Science

Subject Lead: Coral Holmes

Our vision for science here at St Columb Major Academy is to develop children's natural curiosity and inquisitiveness for the world around them. We want children to approach the world around them scientifically: asking questions, thinking like scientists, and learning about their world around them. Our goal is to inspire our children through an engaging and purposeful curriculum, fostering a life-long love of science and valuing its purpose in both the world around them and their future.

We aim to achieve this through a carefully planned and progressive curriculum that the children will follow across their time at our school. By developing pupils' knowledge, working scientifically skills, enquiry skills, vocabulary and cultural capital, we aim to help pupils' succeed as they progress through education and later in life.

We are passionate in our belief that science is a subject for all and every pupil, regardless of their background, can achieve the key knowledge, skills and inspiring learning experiences that will equip them to be life-long, excited scientists. This underpins our values as a school where everyone can achieve their aspirations in an inclusive, diverse and aspirational environment.

At St Columb Major Academy, we intend to implement the national curriculum for science to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes, and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

(National Curriculum 2014)

We will strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talent, and those learning English as an additional language (EAL), and we take all reasonable steps to achieve this.

St Columb Major Academy School Priorities:

1. Culture: To embed, model and promote the school's rules and values in both the school environment and out in the community; developing the understanding about behaviour needs and positive ways to support these.
2. **Curriculum:** To implement and embed mixed-age planning and new rolling topic plans for all subjects; ensuring clear progression of learning tasks and vocabulary.
3. **Pedagogy:** To embed the Core Habits across the school for teaching in all subjects; ensuring consistency of practise, with particular focus on the teaching of Maths, Reading and Writing in order to ensure the best outcomes for all groups.

Teaching

- Chris Moyse approach: I do, we do, you do.
- Units of learning broken down to small steps progression in learning for each lesson.
- Knowledge organisers in place.
- