



Easter Camps 2021

Zoom Interactive Live Classes for 4-7 and 8-12 years

- All our Zoom webinar/meeting classes are live-streamed and highly interactive. These will have both, camera and microphone functionalities turned on for all students and the teacher. However, if you do not want your child to appear on camera, it can be switched off, which will not affect the ability to participate actively.
- Classes are recorded and monitored for safety & quality
- Great for inspiring and exploring science at a young age
- Stimulating, engaging and brains-on.
- For group or weekly bookings, please email us: info@littlehouseofscience.com

Alexander Graham Bell and the Invention of Telephone Mon, 29 March (10.00 for 4-7 and 11.30 for 8-12 years)

Discover how Alexander Graham Bell brought to the world the idea of the telephone. We will look at the evolution of the telephone and its functions. Children will learn how telephones work, what sound waves are and how to measure the sound loudness. - **Did you know?** Alexander Graham Bell refused to have a telephone in his study, fearing it would distract him from his scientific work.

Chemistry of Metals Mon, 29 March (14.00 for 4-7 and 15.30 for 8-12 years)

We will explore what a metal is, discover how we get metal and where it comes from? What are the properties of metal? How do we make metal all different shapes? What is smelting? Do we have metals in our bodies? With the older children we will also explore different groups of metals in the periodic table. The lesson is packed with experiments and demonstrations!

Let us Study Pressure Tue, 30 March (10.00 for 4-7 and 11.30 for 8-12 years)

Do you know why footballers use the boots with studs? What do ski slid and why do balloons burst? Can we walk on eggs? In this lesson we will introduce the concept of pressure and explore different aspects of pressure: pressure in liquids, pressure in gasses, pressure in atmosphere and even absolute pressure! The lesson is packed with experiments and demonstration which are easy to do at home. Learning about pressure is a perfect way to excite the children about science!

The Periodic Table in Our Bodies Tue, 30 March (14.00 for 4-7 and 15.30 for 8-12 years)

If there was a recipe for humans, what would be the ingredients? Our bodies are made up of many different elements. Did you know that there are six elements which together make up 99% of the mass of the human body? We will explore the role of oxygen, carbon, hydrogen, nitrogen, calcium, phosphorus in our bodies!

Friction and Other Forces Wed, 31 March (10.00 for 4-7 and 11.30 for 8-12 years)

In this physics workshops, children will learn why friction is the enemy of motion and what is the difference between static friction and sliding friction. We will discover ways to beat friction and explore how people and animals use friction in daily life! Can friction cause fire and much more!---

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**Neurosurgeons: The Brain and The Central Nervous System Wed, 31 March
(14.00 for 4-7 and 15.30 for 8-12 years)**

Join Little House of Science for an exciting journey about the incredible machine inside your head! We will discover how the brain looks like and how it controls the body? What is a thought? Why do we laugh or cry? What happens when we dream? We will journey through different parts of the brain and learn about the importance of neurons and how memories are stored. Come and discover your fascinating and marvellous Brain!

Bicycle: The Physics Behind It Thu, 1st Apr (10.00 for 4-7 and 11.30 for 8-12 years)

“Everybody knows how to ride a bike, but nobody knows how we ride bikes” Mont Hubbard ----The invention of the bicycle changed our lives! We will explore the evolution of the bicycle their efficiency. We will look at the structure of the bicycle: wheels, gears, and brakes ; we will explore together why we do not fall from the bicycle? With the older children we will also learn about the importance of wind resistance in competitive cycling and how much CO2 does cycling save?

Dorothy Hodgkin and the World of Crystals Thu, 1st Apr (14.00 for 4-7 and 15.30 for 8-12 years)

Children will learn about the science of crystals and Dorothy Hodgkin who studied crystals and got the Nobel Prize in Chemistry! Dorothy Hodgkin was one of the pioneer scientists in the field of X-ray crystallography studies of biomolecules, which became an essential tool in the field of structural biology. We will look at the structure of crystals, discuss how snowflakes are formed and what is common between carbon and diamonds!

Intelligent Noses: The Science of Smell Tue, 6 Apr (10.00 for 4-7 and 11.30 for 8-12 years)

The sense of smell helps us understand the world. We have about 4 million smell cells in our noses, divided into about 400 different types! In this workshop we will explore our noses and learn about the anatomy of smell. The children will understand the relation between smell and taste (about 80% of what we taste is due to our sense of smell) and how the sense of smell is connected to our memory. Almost all animals have a better sense of smell than humans. Some animals such as octopuses, butterflies, and other animals do not have noses like ours. But that does not mean the creatures have no sense of smell! The children will learn about some amazing animals with phenomenal olfactory capabilities.

