Science Curriculum

INTENT

- **Our Vision**

At Stone CE School, it is our intent that our children will achieve their full potential and become independent, 'lifelong learners' who are prepared for the future. We aim to broaden the children's scientific view of the world around them and encourage them to be inquisitive about the world. We want to nurture children's curiosity and encourage them to ask questions which they can investigate the answers to. We aim to develop scientific thinkers who are able to plan and carry out fair tests when investigating scientific phenomena. At Stone School, we encourage children to take risks and help them to understand that they can learn through making mistakes. We want them to become lifelong scientific learners who are interested in the world around them.

- **The rationale**

The Twinkl scheme of work is used to teach science across the school to ensure a broad and progressive science curriculum is taught. The scheme ensures children learn the key skills and knowledge needed in each topic. Investigations and experiments are a key part of the scheme and encourage children to discuss and develop their scientific ideas.

- **Meeting the needs of identified groups i.e. SEN, EAL, disadvantaged children and the most able pupils**

Teachers use the progression of skills document to ensure that the science curriculum is taught progressively and builds upon prior knowledge. Lesson plans are adapted by teachers and provision for different groups of pupils is identified on the plan to show how they will be either supported or challenged in lessons. Teachers set tasks that can be completed in mixed ability pairs or groups to ensure that less able pupils or those needing additional support can be supported by their peers. A subject guide for staff has been produced by the subject leader which gives examples of what a child should be achieving to be considered greater depth in science. Teachers use this information to help set challenging tasks that would show children are working at greater depth.

- **Reading in this subject**

Children are introduced to new vocabulary when a new topic is taught as well recalling previous vocabulary from previous year groups. Vocabulary is displayed and referred to in lessons. Children are often given pieces of scientific text to read either individually, in pairs or in small groups which is then discussed to ensure understanding.

IMPLEMENTATION

- **Introducing new learning**

A comprehensive progression of skills document has been drawn up and introduced to show the progression in science from EYFS to Year 6. This clearly shows what knowledge and skills children need to have gained in previous years to ensure they are ready for the next step in their learning. Because these are passed up with children throughout their time at Stone School, teachers use this document to check for any gaps in previous learning and can address these before then moving the children on to ensure that children are developing their understanding and acquiring the skills they need.

- **Teaching approach**

At Stone School, science lessons are taught weekly using the Twinkl scheme of work. Planning is taken from the scheme and adapted as necessary by teachers for their classes. A WALT for the lesson as well as S2S are identified and shared with the children at appropriate points in the lesson.

A range of auditory, visual and kinaesthetic approaches are used in lessons to support children as they learn. Children are regularly provided with opportunities for hands on, practical investigations and experiments to enhance their learning, investigative skills and subject knowledge. Children are taught a wide range of scientific enquiry skills including posing questions, predicting outcomes, recording data, analysing results and concluding experiments. The majority of investigative tasks in science are carried out in pairs or small groups to enable children to develop their collaboration skills.

- **Schemes/resources**

Science at Stone School is taught using the Twinkl scheme of work to ensure we teach a broad and progressive curriculum. The scheme provides a range of resources to support the children's learning and understanding in lessons. There are a wide range of practical resources available in school to support the teaching of science including measuring jugs, test tubes, magnets, Newton meters, thermometers and many other topic related resources.

- **Educational visits and enrichment activities to develop cultural capital**

The majority of year groups at Stone School take part in one trip or WOW day that has science links. These include EYFS visiting the farm to learn about animals and farming, Year 1 having a visit from Zoolab to learn about the life cycle of animals, Year 2 learning about first aid in their 'Doctor for a Day' WOW day and Year 5 visiting the Science Museum in London (see trips planner for full range of science linked trips and WOW days). Children in Upper Key Stage 2 also have the opportunity to visit some of the local secondary schools for science taster days.

- **Ensuring good progress and attainment**

Children's individual science books are monitored by the subject leader to ensure progression and a broad curriculum is being covered. Class teachers assess children half termly and say whether they are WTS, ARE or GD in science. This data is then monitored by the subject leader and compared to progress in reading, writing and maths across the school. This is monitored by the subject leader across the year and reported to senior staff in school.

IMPACT

Following a unit of work, we expect children to know more and remember more. This is evidenced by progress in books as well as teacher assessment and formal testing. In science we use knowledge organisers to evidence progress.

The knowledge organisers are a single side of A4 paper which provides the core knowledge that should be learned and remembered from a unit of work. The knowledge organisers are also used as a 'quizzing tool' to help pupils boost their recall of knowledge and as an 'assessment tool', to help teachers check whether pupils have learned and remembered the key knowledge.

Through our science curriculum, we believe we will help children become inquisitive thinkers who question what they see and experience in the world around them. We hope to develop children who are confident to investigate their thoughts and ideas and are resilient if they make a mistake in their thinking. We aim to develop independent, lifelong learners who can complete tasks and solve problems on their own as well as understand when it would be beneficial to collaborate with others. We aim to help children develop their reading skills across the curriculum and use them to help them find out about the world around them.