfeng Didong Yi, could detect distant earthquakes but could not measure their strength.

In the 19th and 20th centuries, scientists developed modern seismographs, which are more advanced versions of seismometers that not only detect earthquakes but also record them on paper or digitally.

How Does a Seismometer Work?

A seismometer works by using a heavy mass (pendulum) that stays still while the ground moves.

A stable base is placed on the ground.

A suspended mass (weight) inside the device remains still due to inertia.

When an earthquake happens, the ground moves, but the suspended mass doesn't move immediately.

This difference in movement is recorded as a wavy line on paper or a digital screen.

Scientists analyze these waves to understand the earthquake's strength, location, and depth.

Why Are Seismometers Important?

Detect Earthquakes:

Helps scientists know when and where an earthquake happened.

Tsunami Warnings:

Helps predict dangerous tsunamis after earthquakes.

Volcano Monitoring:

Used to detect underground volcanic activity.

Studying Earth's Interior:

Helps scientists understand the layers inside the Earth by analyzing how waves travel.

Fun Facts About Seismometers

The largest earthquake ever recorded was in Chile in 1960, measuring 9.5 on the Richter scale!

The Moon has seismometers too! Astronauts placed them on the Moon to study "moonquakes.

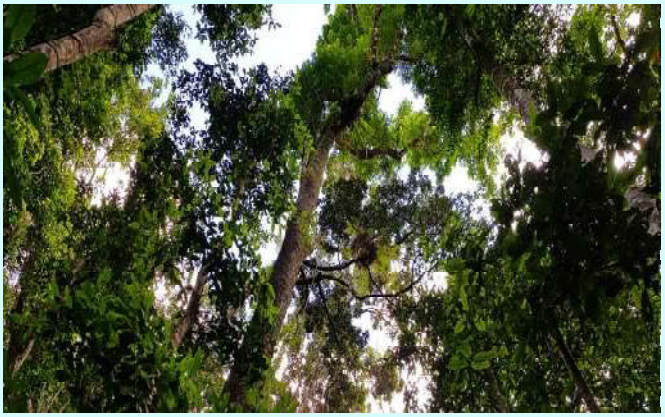
Scientists use seismometers on Mars to study "Marsquakes!"

Seismometers are super cool tools that help scientists study earthquakes and keep people safe.

World Famous National Parks

1. Daintree Rainforest Australia

The Daintree is home to around 3,000 species of plant. This includes trees, ferns, palms, vines and many more. Within that 3,000 there are around 925 species of tree, and in some areas, we can find as many as 120-150 different tree species in a single hectare. This huge range really helps to set this magical rainforest apart from other rainforests across the world.



The rainforest is named after Richard Daintree, who was an Australian geologist and photographer.

The World's Oldest Rainforest.The Daintree Rainforest is at least 135 million years old

Daintree Flora

It is located on the north-east coast of Queensland, north of Mossman and Cairns.

The Daintree Rainforest is a bioluminescence marvel. If we take a wander through this spectacular rainforest at night you may be fortunate to spot the glow of bioluminescent moss, fungus and even glow worms

ANIMALS OF THE DAINTREE

The Daintree is home to a number of animals that are found nowhere else in the world such as the Southern Cassowary, the Daintree River ringtail possum, the musky rat-kangaroo.

The musky rat-kangaroo is a rare animal that lives in the north-east Australia and can be sighted in the Daintree.

There are also over 12,000 types of insects thriving in the Daintree Rainforest, and well over 200 species of land snails.

The incredible natural beauty and immense wildlife diversity of the Daintree Rainforest attracts more than 400,000 visitors each year.

Gooseberry – A Tiny Fruit Packed with Big Benefits

The gooseberry is a type of fruit with a greenish color. It resembles an unripe clementine and belongs to the same family as the currant.

In a 100-gram serving, gooseberries provide 44 calories and are an excellent source of vitamin C. They are also a good source of B vitamins and minerals such as copper, calcium, phosphorus, and manganese.

Gooseberries are composed of 88% water, 10% carbohydrates, and less than 1% protein and fat.

The gooseberry grows as a shrub with woody branches and long spines that emerge from the axils of its leaves. It can reach a height of 4 to 6 feet and a width of up to 6 feet.

The gooseberry produces small, bell-shaped green flowers that grow on the lateral branches, either individually or in groups of up to four.

