



<p style="text-align: center;"><b>Intent</b></p> <p>At Dallimore, we aim to provide broad, rich, purposeful and well-sequenced science lessons. These will embed prior and new learning through finely focused teaching covering all science objectives from the National Curriculum.</p> <p>We do not use a specific science scheme; our lessons are carefully planned using the guidance of our knowledge organisers and progression documents provided by the science coordinator. Each knowledge organiser includes the sticky knowledge and vocabulary required to achieve the objectives for the unit, as well as indicating the expected existing knowledge from previous teaching.</p> <p>We intend to increase the science capital for all pupils; they are encouraged to learn new facts, have opportunities to generate questions, to research and to investigate. The combination of the knowledge and skills taught, will enable them to build their understanding of our technological world.</p> <p style="text-align: center;">Our teaching will help them to recognise the potential for science in their future lives.</p>	<p style="text-align: center;"><b>Pedagogical approaches</b></p> <p>Learning is defined as a change in the long-term memory. We ensure that children know and remember more in science by providing detailed knowledge organisers, weekly retrieval tasks, regular vocabulary checks, new information, varied tasks, monthly Flashback Friday quizzes and end of unit quizzes.</p> <p>Our Science Knowledge Organisers outline the previous learning and what the children should already know before commencing the new unit of science. This reminds children of their learning earlier in the year or in a previous year group, so they are ready to build on it and make associations. The document is used to introduce the new topic and is also used as a point of reference for information and definitions throughout. Apart from the first week, retrieval practice takes place at the start of every lesson to ensure children remember the content from the previous lesson(s). Tier 2 &amp; 3 vocabulary is then introduced where necessary, to ensure children can access the new learning for the current session.</p> <p>New information is provided in a variety of forms such as text, video clips, teacher explanations/modelling or demonstrations. This learning is then reinforced with a range of tasks: basic, advancing and deep (BAD - based on the Chris Quigley approach). Before the lesson ends, children complete a 'Make It Stick' activity which outlines the key knowledge and vocabulary children should have learned by the end of that specific lesson. At the end of the unit, a quiz takes place, checking, and further strengthening, the learning for the entire topic. Science retrieval practice is also part of Flashback Fridays which gives children an opportunity to cover all of what they have learned in the wider curriculum and ensure that learning sticks.</p> <p style="text-align: center;">Science at Dallimore is <b>ACTIVE: Active, Challenging, Team-building, Investigative, Vocal and Exciting.</b></p> <p>Through our science lessons we offer exciting, practical, hands-on experiences that promote curiosity, discussion and questioning, through the 5 types of enquiry, which can be shared with friends and family. Teachers provide clearly directed instructions and demonstrations for investigative work. Research tasks are meaningful and focused. Where appropriate, visits, workshops and visitors enrich their learning experiences.</p>
<p style="text-align: center;"><b>Sequencing of learning</b></p> <p>At Dallimore, we have some mixed age group classes. Our topics are organised into a two-year cycle so that all objectives can be covered. By carefully following the curriculum, we can ensure all objectives are taught as they are revisited and built-on in different year groups. (Progression documents highlight this.)</p> <p>Within the two-year cycle, topics are ordered in particular ways for several reasons for example, to build on work done earlier in the year and/or to fit in with the seasons/weather. For example, in KS1 'Animals including humans' is taught with the topics of 'Ourselves and Our School', and 'Our Wonderful World'. The Y2 'Animals including humans' is taught later in the year to build on their learning. 'Plant' units are taught in the spring and summer to allow more first-hand learning and practical tasks to take place.</p> <p>A science sequence of learning is split into 5-7 lessons depending on the number of NC objectives in the unit. The lessons are ordered so that the children's knowledge builds and is reinforced each week so that they develop well-connected webs of knowledge (schema). Knowledge organisers and component documents help teachers to plan well-sequenced lessons in manageable chunks.