

Workshop and Curriculum Map for



Key Stage 1 and Key Stage 2

Lifelab is a purpose-built suite of teaching laboratories where we offer over 40 different curriculum-linked workshops.

We offer workshops to school and educational groups which are linked to the National Curriculum and QCA schemes of work.

| Workshop | KS1 | Lower KS2 | Upper KS2 |
|--|-----|-----------|-----------|
| Alive in Space | ✓ | x | x |
| Ancient Greeks: Archimedes – The First Scientist | x | ✓ | ✓ |
| Anglo Saxons: Manuscripts From Scratch | x | ✓ | ✓ |
| Animal Adaptation | ✓ | ✓ | ✓ |
| Astronaut Training | x | ✓ | x |
| Changes of State & Gases Around Us | x | x | ✓ |
| Changing Circuits | x | x | Yr 6 |
| Chemical Change and Colour | x | x | ✓ |
| Circuits and Conductors | x | ✓ | ✓ |
| Circulation & Movement | x | ✓ | ✓ |
| Court of the Rainbow King | ✓ | x | x |
| Darwin's Worms | ✓ | ✓ | ✓ |
| DNA Discovery | x | x | ✓ |
| Egyptians: Mummification | x | ✓ | x |
| Fantastic Fossils | ✓ | ✓ | ✓ |
| Forces & Motion in Space | x | x | ✓ |
| Forensic Investigation | x | ✓ | ✓ |
| Friction & Magnets | x | ✓ | x |
| Gas! | x | x | ✓ |
| Growing Plants | x | ✓ | ✓ |
| Habitats | x | ✓ | ✓ |
| How Do We Know That the Earth is Rotating? | x | x | ✓ |
| How We See Things | x | x | ✓ |
| Jumping Bugs Investigation | x | ✓ | ✓ |
| Keeping Healthy | x | ✓ | ✓ |
| Light & Dark | ✓ | x | x |
| Light & Shadows | x | ✓ | x |
| Materials Investigation | ✓ | x | x |
| Mediaeval: Armour | x | ✓ | ✓ |
| Metals Investigation | x | ✓ | ✓ |
| Micro-organisms | x | ✓ | ✓ |

| Workshop | KS1 | Lower KS2 | Upper KS2 |
|--|-----|-----------|-----------|
| Normans: Plant Dyes & the Bayeux Tapestry | x | ✓ | ✓ |
| Planetarium – Earth, Sun & Moon | (✓) | ✓ | ✓ |
| Plants | ✓ | x | x |
| Plastics & Recycling | x | x | ✓ |
| Pushes & Pulls | ✓ | x | x |
| Reversible & Irreversible Changes | x | x | ✓ |
| Rocks & Soil | x | ✓ | ✓ |
| Romans: Roman Builders | x | ✓ | ✓ |
| Rubbish Rockets | ✓ | ✓ | ✓ |
| Second World War: Code Breaker | x | ✓ | ✓ |
| Solids, Liquids & Gases (LKS2) | x | ✓ | x |
| Sound of Science | x | ✓ | ✓ |
| Sumerians & Babylonians: The Start of Civilization | x | x | ✓ |
| Tudors: Chicken, Bacon, Germs & Disease | x | ✓ | ✓ |
| Using Electricity | ✓ | x | x |
| Vikings: Master Navigators | x | ✓ | ✓ |
| Water | ✓ | x | x |
| Young Darwin's Experiments | x | ✓ | ✓ |
| Your Body | ✓ | x | x |
| Your Senses | ✓ | x | x |

Alive in Space (1 hour)

Join an expedition into space and discover what it means to be alive. Lots of hands on fun as we learn about the planets in our Solar System and explore a new planet for living things. Can be combined with an education planetarium.

- Suitable for KS1

Ancient Greeks: Archimedes – The First Scientist (1 hour)

Why is Archimedes so important after all these years? Find out all about the inventions and discoveries of the world's first practical scientist and engineer. Includes work on forces, floating and sinking.

- Suitable for KS2

Anglo Saxons: Manuscripts from Scratch (1 hour)

How did the Anglo Saxons produce beautiful manuscripts like the Lindisfarne Gospels? Use Anglo Saxon methods to prepare parchment and inks, cut quills and produce a manuscript of your own.

- Suitable for KS2

Animal Adaptation (1 hour)

Investigate the ways that that marine animals keep warm in icy water, how elephants keep cool when it is hot and how animals avoid their predators using camouflage. For older groups, this will include discussion of the ways that heat is transferred.