Gooseberries bloom in the spring and attract various insects.

Gooseberries are edible and can be eaten fresh or used as an ingredient in desserts such as pies, fools, and crumbles.

They are also used to flavor beverages such as sodas, flavored waters, and milk and can be made into fruit wines and teas.

Gooseberries can be preserved as jams, dried fruit, or pickles, either as the primary or secondary ingredient, and can also be stored in sugar syrup.

The gooseberry can produce fruit and survive for at least 20 years in the wild.

Gooseberries contain compounds that may help prevent the development of certain types of cancer, neurological disorders, and inflammation.

Gooseberry flowers are also capable of pollination by wind. Their bisexual flowers, which contain both types of reproductive organs, can self-pollinate if insects or wind fail to do so.

The gooseberry propagates through seeds and cuttings.

Puzzles with Sea Animals

1. I have eight arms, but I'm not a hugger. I can change colors, but I'm not a chameleon. I squirt ink when I'm in trouble. Who am I?

2. I may be slow, but I carry my home wherever I go. I live in the ocean and have a hard shell. Who am I?

3. I don't have a brain, but I can glow. I move with the ocean's flow. Who am I?

4. I am shaped like a pancake but have a long, stinging tail. I glide through the water without fail. Who am I

5. I have a big mouth and eat tiny creatures. I'm the largest fish, but I won't eat you! Who am I

6. I have no eyes, but I can make a pearl. My shell is my home in the deep blue world. Who am I

7. I have black and white fur, but I'm not a panda. I swim in the cold and waddle on land. Who am I

8. I carry a pouch where my babies stay, and I look like a tiny horse. Who am I

9. I sing songs underwater, and I'm one of the biggest animals in the ocean. Who am I

10. I have five arms and love to stick to rocks. I can regrow my limbs if I lose one. Who am I

1– 0ctopus, 2 – Sea Turtle,3 – Jellyfish, 4 – Stingray, 5 – Whale Shark

6 – Oyster, 7 – Penguin, 8 – Seahorse, 9 – Whale, 10 – Starfish

What is the difference between the oil that put in the car and the oil they use for cooking

Believe it or not, vegetable oil and motor oil are quite similar in some ways.

They both share the usual physical characteristics of all oils—they do not mix with water and

remain liquid at room temperature.

However, chemically, they are quite different.

Vegetable oil belongs to the **triglyceride subfamily** of oils, whereas motor oil belongs to the **hydrocarbon subfamily**.

Triglyceride oils are composed of carbon, hydrogen, and oxygen atoms,

while hydrocarbons consist of only carbon and hydrogen atoms.

Motor oils are generally made from petroleum, which is derived from crude oil found naturally in the ground. On the other hand, vegetable oils come from plants and seeds.

Why Does Our Body Need Water?

Have you ever wondered why we feel thirsty and why drinking water makes us feel fresh? That's because water is like a magic potion for our body! It helps us stay alive, energetic, and healthy. Let's dive into the science behind why our body needs water.

Water

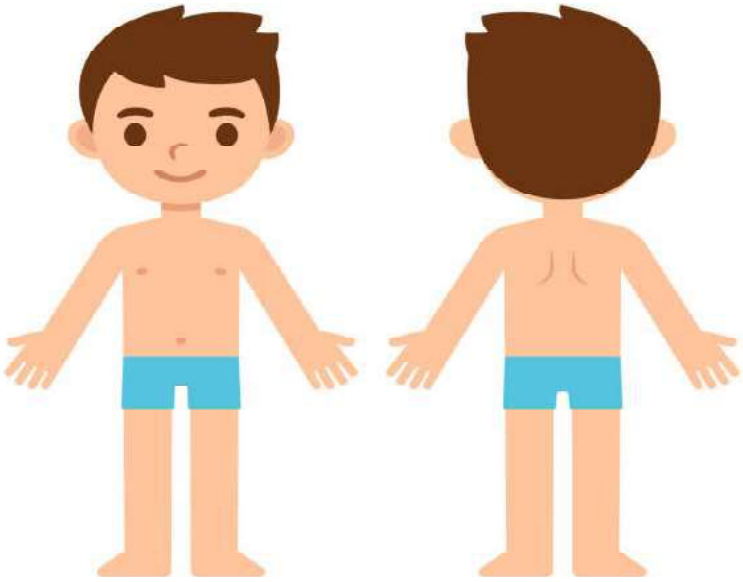
The Main Ingredient of Our Body

Did you know that about 60% of our body is made up of water. Every single part of our body—our brain, heart, muscles, and even our bones—contains water. Just like how plants need water to grow, our body needs water to work properly.

