Science Policy

Inspire – Impact - Independence

OAKWOOD ACADEMY MISSION STATEMENT

"Promoting learning excellence – Inclusion beyond the barriers".

Moral Purpose

"We are united in the belief that together we can inspire all learners to dream, persevere and achieve so that we can change lives for the better, now and for future generations to come"

Policy developed by:	A Ellis
Policy to be reviewed:	Summer 2024
Summary of changes	· New policy

Science Policy Development (How)

This policy has been developed through:

- A SWOT analysis completed on July 2019 during a department planning session.
- Review of science and introduction of a new curriculum coverage document.
- Action plan for academic year 2020-2021.

Science Policy – Rationale

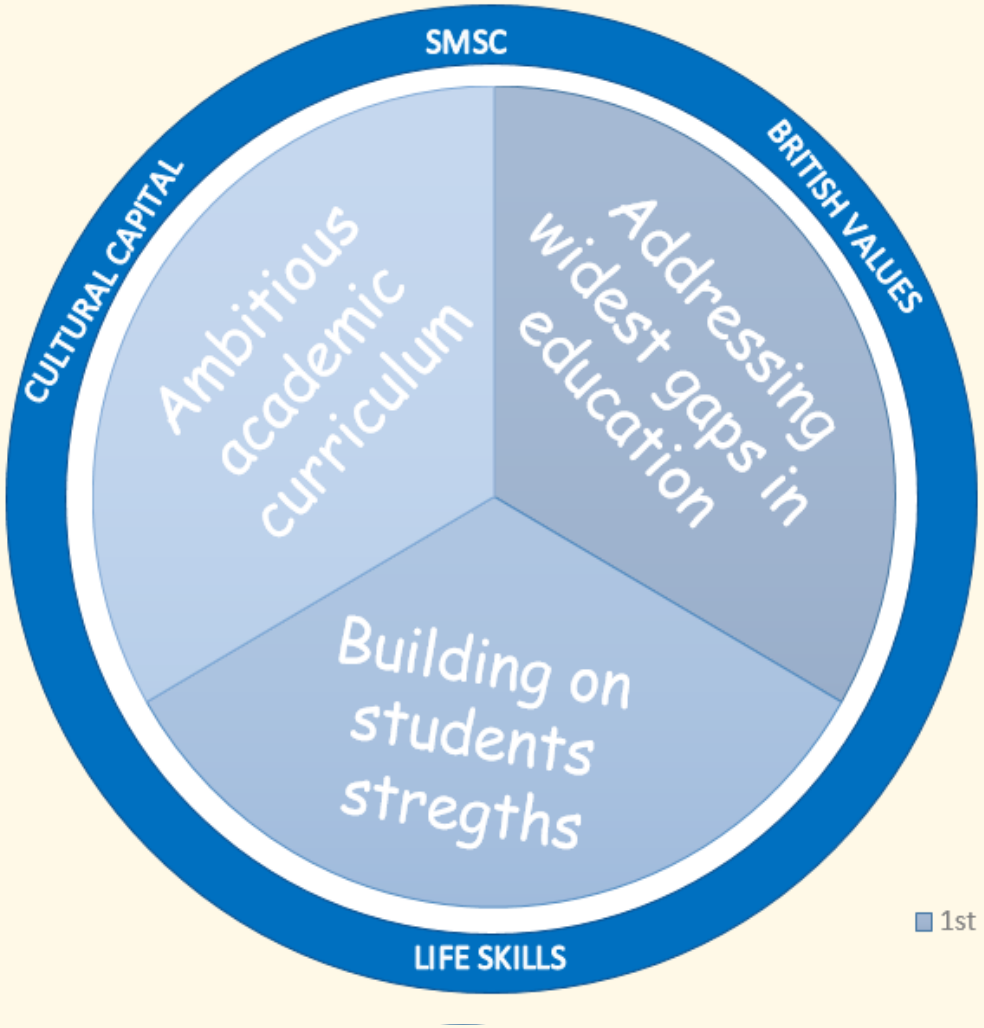
- The rationale of this Science policy is to:
  - introduce the key aims and objectives of the Science department.
  - to explain the curriculum design and coverage.
  - to explain the effective Teaching and Learning strategies involved in Science

Science Policy - Vision (Why)

Oakwood's Science Policy Vision (Why)

- To develop pupils' curiosity and excitement about the world around them
- To develop pupil's ability to work scientifically.
- To provide opportunities to understand how science has developed by studying real life scientists (cultural capital).

Main aims of the Oakwood curriculum



Provide an **ambitious academic curriculum** so that students can access a wide range of qualifications that can support and impact on their further education and their employability.

To address pupils widest gaps in education by developing basic skills in **literacy and numeracy** across the curriculum in order to prepare our students for the opportunities, responsibilities and experiences of later life.

To ensure that we have a **broad and balanced offer** for our students to build upon students strengths and interests to inspire them to hold high aspirations for their future

To develop our students **cultural capital**, for us this is providing students with the opportunities to experience people, places and things that contribute towards the essential knowledge that pupils need in order to be educated citizens. To promote pupils physical health and personal development which includes the spiritual, moral, cultural, mental development of pupils at the school in order to **prepare our students for the opportunities, responsibilities and experiences of later life**

The guiding principles of our curriculum through science

Inclusion focus

- Our enquiries are designed to gradually build up pupil knowledge so that eventually pupils can work towards planning and leading their own scientific research.
- Our tasks are short and varied. Where possible, activities will either be modelled We want to pay meaningful attention to the diversity of scientists both past and present
- Students can see themselves represented in those we have chosen to study.
- We follow the principles from our T & L policy to create inclusive classrooms and to deploy inclusive pedagogical approaches.
- More information on slide 25

Appropriate content

- Decisions about what to include in the science curriculum take into account a number of different curricular aims alongside the cognition and learning barriers our pupils present with.
- The curriculum content has been chosen specifically for it's appropriateness for our students, this is driven by rigorous assessments of student starting points.

Locality

- Where we can, we have identified areas locally that can link to the subject content being delivered.

Evidence informed curriculum design

- Our curriculum is evidence informed through rigorous application of the best practice and the science of learning. The pedagogical principles applied are grounded in research.

Making connections across subjects

- Schema theory is supported by making explicit links between subject areas. This supports opportunities for pupils to embed key vocabulary and learning.
- Our whole school curriculum has been designed with collaboration between all subject leads at is core. We want students learning to be joined up and connected where strong links are possible. For us, this will allow our students, many of who have difficulties with cognition and learning, the best opportunity to experience content across different specialisms. This repetition and opportunities for retrieval practice will allow for deeper learning.
- We have been provided with the opportunity to familiarize our self with the content from different subjects and the plan and build upon any links established.

Knowledge (Components and Concepts)

- Prototype theory is utilized by identifying key concepts across science. These key concepts are then replicated across a range of contexts to embed key learning.

Curriculum intent

- The intent for the science curriculum is laid out in the Curriculum framework and progression mapping documents. These are the things that we intend our students will study over their time at Oakwood. The progression mapping documents detail the steps of progress that we want our children to achieve.
- As a SEND school the starting points for our students is varied even within classes. As such we cannot define simply, the educational outcomes of all our students by cohort. This has to be very individualized based on their starting points.

Breadth and Depth of the Curriculum

Biology

- Cells and organisation
- The skeletal and muscular systems
- Nutrition and digestion
- Gas exchange systems
- Reproduction
- Photosynthesis
- Cellular respiration
- Relationships in an ecosystem
- Genetics and evolution
- Inheritance, chromosomes, DNA and genes

Chemistry

- Atoms, elements and compounds
- Pure and impure substances
- Chemical reactions
- Energetics
- The periodic table
- Materials
- Earth and atmosphere

Physics

- Calculation of domestic fuel costs
- Energy changes and transfers
- Describing motion
- Pressure in fluids
- Balanced forces/Forces and motion
- Sound waves/Light waves
- Current electricity/Static electricity/Magnetism/Electromagnetism
- Physical changes of matter/Energy in matter/Particle model
- Space physics

Working scientifically

- Scientific attitudes
- Experimental skills and investigations
- Analysis and evaluation
- Measurement

The concepts identified in Science

Causation and Relationships	Understanding cause-and-effect relationships is central to science. This concept explores how changes in one variable can lead to changes in another and how various factors interact to influence outcomes.
Systems and Interactions	Science often involves studying systems, which are composed of interconnected parts that influence each other. This concept emphasizes understanding how different components within a system interact and how changes in one part can impact the entire system.
Scale and Proportion	Concepts of scale and proportion help students relate the macroscopic and microscopic aspects of the natural world. This includes understanding phenomena at different levels, from atomic and molecular scales to larger ecosystems or even cosmic scales.
Change and Stability	Science investigates how things change over time, as well as what factors contribute to stability and equilibrium. This concept helps students recognize patterns of change, the forces that cause them, and the conditions that maintain stability.
Energy and Transformation	The concept of energy is fundamental to all scientific disciplines. Students explore how energy can be transferred, transformed, or conserved in various processes, from chemical reactions to ecological cycles.

The concepts identified in Science

Patterns and Classification	Recognizing patterns and classifying objects, organisms, or phenomena based on shared characteristics are key skills in science. This concept helps students organize information and make predictions based on similarities and differences.
Fair testing	Understanding fair testing is crucial for developing critical thinking, distinguishing between variables, and ensuring valid results in their scientific inquiries.
Evidence and Explanation	Science relies on evidence-based explanations for natural phenomena. This concept emphasizes critical thinking, hypothesis testing, and the use of empirical data to support conclusions and make informed judgments.

The Bigger Picture – Food and Nutrition

Fair testing

Systems and Interaction

Think of our body like a team where each player has a specific job. In this unit, we're focusing on the digestive team - how different organs work together to process the food we eat. It's all about understanding how these systems interact to keep our bodies running smoothly.

Causation and relationships

In our unit, we're exploring how things in the body are connected. It's like a chain reaction - when we eat different types of food, it causes specific reactions in our bodies. Understanding these cause-and-effect relationships helps us see how our diet affects our health.

Evidence and explanation

In science, we always need proof. In this unit, we're collecting evidence to explain how our food choices impact our bodies. We will be gathering clues to understand the science behind our meals.

Scale and proportion

While we're mostly talking about tiny stuff happening inside us, we're also exploring how much of different nutrients we need. It's like figuring out the right balance of nutrients in our meals. This concept helps us understand the proportions of different things in our diet..

Patterns and classification

We're spotting patterns in the foods we eat. Some foods have similar benefits, and we're organizing them into groups based on their functions.

Energy and transformation

We're exploring how the food we eat transforms into the energy we need to run, play, and do all the things we enjoy. It's like understanding the power source that keeps us going!

Change and stability

We're looking at how things change when we eat and how our bodies stay stable. Imagine a seesaw – our diet and lifestyle can tip it one way or another. We're working out how to keep that seesaw steady for a healthy, stable life..

Curriculum Organization

- **National Curriculum** - See Science curriculum overview National Curriculum coverage. Oakwood Academy follows the National Curriculum as set out by the government from Key Stages 2 to 4, whilst considering a stage over age approach. The curriculum has been carefully structured to build in opportunities for consolidation and repetition of key learning.
- **Lessons per week** - Students have three or four science lessons timetabled per week in KS2 and 3. There are three or four lessons per week in KS4. In Willows, Foundation, Year 8 & 9 Maple and Pine, lessons are delivered by the class teacher. Year 8 & 9 Sycamore and Fir and all KS4 classes are taught by specialist science teachers.
- **Coverage** – All strands of the National Curriculum are covered at a level appropriate the individual pupil.

Curriculum Map

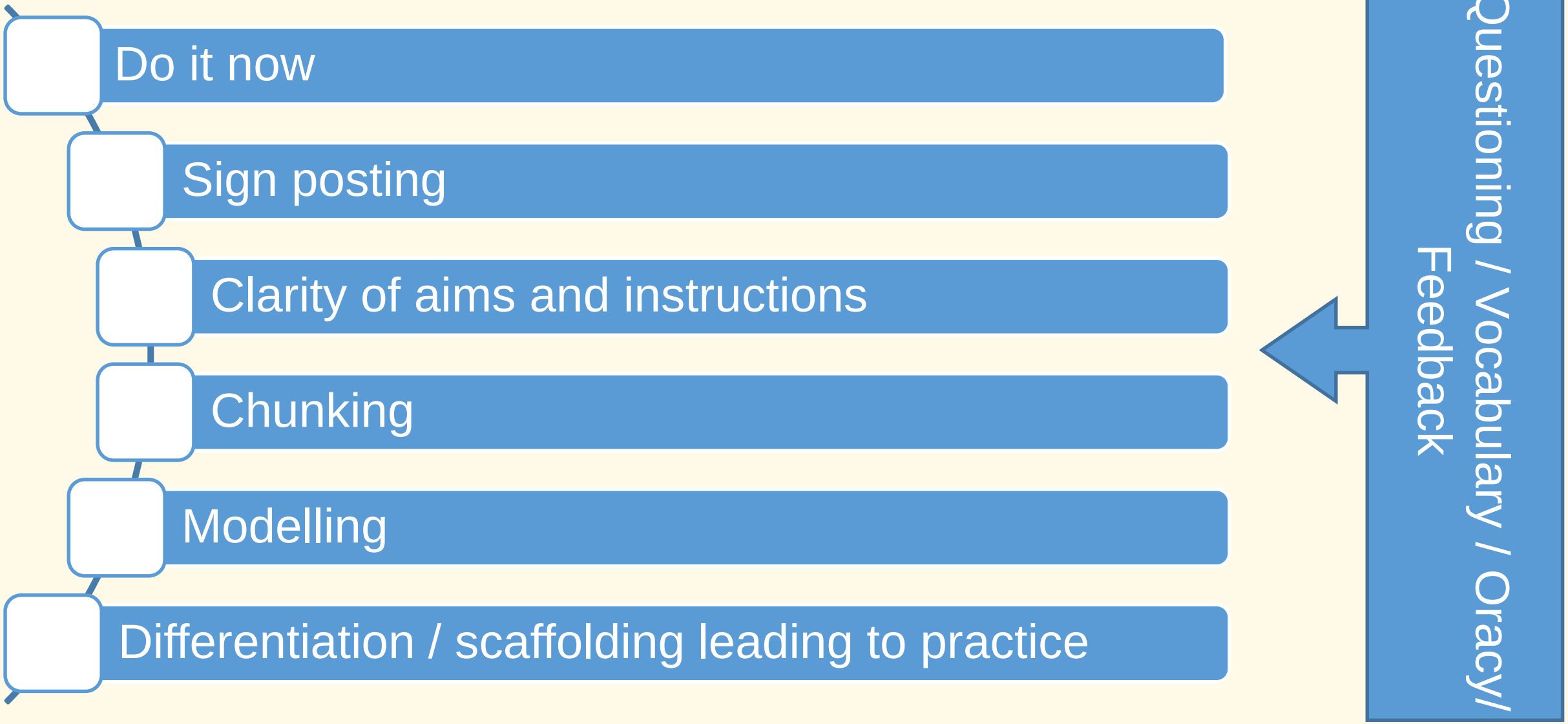
- The curriculum map provides staff with a brief unit theme / title.
- The curriculum map is broken down by Year groups, with further differentiation by pathway. There are different pathways for the students based on their starting points in science. The provision of pathways tailored to the specific needs of cohorts within our school allows us build on their prior knowledge and eliminate the chance of gaps in learning.
- Teachers are also provided with a scheme of work detailing the activity types and how to link to the main theme of the unit by the HoD.
- Possible pupils misconceptions are highlighted
- Links to SMSC, British Values and our Science key concepts are explicit on the scheme of work.
- Procedural and knowledge outcomes are listed for each unit at the appropriate student level
- The wide ranging needs of students in each of our classes mean that the main activities needs to be delivered at a level suitable to those in a class. Teachers use their knowledge and assessment of students alongside the progression documents to deliver the content at an appropriate level.
- A teacher guide is available for non-specialist teachers.

Our approach to teaching Science

Foundations

Classroom environment		Setting up a classroom that is welcoming, safe and nurturing. Welcoming students and allowing them entry in a calm and orderly fashion. Having a tidy, well organised space free of unnecessary distractions. Consistent routines that establish an effective classroom environment
Knowing students and developing relationships		Developing relationships with students cannot be under estimated. Get to know them well, their needs, strengths and weaknesses and personal circumstances. Familiarise yourself with the EHCP of students in your class to increase pupils motivation.
High expectations		'The higher the expectations of teachers, the better students perform' – (Rosenthal & Jacobson). Know students starting points and gaps in knowledge very well. Have the belief that all students can succeed and communicate this belief to the students.

Lesson structure



What makes good science education?

1. Talk the (science) talk - vocabulary is important!
2. Learning through doing – practical examples
3. Quality targeted questioning
4. Ensure key concepts are covered and revisited

Talk the (science talk)

Encouraging children to "talk the science" involves fostering a culture of communication, inquiry, and active engagement in scientific discussions. Here are some strategies to promote scientific dialogue:

- Classroom Discussions: Provide regular opportunities for whole-class or small-group discussions where children can share their ideas, observations, and questions about scientific concepts and phenomena. Encourage them to explain their reasoning and listen actively to their peers.
- Questioning Techniques: Use open-ended questions to elicit students' thoughts and encourage deeper thinking. Encourage them to provide evidence and reasoning to support their answers, fostering critical thinking and scientific discourse.
- Science Talk Partners: Assign science talk partners or groups for collaborative discussions. Encourage students to share and explain their ideas, listen actively to others, and ask probing questions to deepen their understanding.

Concept Cartoons – Oracy in Science

Concept cartoons are a valuable tool in science education, as they engage students in critical thinking, promote discussion, and help develop a deeper understanding of scientific concepts. By presenting a scenario or problem through a visual representation and a dialogue between characters, concept cartoons stimulate curiosity and encourage students to actively participate in the learning process.

Five apples = Five portions = Five a day! Simple!

But isn't there a variety thing? Different fruits give different nutrients?

"I think it's more about colours. Like, having a mix of colours is best.

Too much sugar! Apples are sweet. It can't be healthy to eat that many.

In Oakwood science classrooms, concepts cartoons are used to:

- Introducing New Concepts: Concept cartoons can serve as an effective hook to introduce new scientific ideas or concepts. Students can analyse the cartoon, make observations, and generate questions, setting the stage for further exploration and inquiry.
- Stimulating Discussion: Concept cartoons are designed to provoke discussion among students. They can be used as a springboard for conversations, debates, or group work, allowing students to share their ideas, challenge assumptions, and build upon their peers' thinking. This ties in to the Oakwood approach of developing oracy across all areas of the curriculum.
- Addressing Misconceptions: Concept cartoons are particularly useful in addressing common misconceptions in science. They can present alternative viewpoints or conflicting ideas, prompting students to evaluate their own understanding and identify misconceptions they may hold.
- Assessing Understanding: Concept cartoons can be used as formative assessment tools. Students can analyze the cartoon, explain their reasoning, and justify their answers, providing insights into their understanding of the scientific concept being explored.
- Reinforcing Learning: Concept cartoons can be revisited throughout a unit or lesson sequence to reinforce key ideas and promote concept consolidation. By engaging with the cartoons repeatedly, students can refine their understanding and develop a more comprehensive grasp of the scientific concepts involved. Concept cartoons will regularly be used during the memory review section of our Science lessons to reflect on prior learning.
- When using concept cartoons, it is important to provide a supportive and inclusive environment where students feel comfortable expressing their thoughts and ideas. Encourage open-ended discussions, active participation, and respect for diverse perspectives.

Learning through doing

At Oakwood we wholeheartedly embrace the importance of practical science for our learners with Special Educational Needs and Disabilities (SEND).

Enhanced Learning Experience:

It is important for us to recognize that practical science offers an enhanced learning experience for our SEND learners. These hands-on experiments provide a concrete and multisensory approach to understanding complex scientific concepts. We firmly believe that this tactile engagement is essential for their comprehension and knowledge retention.

Concrete Understanding:

Incorporating practical science into our curriculum allows our SEND learners to move beyond abstract theories and engage with tangible materials. This approach fosters a concrete understanding of scientific principles, making learning more accessible and meaningful for every student.

Promoting Independence:

We prioritize practical science because it empowers our SEND learners to take charge of their own learning. Through hands-on experiments, they gain confidence in conducting investigations and making observations, fostering independence and self-reliance.

Fostering Curiosity and Engagement:

Practical science sparks curiosity and enthusiasm in our learners. It ignites a passion for exploration and discovery, motivating our SEND students to actively participate in their science education.

Quality Questioning in Science

We recognize that quality questioning is a fundamental aspect of science education. It is an essential tool for promoting critical thinking, inquiry-based learning, and a deeper understanding of scientific concepts. Our commitment to quality questioning in science is evident in the following question stems, carefully crafted to increase in complexity as students progress:

Level 2 (Moderate):

What is the name of...?

Can you list...?

Describe...?

Identify...?

Level 3 (Complex):

How does... work?

What happens when...?

Compare... and...?

Explain...?

Level 4 (Advanced):

Why do you think...?

What are the implications of...?

How might... change if...?

Predict what would happen if...?

These question stems serve as a guide for our educators, empowering them to ask thought-provoking questions that challenge students at various levels of cognitive engagement. We believe that by nurturing a culture of quality questioning, we enable our students to become critical thinkers, problem solvers, and lifelong learners in the field of science.

Ensure key concepts are covered and revisited

Why It Matters to Us:

Comprehensive coverage and ongoing review of key scientific concepts are paramount for several compelling reasons:

Sustained Mastery: We believe that mastery of scientific knowledge requires continual reinforcement. By revisiting essential concepts, students have the opportunity to deepen their understanding and maintain proficiency.

Retention and Application: Science education should extend beyond rote memorization. Frequent review not only enhances retention but also empowers students to apply their knowledge confidently in novel contexts.

Connecting the Dots: Science is an interconnected web of concepts. Regular review helps students make connections between different scientific ideas, fostering a holistic understanding of the subject.

How We Do It at Oakwood:

Review Weeks: Periodic "Review Weeks" are built into our curriculum schedule. During these dedicated weeks, students revisit previously learned material, reinforcing their understanding and addressing any lingering questions.

Memory Review: At the start of each lesson, we engage in memory review sessions. These quick but essential exercises help activate prior knowledge, making connections with new content and promoting retention.

Curriculum Sequencing: Our curriculum is thoughtfully sequenced to introduce concepts progressively. Key ideas are revisited at appropriate intervals, allowing for deeper exploration as students progress through grade levels.

Cross-Curricular Integration: We encourage students to apply scientific concepts across various subjects, reinforcing learning and showcasing the real-world relevance of science.

Accessibility and inclusivity

We are committed to ensuring that all students have equal access to high-quality science education, regardless of their disabilities or special education needs. We recognize the importance of creating an inclusive environment where every student can actively participate, engage, and succeed in science. This section of our science policy outlines our approach to inclusivity and the provision of adapted science equipment to support students with disabilities or special education needs.

1. **Inclusive Teaching Strategies:**

    a. Teachers will use inclusive teaching strategies to meet the diverse learning needs of students. This may include differentiated instruction, multisensory approaches, and the use of various teaching materials and resources.

    b. Modifications to instructional methods, assessments, and assignments will be made to accommodate individual students, ensuring that they can actively engage and demonstrate their understanding of scientific concepts.

2. **Adapted Science Equipment:**

    a. Oakwood is equipped with a range of adapted science equipment to facilitate the participation and learning of students with disabilities or special education needs.

    b. Assistive technologies, such as screen readers, and alternative input devices, will be provided to students with fine and gross motor difficulties

    c. For students with mobility impairments, accessible lab stations and adjustable-height tables are available to ensure they can comfortably participate in hands-on experiments.

    d. Tactile models, enlarged diagrams, and other sensory aids will be used to enhance the learning experience for students with visual impairments.

    e. Additional supports, such as magnifiers, colored overlays, or specialized seating, will be provided based on individual student needs.

f. We have a range of adapted subject specific equipment including:

Plastic jugs and beakers

Dropping pipettes (droppers) for measuring and transferring small quantities of liquids

Digital voltmeters and ammeters

Digital thermometers

Digital pulse oximeters

Measuring scoops for measuring small quantities of powders

4.Collaboration and Support:

a. Professional development opportunities will be provided to teachers to enhance their knowledge and skills in inclusive science education.

5.Accessibility of Science Facilities:

a. Science classrooms and laboratories will be designed and organized to provide easy accessibility for students with disabilities or special education needs.

b. Clear pathways, wheelchair ramps, and appropriate signage will be in place to ensure students can navigate the science facilities independently.

c. Consideration will be given to the placement of equipment, ensuring that it is accessible and adjustable to accommodate students with varying physical abilities.

6. **Using CLEAPPS**

a. Risk Assessments: CLEAPPS offers guidance on conducting risk assessments for science experiments and practical activities. They provide us with templates and advice to help assess potential hazards, identify control measures, and ensure that appropriate safety precautions are in place.

b. Hazardous Substances: CLEAPPS provides us with guidance on the safe handling, storage, and disposal of hazardous substances commonly used in science experiments.

c. CLEAPPS hazard cards are stored in the prep room to allow easy access to anyone teaching or supporting science.

Assessment

Assessment Type	Details	Frequency
Initial benchmarking exercise	A test drawing on questions from across the KS2 curriculum to gain a benchmark for Willows/Foundation classes.	On entry, repeated at the end of the year
End of unit tests	Tests based specifically on the work covered during a topic. These are not completed at the immediate finish of the topic so that we can test that long term remembering has been achieved.	Every 2/3 weeks
Pupil assessment	Self assessment sheets for pupils to assess their progress against unit objectives	Ongoing
Teacher assessment sheets	Sheets for teachers to assess pupils progress against the intended outcomes for a unit.	Ongoing
Low Stake assessments	Ongoing teacher assessment used to direct planning on the outcomes of low stakes testing.	Ongoing
KS4 Entry level tests at the end of each topic. ASDAN tasks.	OCR Entry level tests are taken at the end of each topic (up to 36 over 2 years)	Every 2/3 weeks
Data capture	Formal data captured across all strands of the curriculum using formative and summative methods.	Once per half term (+ baselining new students)

Qualification Pathways		
Class	Typical Oakwood Entry Point	Qualifications
Sycamore	Oakwood 2+	IGCSE (Single award combined science) Entry Level 2/3
Fir	Oakwood 1 / Oakwood 2	Entry Level 2/3
Pine	Working towards / Oakwood 1	Entry Level 1/2/3
Maple	Working towards	Entry Level Interim Bronze Award ASDAN science short course

The table above indicates the intended outcomes for each Oakwood class. This is based upon pupils' entry points to Oakwood. Discretion is applied, students capable of achieving higher level qualifications will always be pushed to do so.

Cross Curricular links

Design

- Our whole school curriculum has been designed with collaboration between all subject leads at is core. We want students learning to be joined up and connected where strong links are possible. For us, this will allow our students, many of who have difficulties with retrieval, the best opportunity to experience content across different specialisms. This repetition and opportunities for retrieval practice will allow for deeper learning.
- We have been provided with the opportunity to familiarize our self with the content from different subjects and the plan and build upon any links established.

Subject enhancements

At Oakwood, we believe in providing a wide reaching science education that goes beyond the classroom. We recognize the value of subject enhancements, such as trips, in-school visits, projects, theme days, and the inclusion of famous scientists throughout the curriculum. These enhancements aim to deepen students' understanding of scientific concepts, foster a love for the subject, and highlight the importance of science in the world around us. By incorporating these activities, we create a holistic learning experience and promote cultural capital among our students.

Trips: Trips offer students the opportunity to witness scientific concepts in real-life situations and develop practical skills. The following table highlights the proposed trips and activities by year group and their focus:

Year	Trip	Focus
Year 8	Science & Industry Museum – Digestion Show (temporary)	Reinforce work on digestion and digestive system
Year 10	Jodrell Bank	Space, planets, research

In-School Visits: In-school visits bring experts and external organizations to our students, providing hands-on experiences and developing practical skills whilst encouraging excitement about the world them. The following table showcases the in-school visits and their focus:

Year	Visits	Focus
Willows & Year 7	Science Boffin	Fostering interest in science and developing practical skills.
Year 7	Mobile Rock Pool	Variation and classification
Year 8	Wonderdome Mobile Planetarium	Earth and the planets in the Solar System
Year 9	STEM workshop	Science Problem Solving

Subject enhancements

Subject immersion days, where pupils spend 3 lessons in the lab working on a certain topic will allow pupils to develop a greater depth of understanding whilst also learning vital laboratory skills. The following table shows the days planned for the year:

Year	Immersion Day	Focus
Year 7	Mixtures and Separation	Mixtures and Separation
Year 7	The Particle Model	

Inclusion and Cultural Capital: We value inclusivity and aim to provide a diverse and representative curriculum. To celebrate inclusivity, we have incorporated the study of famous scientists throughout the curriculum. The following scientists are some of those researched during lessons:

Year	Scientist
Year 7	Temple Grandin
Year 8	Isaac Newton
Year 9	James Joule
Year10	John Fleming
Year 11	Stephen Hawking

Subject enhancements

Cultural Capital

	Willows 1	Willows 2	Year 7	Year 8	Year 9
Sustainability Focus	Plastic Wildlife	Energy Food waste	Deforestation Bio-diversity	Energy Global warming	Plastic pollution Renewable energy
Votes for Schools Focus	Opening a new oil field	Do we care about rivers being clean?	Will science solve the world's problems?	Animal Welfare	Should we be worried about vaping?

We hold a steadfast commitment to developing our pupils' environmental understanding as a long-term aim. This commitment is reflected in our curriculum, where topics related to environmental issues and sustainability are covered every year, with each year building upon the previous one. This intentional and approach not only fosters environmental literacy but also significantly contributes to developing our pupils' cultural capital.

Why It Matters:

Developing pupils' environmental understanding is a journey that unfolds over time, offering several key benefits for enhancing cultural capital:

Cultural Sensitivity: Learning about environmental issues exposes our pupils to diverse cultural perspectives and practices related to sustainability. They gain an appreciation for how different cultures value and interact with the environment, fostering cultural sensitivity and respect.

Global Awareness: Our curriculum's consistent focus on environmental topics nurtures global awareness. Pupils become attuned to the interconnectedness of environmental challenges across the world, broadening their horizons and enhancing their cultural capital.

Social Responsibility: As pupils deepen their understanding of environmental issues, they develop a sense of social responsibility. They recognize the importance of sustainable practices and ethical decision-making, reflecting values and norms that contribute to cultural capital.

Informed Citizenship: An environmentally informed citizenry is integral to a thriving society. By engaging with environmental topics consistently throughout their education, our pupils are better prepared to participate in informed civic discussions and advocate for positive change.

British Values & SMSC

Design

- **Extremism and radicalization** - All teachers in the science department are familiar with the indicators of vulnerability to extremism and radicalisation and the procedures for dealing with concerns. When delivering lessons in science we look out for indicators and report any concerns. We work to prevent pupils from developing extreme and radical views by embedding SMSC principles throughout the science curriculum.
- **Promoting values** - During lessons in science we strive to create a learning environment which promotes respect, diversity and self-awareness and equips all of our pupils with the knowledge, skills, attitudes and values they will need to succeed in their future lives.
- **Planning for British Values** – we have looked at all areas of our science curriculum and have identified the coverage of the British values through the topics that we have selected.

- British Value and SMSC coverage is considered throughout the planning stages of the curriculum and plotted in our coverage grids. Examples of this can be seen on the next slide.

British Values and SMSC

British Values and SMSC and identified and planned for through the Scheme of work. Here is an example for a topic on food and nutrition .

Strand	Unit: Food and Nutrition
Social	Collaborative activities, such as analyzing food labels and conducting nutrient detection tests in groups, encourage teamwork and effective communication.
Moral	Moral development is addressed through discussions about the importance of making healthy food choices and understanding the consequences of malnutrition. Students engage in conversations about responsibility, both personal and societal, concerning the impact of dietary decisions on individual health and broader public health.
Spiritual	Spiritual development is fostered through an exploration of the intricate processes that sustain life and the marvels of the human body. Students may develop a sense of awe and wonder as they delve into the complexities of digestion, appreciating the intricacies of how the body processes nutrients to sustain life. Additionally, discussions on the interconnectedness of dietary choices with overall well-being may encourage reflection on the importance of maintaining a harmonious relationship between physical health and spiritual well-being.
Cultural	
British Values	This unit aligns with British values by emphasizing democratic principles through discussions on food regulations, ensuring individuals have access to transparent information about their diet. The rule of law is evident in the exploration of established guidelines for food labelling, promoting an understanding that adherence to rules contributes to public health. Individual liberty is central to the unit as students contemplate their dietary choices, recognizing the balance between personal freedom and responsibility for one's health.

British Values and SMSC

To support teachers to be sure that the planned outcomes are achieved, many of the concept cartoons, used to promote scientific discussion and detabe focus on the social, moral and ethical issues identified.

Safety

Safety Protocols in the Classroom

At Oakwood Academy, the safety and well-being of our students and staff are of utmost importance. As part of our commitment to providing a safe learning environment, we have established comprehensive safety protocols to be followed in our science classrooms. These protocols are designed to minimize risks, prevent accidents, and ensure the smooth and secure execution of science experiments and activities. All students, teachers, and support staff are expected to adhere to these protocols at all times.

1. **Safety Equipment and Resources**:
    a. Each science classroom is equipped with appropriate safety equipment, including fire extinguishers, first aid kits, safety goggles, lab coats/aprons, and gloves.
    b. Emergency contact numbers and procedures are prominently displayed in the classroom, ensuring quick access to necessary information in case of an emergency.
2. **Teacher Responsibilities:**
    a. Teachers are responsible for conducting thorough risk assessments before engaging students in any science experiment or activity. They must ensure that all potential hazards are identified and appropriate safety measures are in place.
    b. Teachers are expected to provide clear and detailed instructions to students regarding safety precautions and procedures for each experiment or activity.
    c. Teachers will demonstrate the proper usage of safety equipment and teach students how to handle hazardous materials safely.
    d. Regular inspections of science classrooms and equipment will be conducted by teachers to identify any potential safety concerns and address them promptly.

3. Student Responsibilities:

a. Students must actively participate in safety training sessions and familiarize themselves with the safety protocols established for the science classroom.

b. Students are expected to follow instructions provided by the teacher regarding the use of safety equipment and the handling of hazardous materials.

c. Students must wear appropriate personal protective equipment (PPE) such as safety goggles, lab coats/aprons, and gloves whenever required during experiments or activities.

d. In case of an accident or emergency, students should immediately notify the teacher or any available staff member and follow the prescribed emergency procedures.

4. Safety Procedures:

a. All science experiments and activities must be supervised by a qualified teacher or an authorized staff member.

b. The proper storage and handling of chemicals and hazardous materials must strictly adhere to established safety guidelines and protocols.

c. In the event of a fire, students and staff must evacuate the classroom immediately and assemble at the designated meeting point.

d. Students should never taste or smell chemicals unless specifically instructed to do so by the teacher.

e. Broken glassware or other sharp objects should be handled with care, and proper disposal procedures should be followed.

f. All spills, accidents, or injuries must be reported to the teacher or a staff member immediately for appropriate action.

5.Safety Training and Education:

a. Regular safety training sessions will be conducted for both teachers and students to enhance their awareness of potential risks and educate them about safety protocols.
b. Safety rules and protocols will be integrated into the science curriculum, ensuring that students receive ongoing education on safe practices in the laboratory.
c. Additional resources, such as safety videos, posters, and online materials, will be made available to reinforce safety knowledge and best practices.

6. Using CLEAPPS

a. Safety Guidelines: Oakwood has access to the comprehensive safety guidelines and documents specifically tailored to science education. These guidelines cover topics such as chemical handling, equipment usage, laboratory procedures, and risk assessments. By following CLEAPPS' recommendations, we can establish and maintain safe working environments in our science labs.

By implementing and adhering to these safety protocols, we aim to provide a secure environment that promotes the exploration of scientific concepts while minimizing the risks associated with hands-on experimentation. The collective effort of all individuals within the school community is crucial in maintaining a safe and conducive atmosphere for learning in the science classroom.