- Suitable for KS2

Astronaut Training (1 hour)

Are you made of the Right Stuff? Find out in this workshop which explores the problems faced by astronauts as they live and work in space. Includes an SC1 Investigation on Maximum Absorbency Garments and can be combined with an education planetarium.

- Suitable for KS2

Changes of State & Gases Around Us (1 hour)

How are gases different to solids and liquids and what different properties do they have? Discover some of the world's smelliest gases and explore density, colour and changes of state through hands-on activities and demonstrations.

Workshops for Year 6 students will adopt a particulate theory approach.

- Suitable for Upper KS2

Changing Circuits (1 Hour)

Students explore circuit problems and fuses. This workshop provides revision and challenging extension on the topic of electricity for upper KS2.

- Suitable for Year 6

Chemical Change & Colour (1 hour)

Starting from a clear colourless liquid, students carry out a sequence of reactions which result in a wide variety of colour changes and other exciting (but safe) reactions. Students make their own indicator then use this to test a variety of household chemicals to discover if they are acids or alkalis.

- Suitable for Upper KS2

Circuits & Conductors (1 hour)

Students find out which materials conduct electricity and which don't. They use this knowledge to build a quiz game to take home and go on to investigate how components of a circuit work. (For Year 6 pupils, *Changing Circuits* might be more appropriate.)

- Suitable for KS2

Circulation & Movement (1 hour)

How does exercise affect your heart? How well do your lungs work? How do your muscles work? How is your skeleton made up and what sorts of joints are found where? A practical investigation of breathing, circulation and movement.

- Suitable for KS2

Court of the Rainbow King - Light & Colour (1 hour)

Pupils use their expanding knowledge of colour and light to help a scientist-wizard bring colour to a land left grey by a wicked witch. Lots of dressing up and fun when groups make colours appear, disappear and create their own test-tube rainbows.

- Suitable for KS1

Darwin's Worms (KS1) (1 hour)

Open ended investigation at its best. Children are shown a mass of wriggling worms and invited to suggest the kind of questions they would like to answer about them. The class discuss which questions could be answered (ethically!) by experiment. Students decide their favourite question then carry out their own investigation to provide the answer using the range of lab equipment provided.

- Suitable for KS1

Darwin's Worms (KS2) (1½ hours)

Open ended investigation at its best. Children are shown a mass of wriggling worms and invited to suggest the kind of questions they would like to answer about them. The class discuss which questions could be answered (ethically!) by experiment. Groups chose their favourite question then carry out their own investigation to provide the answer using the wide variety of lab equipment provided.

- Suitable for KS2

DNA Discovery (1 hour)

What does DNA look like? Where can you find it? How can you get it out? An amazing practical experience which reveals the DNA at the heart of all living things. The workshop also includes a practical exercise to explore how DNA is inherited.

- Suitable for Upper KS2

Egyptians: Mummification (1 hour)

How do you make a mummy? Become a trainee Egyptian priest and learn the importance of dehydration in mummification by carrying out an SC1 investigation using salt to dry chicken pieces. Once you are fully trained, mummify a vulture and ensure that the proper rituals are observed to allow it to pass on into the afterlife.

- Suitable for Lower KS2

Fantastic Fossils (KS1) (1 hour)

Explore what we mean by a fossil by comparing things which are alive, never alive and dead. Become a palaeontologist, dig in the sand to find a T.Rex and match dinosaur skeletons to the whole animal. Combine body parts to make a true-to-life dinosaur and give it a scientific name of your choosing.

- Suitable for KS1

Fantastic Fossils (LKS2) (1 hour)

Find out how palaeontologists work out what dinosaurs ate by examining their teeth and use this information to build up food chains. Use observation to sort fossils into groups and make your own fossil cast to take home.

- Suitable for LKS2

Fantastic Fossils (UKS2) 1 hour

Make a dino adapted to a specific habitat & food source, identify real fossils with the fossil key, dig for fossils to recreate a dinosaur and make a fossil cast to take home.

- Suitable for Upper KS2

Forces & Motion in Space (1½ hours)

Everyone wants to be an astronaut but how do we get into space? Perform hands-on experiments using sensors and data capture to explore Galileo's classic experiment measuring the speed of falling objects, investigate the effects of air resistance and design and launch your own rocket. Can be combined with an education planetarium.

- Suitable for Upper KS2

Forensic Investigation (1 hour)

Check out the realistic crime scene and become a forensic scientist. Investigate shoeprints, use magnifiers to study fingerprints, microscopes to study fibres and chromatography to investigate ink to find out who murdered Bert Evans.