How Water Helps Us

Helps in Digestion

When we eat food, our stomach needs to break it down into tiny pieces so our body can use the nutrients. Water helps make digestive juices that soften the food and absorb the good stuff from it. Without water, digestion would be slow and difficult!



Keeps Us Cool

Have you ever noticed that when you play outside, you sweat? That's your body's way of keeping cool! Sweat is mostly made of water. When it evaporates from our skin, it takes away heat and cools us down.""

Makes Blood Flow

Our blood carries oxygen and nutrients to every part of our body. But did you know that blood is made of 90% water. If we don't drink enough water, our blood gets thicker, making it harder to flow smoothly. That can make us feel tired or dizzy.

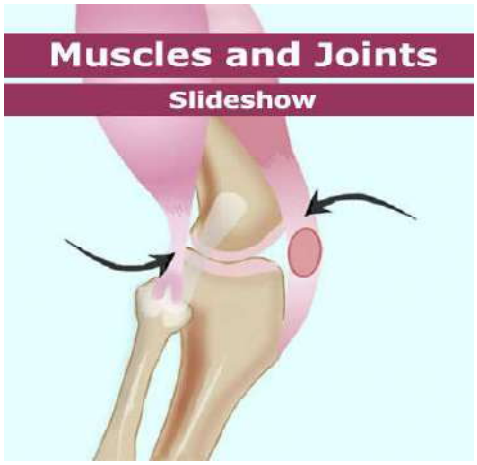
Helps the Brain Work

Our brain needs water to send messages to different parts of our body. When we don't drink enough, we might find it hard to concentrate, feel sleepy, or even get a headache. So, drinking water makes us smarter and more active

Removes Waste from Our Body

Every day, our body creates waste, like sweat and urine. Water helps flush out toxins from our body so we stay healthy. If we don't drink enough, waste can build up and make us feel sick.

Keeps Joints and Muscles Strong



Water acts like a cushion in our joints, preventing them from rubbing against each other. It also helps our muscles move smoothly so we can run, jump, and play without feeling stiff.

How Much Water Do We Need

Doctors say that kids should drink 6 to 8 glasses of water every day. But if we're running, playing, or it's a hot day, we should drink even more

Fun Fact:
Can We Live Without Water
Not for long

While we can survive without food for weeks, we can only live a few days without water. That's because water is essential for almost everything our body does

---

Almost all Earth's water is in the oceans.

A newborn baby is 78 percent water. Adults are 55-60 percent water

It's really great that ice floats in water.

Black pepper – King of spices

Black pepper, a common spice, comes from the dried, unripe fruit of a vine called Piper nigrum, and is known for its spicy taste and health benefits.

It's a fruit, not a seed

The black pepper we use is actually the dried, unripe fruit of a vine, not a seed.

Black pepper is one of the most popular and widely consumed spices in the world, sometimes called the "king of spices".

The black pepper plant is a vine that grows in warm, tropical places like India.

It helps in food preservation

Black pepper is a plant that grows in the tropics, especially in India. The plant is a perennial vine that bears flowers

Black pepper can help your body absorb other nutrients and may even help with digestion.

People have been using black pepper as a spice and medicine for thousands of years.

Black pepper is the most common, we can also find white pepper and green pepper, all from the same plant.

Propagation is usually by stem cuttings, which are set out near a tree or a pole that will serve as a support.

Pepper plants are sometimes interspersed in tea or coffee plantations. They begin bearing in 2 to 5 years and may produce for as long as 40 years.

Black pepper contains vitamins and minerals that are good for your body, like vitamin C and iron. It's a good source of vitamins and minerals

Black pepper has antimicrobial properties that help keep food fresh. It's called "black gold":

Science Challenges

1. Cooled lava on earth's surface turns into

a. Magna b. Sedimentary rock

c. Metamorphic rock d. An igneous rock

Igneous rocks form when hot, molten rock crystallizes and solidifies

2. A living thing's home is called

a. Trait b. Habitat

c. Soil d. Food web

3. Which organ in our body stores a lot of nutrients

a. Brain b. Skin

c. Liver d. Pancreas

The liver is the primary organ in the body that stores a significant amount of nutrients.

