

Science at Newsham Primary School



Science, as the focal point of our wider STEM offer, is an integral part of our children's experience while at Newsham Primary. Our motto: *We Are Scientists* is deeply rooted in the Primary Science Capital Teaching Approach in which we endeavor to help children to see science as something that is part of all of our daily lives.

Science and innovation makes and sustains our modern society, it has the power to change the way we live our lives and is integral to our future. In Blyth, we are world leading experts in the renewable energy sector, in advanced manufacturing and in engineering. There are thousands of incredible careers available in our town and the wider North East, and we are determined to ensure that as many of our children as possible are ready to take these opportunities should they wish to. By growing science capital in individuals and society, we can help more people to see science as an important part of their lives and culture, which will help broaden opportunities and access for STEM-related jobs in the future.

Science capital itself is a measure of your engagement or relationship with science, how much you value it and whether you feel it is 'for you' and connected to your life. It highlights the significance of what you know about science, how you think about it, what (science related activities) you do and who you know in shaping attitudes and feelings about STEM.

Regarding the what you know and how you think aspect of the approach, this is where our detailed curriculum planning comes in. Throughout their time at Newsham the children will progressively develop *substantive* (factual information) and *disciplinary* (working scientifically skills) knowledge. The substantive knowledge comes from our topics. Within each year group are science topics which contain the factual knowledge they will need. We want the children to be confident in correct scientific terminology so these units of work are clearly identified as either biology, physics or chemistry. As children progress through school, the children are exposed to scientific careers linked to each unit: from identifying themselves initially as scientists in the EYFS to becoming geneticists in Year 6.

Their *disciplinary* knowledge or *working scientifically* skills come from the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. 'Working scientifically' is embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils seek answers to questions through collecting, analysing and presenting data. The act of asking questions holds value in and of itself as Mr Gregory found during his trip to CERN. The physicists at the world's foremost science facility are still attempting to answer the same fundamental questions that scientists have been asking for hundreds of years: *what are we made of?, how did we get here? and where are we going?* Rather than being frustrated by this, they are amazed by how little we still know and are eager to continue to be curious, inquisitive scientists just like our students at Newsham Primary.