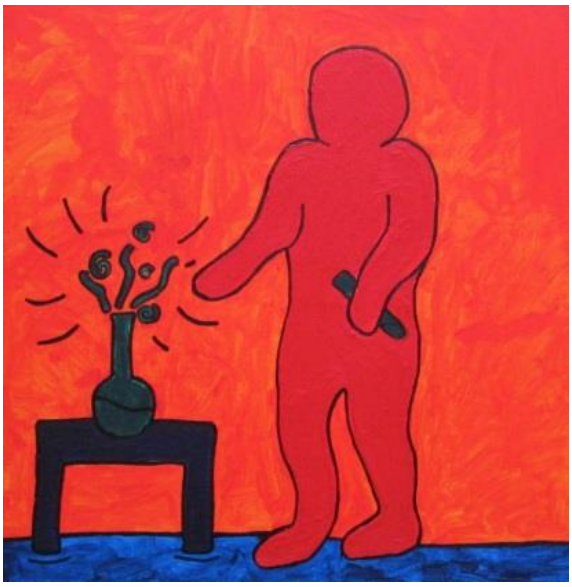
Last Updated 21st September 2021

Curriculum Intent for Science

At West Leigh we inspire and motivate children to learn about the world around them through exciting, practical and carefully planned science lessons.

'We are scientists'



Science takes place as a stand-alone subject each week and we use the National Curriculum programme of study for science as a starting point. This is then built upon and developed to suit our children and their needs, as well as following on from the learning in science in KS1. Our progression document ensures that no repetition takes place, and that children's depth of learning is developed when revisiting areas of learning such as plants or materials. Where possible, meaningful links are made with other areas of the curriculum, such as PSHE, PE and DT. We wish to inspire children to develop a love for science – already evident in our science days and events. We celebrate and promote STEM career options with visiting speakers and careers days.

Each year group works from clear medium term planning with a strong focus on 'working scientifically' within each lesson. We believe that, wherever possible, children should find out the scientific knowledge for themselves through exploring and investigating. We have collected a wealth of practical resources that can be used in lessons. Knowledge organisers are used in science to ensure that children can continually review their learning throughout topics and develop independence when researching and recalling information.

In order to plan progressively from Years 3 to 6, guidance is given as to how pupils structure their scientific investigations. Each year group has a structure to follow to ensure these key scientific skills are developed and built upon as they move up through the school. This consistent approach ensures a commonality of vocabulary used by staff and learned by children.

Lower Key Stage 2

In Years 3 and 4 the children begin by securing an understanding of the world around them and the key processes that form and shape their world – for example when learning about plants, rocks and sound. Children learn about their bodies and nutrition (as well as those of animals) and start to consider how they can look after their bodies as they begin to make independent choices about diet and exercise. This is further developed within work in D & T, when pupils design and make healthy food products in our purpose built pupil kitchen. We place a strong emphasis on learning the importance of healthy lifestyles as our pupils have limited outdoor space within school – we teach them the importance of maximising their time outside. We use our local areas (e.g. Belfairs Woods and Leigh Beach) to investigate habitats and develop classification keys for living things. The children begin building a firm foundation when learning about electricity and light that is built upon as they move up the school. These areas are linked to our Connected Curriculum topics; for example when creating moving fairground rides for Adventure Island in Year 4. The children also use skills within science that are developed in D & T through use of Lego WeDo, when programming their moving electrical models.

In Years 3 and 4 our children plan a simple fair test, identifying what they have changed and what they have kept the same. They begin to make hypotheses about the outcome of investigations and to justify these with reasons. They collect results independently and explore a variety of ways of doing this. Graphs and tables are used to accurately present results. Children look at their results and state what they have learned, identifying similarities and differences. They refer to their results within their conclusions.

Upper Key Stage Two

In Years 5 and 6, the children extend their thinking by considering difficult concepts such as evolution and inheritance. They study new topics that require greater scientific knowledge and understanding, such as life cycles and Earth and Space. They build on familiar topics from Lower Key Stage Two, for example light and electricity, where a firm understanding allows the children to broaden and deepen their knowledge and explore more challenging ideas such as varying the function of electrical components and changing the shape and size of shadows.

We choose to make links between our science curriculum and our PSHE curriculum in Year 5, as the children study the changes to their body due to puberty when studying the changes to the human body from birth to old age. This is taught as a combined PSHE and science unit, allowing children to meaningfully identify the links between these areas. When learning about drugs in Year 6, this is also combined with the science topic on animals, allowing children to see the negative effects that drugs have on the way that the body functions. We teach the children the importance of good mental as well as physical health within this unit, something we feel is very important for the pupils at West Leigh, who are sometimes under immense pressure due to the grammar system within the local area. By teaching this in science, along with presenting scientific evidence to support this, we feel that it compounds the message already being delivered within PSHE.

When working scientifically, children are now expected to consider what they will be measuring and how they will take measurements. We wish to have children working independently on their investigations in upper school, creating their own questions to investigate and taking greater control of the investigative process. Clear hypotheses should be formed by the children, and they will now be able to explain these in detail using prior scientific knowledge. We expect that children in upper school are able to analyse their results, identifying causal relationships. They should be able to explain the degree of trust that they have in their results and how this can be improved. Our most able pupils should be able to identify anomalies and suggest reasons for these. Children will be able to use their results to make predictions that can then be used to set up further comparative and fair tests.