4.What are the nutrients that are needed to grow, build and repair body cells

a. Carbohydrates b. Calories

c. Proteins d. Fat

5.Which state of matter has particles or molecules packed tightly together

a. Solid b. Liquid

c. Gas d. All of these

6.The only movable bone of human face is

a. Lower jaw b. Upper jaw

c. Cheek jaw d. Ear bone

Science Challenges

The only movable joint in the skull bone is the lower jaw bone.

It is the largest, strongest and lowest bone in the human face.

7. The young one of a cow is

a. Cub b. Calf c. Kitten d. Chick

8.A broom is what type of simple machine

a. Screw b. Pulley

c. Wheel and axle d. Inclined plane

Our broom is an example of a third class lever with the load force at the brush end and the fulcrum at the handle end.

9.The mantle is the earth's thickest layer and is made up of

a. Nickel and iron b.Water

c.Magma or melted rock

This rock is mostly made up of minerals containing magnesium, silicon, and oxygen, along with smaller amounts of other elements like iron, aluminum, and calcium

10. The shadow cast by heavenly bodies is called

a. Umbra b. Penumbra c. Eclipse

An eclipse takes place when one heavenly body such as a moon or planet moves into the shadow of another heavenly body

Answers – science Challenges

1 – d, 2 – b, 3 –c, 4 –c, 5 –a,

6- a, 7 –b, 8 – d, 9 – c, 10 – c

Mental Ability

1. A dress cost twice as much as a shirt.Mrs. Vasu paid Rs.120 for 1 dress and 3 shirts. What is the cost of 1 shirt?

a. 24 b. 30 c. 72 d. 90

A dress cost is twice of shirt.

2x + 3x = 120, 5x = 120 x = 24, so the cost of 1 shirt is Rs.24/

2. Asha needs to prepare 216 bouquets of 8 roses each. How many roses does she need in total?

a. 27 b. 208 c. 224 d. 1728

216 x 8 = 1728 So the answer is (d)

3. In a game, 2 bonus tokens were given for every 5 tokens won. Latha collected a total of 150 tokens. How many bonus tokens was he given?

a. 21 b. 24 c. 32 d. 42 For 100 tokens 40 bouns tokens + 2 bonus tokens for 10 token 140 42 bonus tokens was given to latha. So the answer (d)

4.The product of two numbers is 99. One of the numbers is 9. Find the average of the two numbers?

a. 10 b. 11 c. 20 d. 50

The other number is 11

The average of two numbers is 11 + 9 = 20/2 10

So the answer is (a)

Mental Ability

5. There were 4700 kg of flour in a factory.After 3050 kg of flour were sold, all the remaining flour was packed equally into 300 packets. What was the mass of flour in each packet?

a. 0.55 kg b. 1.65 kg c. 5.5 kg d. 16.5 kg

Remaing flour = 4700 – 3050 = 1650 /300 5.5 kg

Eachpacket was the mass of 5.5 kg

6. John has some chickens & goats in his farm. The animals have a total of 38 legs. If there are 2 more goats than chickens how many goats are there?

7 goats = 7 x 4 = 28, 5 x 2 = 10 = 38

There are 7 goats in his farm.

7. Mrs. Kamala ordered 155 apples for a party. He ordered 78 more apples than oranges. How many oranges did he order?

For oranges he ordered = 155 – 78 = 77

He ordered 77 ornages.

8. Mrs Latha sold 10L of fruit juice each day from Monday to Saturday. He sold 5 L more on Sunday . How many litres of fruit juice did he sell for the week?

From Monday to Saturday = 10 x 6 = 60

Sunday 10 + 5 = 15 . So he sold 75L

Horsepower of Nature – Learn About Mammal

Horses are one of the most domesticated animals in the world. They have been with humans in almost every walk of life since ancient times, . They belong to Phylum Chordata, Family Equidae, and Genus Equus.

They are common worldwide including United States, China, India, and Pakistan.

A male horse is a stallion, and a female horse is a mare.

The general term for a young horse is foal. A young female horse is a filly, and a young male horse is a colt.

They can sleep while in the standing position or while lying down.

Horses are large and very strong. A typical domesticated horse stands 1.5 meters) tall at the shoulder. It weighs about 520 kilograms.

They are herbivores and extensively consume plant materials, e.g. grasses and leaves.

They also love to eat many types of grains and fruits such as oats, barley, corn, apples, and carrots.

On average, a horse can consume about 10 Kg of food in a single day.

They have only one stomach and can't store food like cows and camels etc.

Horses are also good at drinking and can drink more than 12 gallons of water per day.

They are good runners and can maintain a very good balance under very hard conditions.

Domesticated horses shouldn't be deprived of food for more than eight hours.

Horses like to live together with other horses in herds because they are social animals

Unlike humans and most animals, horses' teeth are always growing irrespective of their age.

A horse's height is measured in a unit called a hand.

Arabian horses are one of the strongest and beautiful horses in the world.

A horse's legs are strong even though they look very slender. A horse's foot is actually a single toe protected by a hard covering called a hoof.

The hoof is made of the same material as a human toe nail or fingernail.

Horses have hooves which need protection by horseshoes from hard or rough ground.

Horses have excellent day and night vision, but they have two-color, or dichromatic vision

Horses Communicate with Their Ears

when a horse is happy or curious, their ears are relaxed and pointed forward. If a horse feels threatened or scared, their ears will flatten against their head. Horses are very good at reading each other's ear signals, helping them understand what's going on around them.

They become fully mature by the age of 5 years and their average life goes from 25 to 30 years.

Every day Mathematics

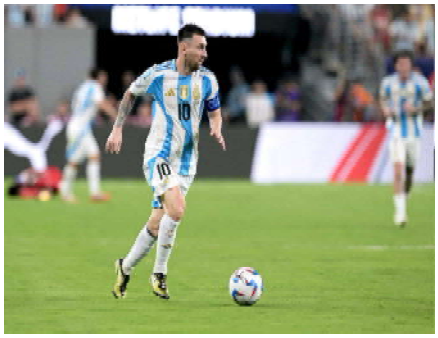
1. Ravi has 60 cakes for his birthday. A three fourth of these cakes are distributed. How many cakes are left with him?

2. Sankar is a video game addict. He has 14 video games. He gives 6 of the games to his friend shiva, In exchange, Shiva gives sankar 4 games. How many games does sankar have now ?

3. 143 children went to the zoo in the morning.45 boys and 65 girls joined them in the afternoon. How many children were at the zoo altogether?

a. 260 b. 273 c. 253 d. 280

4. Messi played a total of 27 soccer games during the months of June, July and August. He played 9 games in June and 10 in July.What month did he play more games.



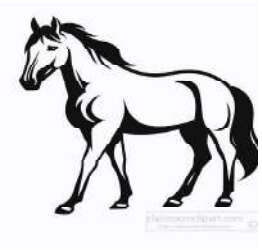
5. My grandmother' age is divided by 15 and the result is 5. How old is my grandmother.

a. 75 years b. 80 years c. 90 years

d. 45 years

6.At the beginning of the school years, Suresh's mother bought him 50 pencils. In February Suresh had 23 pencils left. How many pencils had he used?

7. A horse's height is measured in a unit called a hand. A hand measures 4 inches.What is the height in inches of a horse that measures 12 hands?



a. 48 inches b. 52 inches c. 36 inches

d. 66 inches

8. Last week 232 fourth- class students rode in 4 buses on a field trip. The same number of students rode on each bus. How many students rode on each bus?

a. 58 b. 60 c. 57 d. 52

9. Neelu walks to school each day. He leaves home at 8.40 A.M and arrives at school ground at 9.03 A.M. How many minutes does it take Neelu to walk to school

a. 19 minutes b.20 minutes c.22 minutes d.23 minutes

Lithium – The Energy Hero of the Periodic Table

We may have seen little thumbnail sized or even smaller battery cells used in watches and other electronic gadgets. Lithium is the element that gives them power.

Lithium (Li) is a silvery gray metal with an atomic number of three. While being the lightest metal under normal conditions, it is still the most dense.

With an atomic number of three, lithium has three protons in the nucleus, but like many other alkalai metals it has only one valence electron.

This element is ideal small batteries which must be light and compact for their use in wrist watches, pocket calculators, toys and even cardiac pacemakers. Due to its lightness, it is also veryuseful in aircraft manufacture.

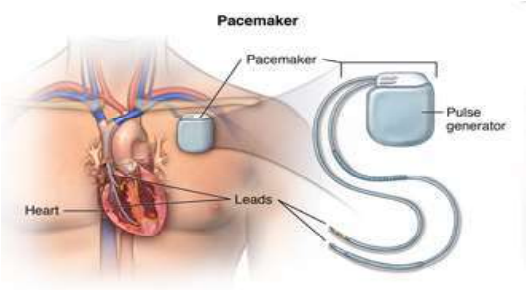
Interesting Lithium Facts:

It is the least reactive of the alkalai metals.

The nucleus of lithium is fairly unstable.

Because of this instability, lithium alone almost never appears in nature.

While it appears metallic and shiny, it begins to corrode immediately in air due to the moisture present.



It is a metal, but soft enough to be cut with a knife.

The first man-made nuclear reaction took place in 1932 when lithium was converted into helium through transmutation.

Lithium is used in producing glass and ceramics, but most well-known for batteries.

Because of its great strength in small amounts, it is used in common alloys.

All organisms contain lithium in small amounts, but does not seem to serve a biological purpose.

Lithium ions are used in creating mood-altering medications for the treatment of bipolar disorder.

Lithium has two stable isotopes in nature, one of which has a 92.5% abundance.

According to theory, lithium is one of three elements believed to have been created during the Big Bang.

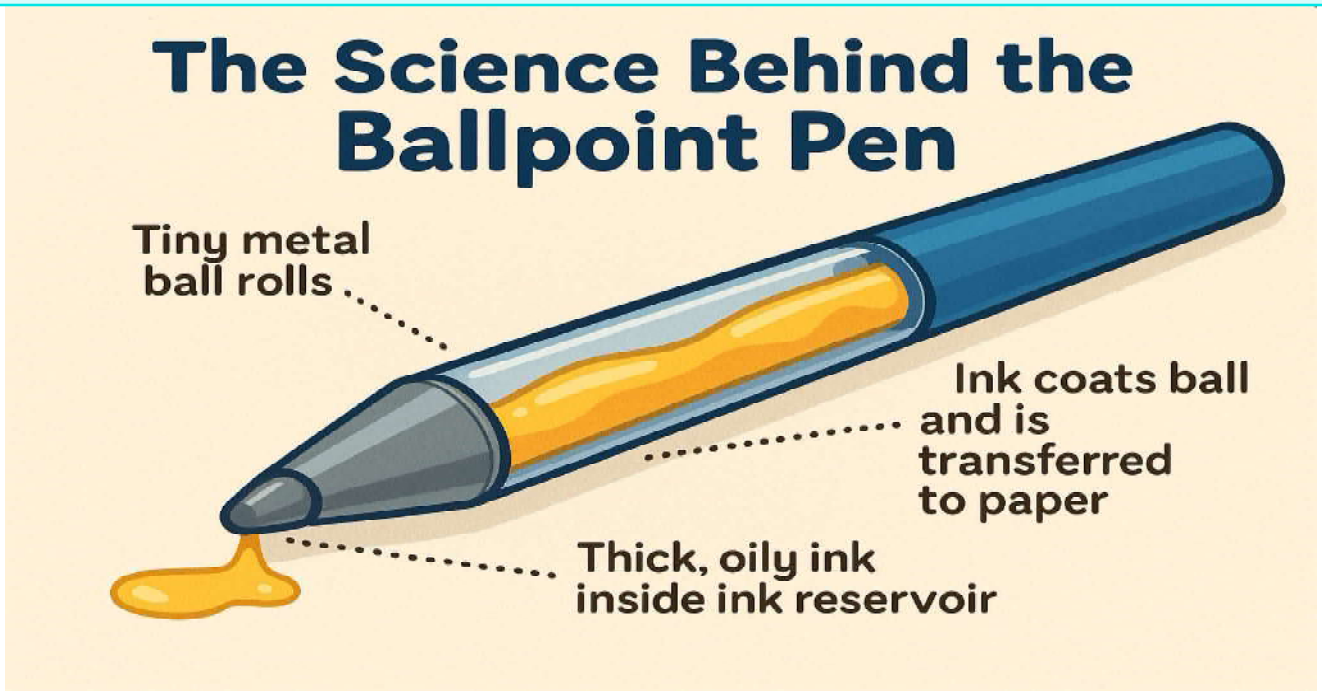
Lithium is very abundant in sea water and if often mined from brines and clay.

Lithium salts burn with a bright red flame.

The current availability of lithium is a deciding factor in the creation of larger batteries for electric car production.

Lithium has become carefully guarded since it is a key ingredient in the production of methamphetamine

The Science Behind the Ballpoint pen



Ball point pen is just a plastic tube with some ink. But look closely at the tip, and you'll see a tiny metal ball, usually made of brass, steel, or tungsten. This ball is the secret hero

Ballpoint pen ink is normally a paste containing around 25 to 40 percent dye.The dyes are suspended in a mixture of solvents and fatty acids. The most common of the solvents are benzyl alcohol or phenoxyethanol, which mix with the dyes and oils to create a smooth paste that dries quickly. This type of ink is also called "oil-based ink"

Laszlo Biro invented the modern ballpoint pen . So A ballpoint pen, also known as a biro

How Does It Work?

Rolling Action: The tiny ball is held in place so it can spin or roll freely.

Ink Flow: When you press the pen to paper, the ball rolls. As it rolls, it picks up ink from the ink reservoir (the tube inside the pen) and spreads it on the paper.

The ball acts like a valve, letting just the right amount of ink out – not too much, not too little.

So, we get neat, clean writing without any messy ink blobs!

The ink in a ballpoint pen is thick and oily, unlike the runny ink in fountain pens.

It is generally believed that gravity is needed to coat the ball with ink

However, in the microgravity environment of space a regular ballpoint pen can still work, pointed in any direction, because the capillary forces in the ink are stronger than non present gravitational forces

Technology developed by Fisher pens in the United States resulted in the production of what came to be known as the "Fisher Space Pen

Ballpoint pens were found to be more versatile than fountain pens, especially in airplanes, where fountain pens were prone to leak.

A fountain pen is different. Instead of a ball, it has a nib that is separated by two tines

Super Swimmers: Fish That Travel Between Rivers and Oceans

Did you know that some fish travel between rivers and oceans during their lives? These special fish are called **diadromous** fish.

They are like nature's travelers—going back and forth between freshwater (like rivers and lakes) and saltwater (like oceans and seas).

Even though they make up only 1 out of every 100 fish in the world, they have amazing stories to tell!

There are three Kinds of Traveling Fish

Anadromous Fish – Ocean to River

These fish live in the ocean but swim to rivers to lay their eggs.

They're born in freshwater (rivers).

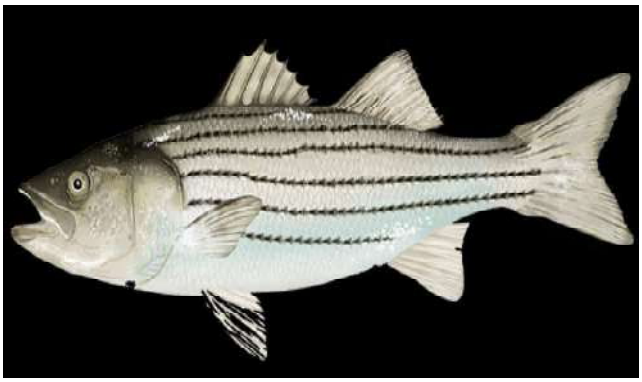
They grow up in saltwater (oceans).Then they swim back to freshwater to lay eggs

Examples

Salmon

Striped bass

Alewife



Striped bass

Fun Fact: Some salmon travel thousands of miles and jump up waterfalls to reach their home river!

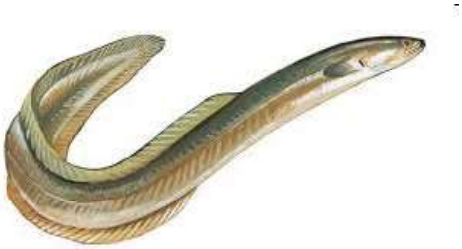
Alewife

Catadromous Fish – River to Ocean

These fish do the opposite

They live in rivers and lakes but swim to the ocean to lay their eggs.

The American eel



Fun Fact:

The American eel swims all the way to the Sargasso Sea, near Bermuda, to lay eggs. That's a super long trip!

Amphidromous Fish – Back and Forth

These fish go between rivers and oceans too—but not just for babies! They move to find food or safety and can lay eggs in either place.

Cool Facts About Diadromous Fish

They change their bodies so they can live in saltwater or freshwater.

Some travel thousands of miles—like swimming across countries!