Extremophiles, The Aliens Amongst Us Tue, 6 Apr (14.00 for 4-7 and 15.30 for 8-12 years)

Could life exist in the clouds, on mountain tops, in volcanoes, the Dead Sea or the bottom of the Marianna Trench? Yes, microbial life has been found to flourish in all these extreme environments. An extremophile is a life form that is specifically adapted to survive in extreme environments, and we will explore some of them like giant amoeba, tube worms and tardigrades. The children will also lean about astrobiology and how scientists are looking for signs of life of other planets!

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Sun: Our Closest Star Wed, 7 Apr (10.00 for 4-7 and 11.30 for 8-12 years)

In this lesson we will go on a tour of the Solar System to explore the life story of the most important star for us, our Sun! This ball of energy burns about 4 million tonnes of gas every second! this is more than 7 trillion nuclear reactions occurring every second! Is our Sun still a baby star? Children will learn about the structure of the Sun, what is plasma and what are solar winds. We will discuss the latest solar space missions and why do we need them.

Dinosaurs and other Prehistoric Life Wed, 7 Apr (14.00 for 4-7 and 15.30 for 8-12 years)

The dinosaurs ruled the Earth for over 165 million years, but mysteriously became extinct 65 million years ago. However, none of us has seen a dinosaur. If that is true, how do we know that they even existed? We will become palaeontologists for a day and study these fascinating creatures and what happened to them. The children will learn about Mary Anning and the famous Bone Wars. The younger children will learn the differences between carnivores, herbivores, and omnivores and how palaeontologists know which one a dinosaur was. We will look at dinosaurs' skeletons and find similarities with other animals. Are some dinosaurs still alive? Were they colourful and feathery?

Great Navigators Thu, 8 Apr (10.00 for 4-7 and 11.30 for 8-12 years)

What tools were used by the early mariners to navigate by? Children will discover the navigators' most reliable tools, the stars and the sun and become familiar with traditional compasses. We will explore the navigation in the animal world and learn about magnetoreception in birds and fish. It is fascinating that many animals might still have the ability to perceive the magnetic fields that have long been invisible to us! in the second part of the lesson, we focus on the basic features of maps and how to read them. We will get familiar with the concepts of longitude, latitude, and equator.

The Science of Jellyfish Thu, 8 Apr (14.00 for 4-7 and 15.30 for 8-12 years)

Learn all about the fascinating world of jellyfish, the world's first ever predators that have been present in our oceans and rivers for over half a billion years! We will discover some weird and wonderful species, from the giant lion's mane to mysterious deep-sea jellies that can glow in the darkness. We will study their unique weaponry, the cnidocytes; stinging cells that paralyse prey with toxic venom. We will learn that jellyfish are adaptable survivors... Did you know that some even have the startling ability to live forever?

The Amazing Life of David Attenborough Fri, 9 Apr (10.00 for 4-7 and 11.30 for 8-12 years)

Over the years his face – and his voice – have become synonymous with environmentalism and a love of nature. He has collected dozens of honorary titles from universities across Great Britain, had numerous species named after him, and received a knighthood for his work. With certainty, David Attenborough helped invent the natural history documentary as we know it today. In this lesson children will learn about the process of filming animals in the wild, we will also discuss animal extinction, coral bleaching and the problems caused by microplastic in the ocean.

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Isaac Newton and the Science of Colour Fri, 9 Apr (14.00 for 4-7 and 15.30 for 8-12 years)

Isaac Newton changed the way we understand the Universe. He discovered the laws of gravity and motion, invented calculus, discovered the colours in light. Children will learn that light that looks white is really a mixture of every different colour jumbled together so thoroughly that you cannot see them separately! Why do colours exist and what is spectrum? The older children will learn about the importance of wavelengths and why rainbow exist? How our eyes see colour and why hummingbirds can see colours we can't even imagine?

Optical Illusions or How Our Brain Deceives Us Mon, 12 Apr (10.00 for 4-7 and 11.30 for 8-12 years)

The object that our eyes see is interpreted by our brain so that we can understand and describe what you are looking at. Often, the images that we see are perceived in a different way by our brains. So, why do optical illusions happen and how real is world around us? Did you know that each human eye has a blind spot, and the brain sometimes has to fill in what is there by looking at the surrounding area? Children will study about light, patterns, and colour that create images that trick our brain. We will explore the anatomy of human and animal vision and the connection with the brain.

What is Density? Mon, 12 Apr (14.00 for 4-7 and 15.30 for 8-12 years)

This class is an introduction of the concept of Density. What are Atoms and what are States of Matter? What are Exotic States of Matter? How is density different from weight? Do mass or volume affect density and much more. The lesson is packed with experiments the children can do at home. We will look at some elements from the Periodic Table and their properties. With the older children we will explore how density and heat are related.