- Suitable for KS2

Friction & Magnets (1 hour)

Use fun, hands-on experiments to explore the forces around us. Students discover differences between magnetic materials, non-magnetic materials and magnets; use shuffle boards to explore friction; parachutes of different sizes to investigate air resistance and jumping toys to explore the potential energy in springs.

- Suitable for Lower KS2

Gas! (1 hour)

Darwin was nick-named 'Gas' in his early teens because of his interest in making gases. This workshop gives students a chance to make and test several gases themselves and observe some of the more spectacular demonstrations of the properties of gases.

- Suitable for Upper KS2

Growing Plants (1 hour)

Find out what plants need to grow by looking at plants that have been kept in different environments. Investigate variation in cress seedlings in the lab, have fun looking at the parts of edible plants and make an animated flicker book to remind yourself of what happens when plants are not watered.

- Suitable for KS2

Habitats (1 hour)

A hands-on workshop to explore adaptation to habitats. Participants will carry out experiments to investigate why creepy-crawlies hide under stones. Students will use choice-chambers to see if the critical factor is light, desiccation or both. Students explore the wildlife associated with specific habitats, construct food chains and use keys to identify some unusual live creatures.

- Suitable for KS2

How Do We Know That the Earth is Rotating? (1 hour)

Many Science Centres have a Foucault's pendulum but without some investigative work with a small turntable, a pendulum on a stand and a model person, the experiment is incomprehensible to most students. With the appropriate background in place, setting up a giant pendulum then watching it appear to move is a 'Eureka!' moment. Can be combined with an education planetarium.

- Suitable for Upper KS2

How We See Things (1 hour)

Become a treasure hunter and discover how you can avoid laser traps and shine light into the heart of the darkest maze. Find out how you see, why shiny surfaces reflect and learn how to draw ray diagrams to find hidden treasure.

- Suitable for Upper KS2

Jumping Bugs Investigation (1½ hours)

Explore the ways that insects escape from predators then make jumping bugs to investigate what makes them jump highest. A full SC1 investigation.

- Suitable for KS2

Keeping Healthy (1 hour)

What's good about scabs? What happens when you break a bone? What's a balanced diet and what can animals' teeth tell us about the food they eat? A hands-on exploration of health and healing.

- Suitable for KS2

Light & Dark (1 hour)

Where does light come from? Why can't we see in the dark? What makes things shiny? Students investigate these questions in the lab and use their knowledge to take part in an adventure story where they escape from a dungeon.

- Suitable for KS1

Light & Shadows (1 hour)

What is a shadow? Why do shadows move? Students investigate different materials to classify them as transparent, translucent or opaque. The students then take part in a shadow puppet show using puppets they have made using their new-found knowledge.

- Suitable for Lower KS2

Materials Investigation (KS1) (1 hour)

Students sort materials according to whether they are natural or man-made. They consider various everyday objects and discuss what materials they are made from and why. Students carry out an investigation to discover which of a selection of materials is the hardest.

- Suitable for KS1

Mediaeval: Armour (1 hour)

What's the best material for armour? Explore the range of weapons available to mediaeval soldiers and carry out an SC1 investigation to decide the best metal for making armour.

- Suitable for KS2

Metals Investigation (KS2) (1 hour)

Students explore the properties of different metals and use their knowledge to identify why different metals are chosen to make specific objects. Students also carry out an investigation to discover which metal is the hardest.

- Suitable for KS2

Micro-organisms (1 hour)

What makes us ill? How can the body defend itself against microbes? How can microbes help us? A yucky investigation of the world of microbiology with added slime.

- Suitable for KS2

Minibeasts & Me (1 hour)

Compare exciting creepy-crawlies with ourselves to gain an understanding of what living things have in common. Lots of fun invertebrate activities ending with a great creepy-crawly story.

- Suitable for KS1

Normans: Plant Dyes & the Bayeux Tapestry (1 hour)

How did the Normans get the coloured thread for the Bayeux Tapestry? Become a forensic botanist and discover what plant dyes could have been used and then try them out in the lab to dye your own thread.

- Suitable for Upper KS2

Planetarium – Earth, Sun & Moon (1 hour)

Use our state-of-the-art planetarium to explore the night sky and its constellations, travel through our solar system, take a closer look at the moon and find out where shooting stars come from. Students will learn about night and day, phases of the moon and why years are different lengths on other planets.

