



What you can expect from science teaching at Aldborough

Key Stage 2:

- Science will be taught for one afternoon per week and is considered a core subject.
- The science curriculum at Aldborough is based on the National Curriculum alongside the PLAN materials, but has been designed specifically for Aldborough taking into account our pupils, location, and unique class structure.
- There are twelve science units, each taking one half term and each repeated twice. These units will also be recapped and recalled at other points on the pupil's science pathway to assist in long term memory retention, as well as wherever relevant to make links with other learning. On the first learning of a unit, a pupil would not be expected to retain all of the new knowledge and skills, but to build on their learning from Key stage 1 and EYFS to form a strong foundation of knowledge in this area which can then be recalled, built upon and extended on their second visit.
- As some of the science skills require maths knowledge, the teaching and expectations in science will be linked to the relevant level of maths learning for the year group taught. For example, measuring in centimetres or millimetres; taking one reading or calculating an average; simple pictogram or pie chart. Time will be taken to specifically teach the maths skills required within the science lesson, including modelling and scaffolding. Computer programmes / websites will also be used to help pupils to practise these skills.
- Taking the concept of learning as 'knowing more, remembering more and doing more', Science teaching will be based on the principles of cognitive science, including spaced learning, interleaving, retrieval practice, managing cognitive load, working with schemas, multimedia learning (including dual-coding) and embodied learning.
- Science teaching at Aldborough uses subject-specific methods from and recommended by the Primary Science Teaching Trust.
- Vocabulary learning will form part of each lesson.
- Misconceptions are common in science and, as well as questioning to elicit and correct, teaching will explicitly address known and common misconceptions.
- All methods used are evidence-based and peer-reviewed.

- High quality teaching methods will be used to assist *all* pupils to learn. As well as those listed above under cognitive science, teaching will involve:
 - Instructions given verbally in small chunks and reinforced in writing. Where an instruction is specific to a child, their name will be used at the beginning to ensure they are attending.
 - Each lesson will be broken into smaller and predictable sessions.
 - Assessment will be based on knowledge and skills in science alone, and involve many different methods. In all cases, assessment will be used to guide teaching and learning, rather than as an end in itself. (Assessment based on the TAPS pyramid.)
 - Classroom visuals will be clear and used to support each unit's learning.
 - Teaching will be based on the "I do, we do, you do" approach, modelled and scaffolded as appropriate for each learner.
 - Dual-coding (alongside teaching vocabulary) will be used throughout. This will assist all learners, but will be particularly beneficial for pupils with literacy difficulties or who have English as an Additional Language.
 - Movement breaks will be built into each lesson including catch-1-partner, 3-for-tea, embodied learning, drama in science and practical work for science enquiries. However, practical activities will not be carried out as an end in themselves, but only where they enhance the learning in the particular unit being studied.
 - Sufficient time will be given for thinking and processing. All pupils will be expected to be 'actively thinking' throughout the lesson and methods such as think-pair-share will be used so pupils can be supported by their peers and learn in collaboration.
 - Equipment used will be of sufficient quality and tested prior to each lesson to ensure that it is fit for purpose and will enhance learning. Additional / alternative equipment will be provided if appropriate for a pupil's needs.
 - Positive reinforcement, such as praise, stickers and dojo points, will be used throughout to encourage behaviour for learning and learning in line with Aldborough's behaviour policy.

- Pupil's will be encouraged to ask 'science questions' throughout each unit's learning and researching these questions will be used as an extension activity where time allows, particularly for those who are seeking an extra challenge.
- In addition to the science units taught, Aldborough takes part in British Science Week each year. This involves a full week of science-based learning for the whole school with the specific purpose of increasing the science capital of our pupils.
- Children may also engage in curriculum-led science trips, live lessons, have visitors, or take part in special projects, where this would aid their learning.
- We will shortly be appointing Science Ambassadors and including 'science bags' as part of the play equipment available at play times to encourage science learning, curiosity and exploration through play.
- As a school, we also actively seek out opportunities to increase the science capital of our students through links to other organisations, schools and events.
- We will have a book box for each unit that will be in the classroom and available for every science lesson.