Jane Goodall and the Apes Tue, 13 Apr (10.00 for 4-7 and 11.30 for 8-12 years)

This lesson is an introduction in anthropology and a homage to the amazing work of Jane Goodall who conducted a 55-year-long study on the behaviour of chimpanzees in Tanzania! Modern humans have been walking the Earth for 200,000 years, but our ancestors were around for millions of years before that. Our ancestors were like us - but not quite the same. So, who were our ancestors? Children will learn who are the Great Apes and how did we evolve into modern humans.

What is Artificial Intelligence? Tue, 13 Apr (14.00 for 4-7 and 15.30 for 8-12 years)

Robots are predicted to do almost half of the jobs that are currently done by people. Especially repetitive meticulous jobs. If you look at a factory floor, you will see that already a lot of the jobs are done by machines - allowing people to be in charge of entire systems rather than one tiny part. Robots also allow us to go to places that we cannot yet take people to. We have not yet found a way to get people on Mars, but in 2011 the Curiosity Rover was launched from Cape Canaveral and landed on Aeolis Palus in Gale Crater on Mars after a 350-million-mile journey! We will learn about the principle of feedback in robotics and the new developments in AI. Can machine learn creativity?

Chemical Engineering: The Story of the Battery Wed, 14 Apr (10.00 for 4-7 and 11.30 for 8-12 years)

Batteries are a collection of one or more cells whose chemical reactions create a flow of electrons in a circuit. However, the story of the invention of battery started with the biologist Luigi Galvani and his experiment with... frogs. He was convinced that animals could make electricity and that electricity in our bodies was what made us alive. His friend, Alessandro Volta, realized the frog was a conductor for electricity generated by the metal and called it metallic electricity. In this lesson we will discover what is a voltaic pile, how modern batteries are made, we will build a vegetable battery and discuss about the future of green battery.

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The Invention of Wheel and Axels Wed, 14 Apr (14.00 for 4-7 and 15.30 for 8-12 years)

Can you imagine living before wheels and axes were invented? You would not be able to ride a bike... and you would not be able to take the bus to school! Children will learn about the discovery of the wheel from around 35 000BC in Mesopotamia and examine the latest development in modern engineering. Children will learn how wheels multiply the force by reducing friction and providing leverage. We will look at the advantage of big wheels over small wheels and how gears work.

Frogs, Chameleons, and other Cold Blooded Animals Thu, 15 Apr (10.00 for 4-7 and 11.30 for 8-12 years)

Ectotherms or cold-blooded creatures were the first creatures to swim in the oceans and crawl onto dry land. Even though they have been around a long time, they are full of surprises! We will discover enormous lizards with venomous teeth, masters of disguise with tongues like catapults. Amazing jumping acrobats and pale, reclusive cave-dwellers that can survive for a decade without a meal. Join us on a journey through the steamy jungles and swamps of the world as we track down life in cold blood.

Reversible and Irreversible Chemical Reactions Thu, 15 Apr (14.00 for 4-7 and 15.30 for 8-12 years)

Chemical reactions are everywhere! When atoms and molecules rearrange to form new kind of molecules, we say a chemical reaction has taken place. Why are some reactions reversible and some irreversible? We will explore chemical change, physical change. The children will learn about melting and examine how materials melt changing from solid to liquid. We will also discuss the process of dissolving and demonstrate soluble and insoluble substances.

How Vera Rubin Discovered Dark Matter Fri, 16 Apr (10.00 for 4-7 and 11.30 for 8-12 years)

Vera Cooper Rubin was one of the greatest scientists of all time. Her incredible discovery set in motion a whole new branch of study that would begin to unravel the darkest secret of the Universe! She used powerful telescopes to view entire clusters of galaxies, but what was holding these clusters in place? She theorised that a huge amount of a strange type of matter must exist that keeps the galaxies together, like a weird cosmic glue. This matter could not be seen, so she called it Dark Matter, and we believe that it makes up 90% of all matter in the Universe! We will study the secrets of this mysterious stuff and learn all about the amazing science of cosmology. Did you know: From the age of ten, Vera was obsessed with the stars and even built her own telescope!

The Life of Bacteria Fri, 16 Apr (14.00 for 4-7 and 15.30 for 8-12 years)

Microorganisms are all around us, in the air, in our bodies and in water. Some microorganisms are harmful to us, but others are very helpful to us! Did you know that a single bacterium lasts as little as 20 minutes! But if there was enough food, one bacterium could multiply into a lump of bacteria larger than the entire planet in just three days! How bacteria differ from human cells or viruses? What is the structure? Why it is important to keep our hands clean? We will grow bacteria in petri dishes and made models.

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