</p>	<p style="text-align: center;"><b>Teachers' Expert knowledge</b></p> <p>As subject leader, I regularly offer advice for planning, teaching and assessing in science during staff meetings. I share planning and useful websites with staff, as well as providing guidance on delivering a knowledge-based curriculum which combines with our principle of being ACTIVE. I currently plan all the UKS2 Science lessons and provide advice and supporting documents for LKS2 and KS1. (These documents are frequently reviewed and updated as appropriate.) We liaise regularly to ensure planning and teaching is consistent across the school but is suitable for each age-group. Staff seek advice through TEAMS messages or during PPA time.</p> <p style="text-align: center;">I try to keep informed of changes in science, possible CPD and opportunities for visits/visitors.</p> <p>My hope is that with my science background (Biology degree) and interest in the subject, that staff and pupils will feel confident and enthusiastic about the teaching and learning in science.</p>
<p style="text-align: center;"><b>Semantic and procedural knowledge</b></p> <p>Our Science Knowledge Organisers detail the key sticky knowledge and vocabulary to be taught in each unit of work. These are used alongside the progression documents to ensure all knowledge is taught. We encourage pupils to retain this knowledge by providing weekly retrieval practice, vocabulary checks, 'Make it Stick' slips every lesson, end of unit quizzes and Flashback Friday quizzes.</p> <p>Staff are regularly reminded in Science staff meetings about the 5 types of enquiry. These skills are embedded through teacher demonstrations, carefully planned teacher-directed instructions and purposeful/focused research opportunities. Pupils are also given the chance to generate their own investigations and test their theories. We also include outdoor learning, visits and workshops to help broaden their Science Capital.</p>	<p style="text-align: center;"><b>Assessment</b></p> <p>Formative assessment - we are constantly checking our pupils' learning by questioning, observing, discussing and marking (teacher/peer). Our short retrieval tasks and 'Make it Stick' slips every lesson show us that the children are remembering more.</p> <p>Summative assessment - 'Make it Stick' slips also form part of our summative assessment as well as our end of unit quizzes and Flashback Fridays. These assessments show us what the children have remembered at different stages from short term to long term.</p> <p>We record their learning on an assessment grid so that any learning not secured can be revisited. These records are passed up to the next teacher at the end of the year.</p> <p style="text-align: center;">iTrack is also used to record assessments at the end of each unit.</p>
<p style="text-align: center;"><b>Vocabulary</b></p> <p>Specific science vocabulary (tier 3) is taught at the start of each lesson where appropriate. This is often recapped in future lessons or tested in quizzes.</p> <p>For each unit of work, scientific vocabulary and definitions are stated on the Knowledge Organiser; pupils can use this to refer to at any stage.</p> <p>Teachers can use the knowledge organisers and progression documents to check relevant vocabulary is taught and revisited.</p>	<p style="text-align: center;"><b>Impact</b></p> <p>The children at Dallimore will have embedded strong scientific knowledge, developed enquiry skills and increased their science capital. The children will be able to confidently articulate their knowledge using acquired vocabulary and show enthusiasm for everyday science. Our pupils will be curious and keen to question assumptions.</p> <p>The children at Dallimore will be able to identify opportunities in further education and careers that science provides.</p> <p style="text-align: center;">There are various ways I can measure the impact of science at Dallimore:</p> <ul style="list-style-type: none"> <li>• <b>Pupil voice</b> - talk to children in different year groups about their learning and how they feel about the subject. Find out what they have learned from a topic and/or an educational visit. Find out how science links to what they do in everyday life. What would they like to do when they grow up?</li> <li>• <b>Work scrutiny</b> - look at the quality and content of work produced by children across the school.</li> <li>• <b>Learning walks</b> - observe science lessons throughout the school. Observe teaching, learning and attitudes.</li> <li>• <b>Assessment grid and iTrack</b> - check assessment records. Liaise with staff.</li> </ul>