They help keep rivers and oceans healthy by being part of the food chain.

These amazing fish are nature's adventurers. Next time you see a river or the sea, imagine what exciting journeys these fish might be taking.

Everyday Mathematics - Answers

1)15 cakes were left 2)12 games 3)c, 4)c, 5) – a,

6) – 27 pencils, 7) – a, 8) – a, 9) – d

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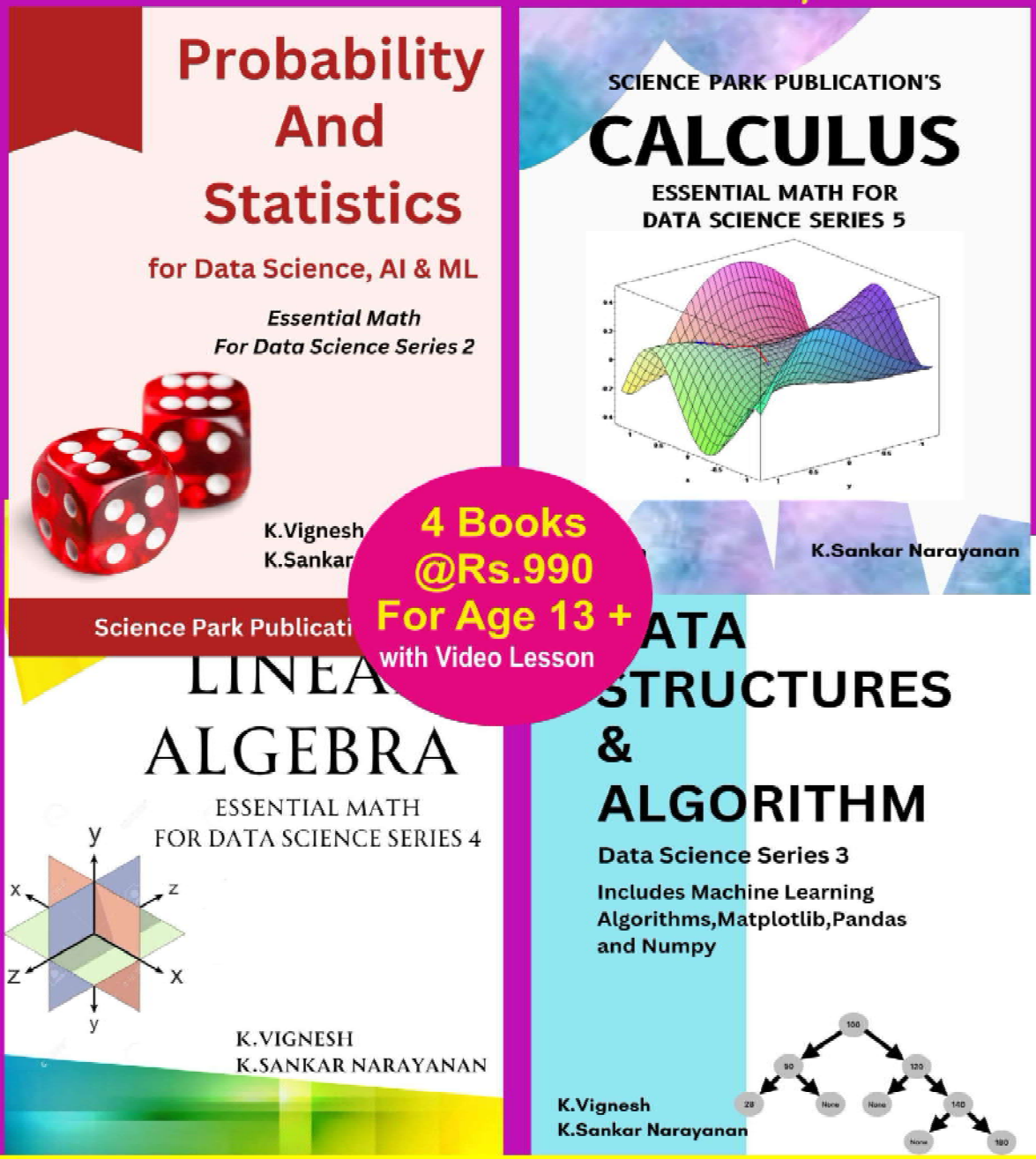
Essential Maths for Data Science, AI & ML



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