



making physics matter



How to...

create a primary science lab

Aim

To create a dedicated science teaching space within a primary school to improve the quality of teaching and learning in science and inspire young scientists.

Introduction

The Ogden Trust recognises the positive impact of a dedicated science teaching space within a primary school on pupils, staff and the wider community, and funding for Phiz Labs is a central strand of our Schools Partnership programme. This How to guide shares some of our Phiz Lab experience and we hope to encourage schools outside of the Ogden network to invest in their own primary science lab. Not every school has the space (or budget) to create a science lab, but there are elements of this How to guide that can be introduced into many schools to enhance the teaching and learning of science.



Why have a primary science lab?

A dedicated science teaching space can help to facilitate child-led learning and enable pupils to access a practical and engaging science curriculum. You can create a learning environment that nurtures the imagination and curiosity of children, capturing and encouraging their enquiries as they discover more about the world around them.

The space can also be used for science CPD, engaging staff more fully in the science curriculum and giving them the confidence to deliver practical science in an environment where they can allow pupils to explore and carry out practical investigations.

In setting up a science lab at your primary school, you are acknowledging that science is a highly valued and core aspect of your curriculum. As such, it should be considered with the same rigour as English

and maths, and subject leaders should quality assure all aspects of science across the school in a structured manner – work scrutiny, pupil, parent and teacher voice work, and, of course, tracking progress and attainment for all.

As well as covering core science content throughout primary school, primary science needs to develop pupil's working scientifically, questioning and critical thinking skills. A science lab will help your school to deliver the current curriculum requirements and will help to enhance and support a thematic approach to teaching. Science in a lab can help you to ensure that the development of working scientifically skills is at the heart of science learning, enabling pupils to make progress in both their scientific understanding and their skills.

Remember: the lab doesn't have to be a conventional classroom, could you repurpose an outbuilding or underused corridor space to create an area that is science-centric with displays and resources that promote child-led science learning and working scientifically?

What should my science lab include?

Every school will have different constraints regarding space and layout for their lab. For comprehensive guidance on lab design, visit the ASE website: <https://www.ase.org.uk/resources/lab-design>. As a starting point, we suggest you think about the following:

- Try to differentiate your lab from a regular classroom; think about using stools instead of chairs and provide the children with lab coats and goggles. Include low-level storage for resources so children can explore what they might need for their investigations. Make sure the room has suitable flooring to withstand practical investigations and that it has a sink/wash area.
- Make sure the space has lots of display areas. Scientific enquiry carried out by the children should be celebrated; science displays and noticeboards can help children to develop their scientific vocabulary and thinking skills and can support progression in working scientifically. Displays can also feature STEM role models and careers to inspire the pupils.



Science station

If you don't have space for a dedicated science lab, can you develop a science station or resources box with accessible resources, stored and ready for hands-on, practical science lessons? Equip your station with some core science resources, wheel it into the room and let the children explore and investigate. Celebrate science with displays along the corridors, in reception or the main hall.

Although resources will differ in each lab, it is important that they are easily accessible to encourage curiosity, scientific thinking and pupil-led investigations.

Remember, equipment should be appropriate for KS1 and KS2 enquiries and you should always note any health and safety considerations. Consider becoming members of CLEAPSS; membership will offer access to important ideas, guidance and safe practical ethics. As a CLEAPSS member you will also find guidance on how to correctly 'risk assess' practical science sessions.

<https://www.cleapss.org.uk/>



Mini and outdoor labs for EYFS

With an increasing focus on science in Early Years Foundation Stage (EYFS), why not consider creating a mini classroom or outside lab for younger learners?

A mini lab allows children to access resources to experiment with as part of continuous provision for understanding the world. It can include lab coats and goggles to encourage even the youngest children to see themselves as scientists.

An outside lab in EYFS can be used for investigations such as exploring sound with boom whackers, stretching long springs, making potions and exploring shadows or reflections in water.

How can we fund it?

Ogden funding is only available to schools in the Ogden Schools Partnership programme. Why not approach a local STEM business to support your school with your science lab project? If you can't find a company to fund the whole project, perhaps they will fund an element of it – lab coats? Microscopes? Try to set out your 'shopping list' and how much funding you need. Many companies have outreach programmes and support community initiatives; they are motivated to try and develop the skills they will need in the future and that pipeline starts at primary!

Remember, creating a space for science doesn't have to be expensive: start with some science displays that bring the subject to prominence and celebrate the school's young scientists; try to bring your science kit together into easily accessible storage that can be moved into a classroom as needed to signal 'science'.

Science is all about exploration and discovery; science labs encourage children to become 'scientists' and learn about the world around them; and what a fantastic environment for teachers to deliver practical science!

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Laura is also the Phiz Lab Lead for The Ogden Trust, spearheading our network of primary science labs, which is part of the Ogden Schools Partnership programme.

Visit www.ogdentrust.com/p3l to find out more about the Ogden Trust Primary Physics Professional Learning programme, developed to give teachers the confidence to deliver practical primary science.