- Differentiated for KS1 & KS2

Plants (1 hour)

Investigate why rainforest leaves are the shape they are, look for the parts of some very strange plants, take part in a quiz to see what you know about iconic British plants and make your own cress baby to take home. A lively session which shows that botany is brilliant.

- Suitable for KS1

Plastics & Recycling (1½ hours)

Discover the properties of plastic materials and learn how they can be recycled. In this workshop, students will recycle plastic to make giant paper clips by injection moulding and make their very own key ring from recycled plastic board.

- Suitable for Upper KS2

Pushes & Pulls (1 hour)

Sing along with the Forces Song, play table curling, help the Stunt Toys parachute display team and check out our Chair of Nails in this introduction to forces for the very young.

- Suitable for KS1

Reversible & Irreversible Changes (1 hour)

Students are invited into our purpose-built lab to learn how to use Bunsen burners safely, to heat samples of exciting chemicals and observe how they change. An introduction to chemistry.

- Suitable for Upper KS2

Rocks & Soils (1 ½ hours)

Find out how to be a geologist and read the stories hidden in some fantastic rocks. This workshop includes a full investigation to compare two different types of soil.

- Suitable for Lower and Upper KS2

Romans: Roman Builders (1 hour)

How did the Romans build their roads, forts and bridges? Use Roman surveying techniques to map out a marching fort and make your own roman road.

- Suitable for KS2

Rubbish Rockets (1 hour)

Make a rocket from scrap paper, fire it and see how it flies. Compare it with your friends'. How can you make yours fly better? The workshop ends with a grand rocket launch to identify the most successful designs. This workshop meets CDT and Science targets as well as promoting creativity.

- Differentiated for KS1 and KS2

Second World War: Code Breaker (1 hour)

How did the Enigma machine work and what was the importance of Bletchley Park? Learn how to create and crack codes and attempt to solve a wartime ethical dilemma in a structured dialogue activity.

- Suitable for KS2

Solids, Liquids & Gases (1 hour)

What are solids, liquids and gases and how do they change? Explore the properties of a variety of solids, liquids and gases in a series of fun hands-on activities and demonstrations. Includes an opportunity to use Bunsen burners to investigate boiling and condensation.

- Suitable for Lower KS2

Sound of Science (1 hour)

Check out the difference between noise and music in this workshop where students explore the relationship between volume and amplitude and investigate what controls pitch in musical instruments. Loads of noise, lots of fun.

- Suitable for KS2

Sumerians & Babylonians: The First Civilization (1 hour)

What made the Sumerians and Babylonians the first civilized people? Experience early metalwork techniques by smelting your own copper, investigate the first domesticated animals and the start of agriculture and find out about the Sumerian's special method of counting.

- Suitable for Upper KS2

Tudors: Bacon, Chicken, Germs & Disease (1 hour)

What did Tudor plague doctors really know about infectious diseases? Learn about the bubonic plague and other diseases of the time and the medicines and herbal remedies used to treat them and use Francis Bacon's 'scientific method' to carry out an SC1 investigation into the growth of micro-organisms. The workshop concludes with a dialogue activity about medicine in the past, now and in the future.

- Suitable for KS2

Using Electricity (1 hour)

Be an electrician and mend circuits, look at gadgets powered in different ways and learn about the dangers of mains electricity in an exciting (but safe) way.

- Suitable for KS1

Vikings: Master Navigators (1 hour)

How did the Vikings reach St Petersburg, Baghdad and Newfoundland? Investigate Viking navigational techniques and use your knowledge to find land when lost at sea.

- Suitable for KS2

Water (1 hour)

There is more than a hint of pirate fun in this workshop which looks at floating, sinking and the power of moving water. Amusement, amazement and a load of great science.

- Suitable for KS1

Young Darwin's Experiments (1 hour)

Students are invited to carry out some of the same experiments on colour change that Darwin and his brother Erasmus performed in their back-kitchen. We hope that these safe experiments will inspire the same sense of awe and wonder for the natural world that provided the basis for Darwin's adult career.

- Suitable for KS2

Your Body (1 hour)

How much are you like your friends? How much are you like other animals? Check out bones, teeth and body parts in this internal investigation.

- Suitable for KS1

Your Senses (1 hour)

How do we find out about the world about us? Tantalize your taste buds, harness your hearing, stimulate your sense of smell, trick your touch and astound your eyes in this hands-nose-tongue-eyes-and-ears-on experience.

- Suitable for KS1

We can also produce customised workshops to meet the needs of your students.

Please phone (0191) 243 8211 to discuss your requirements.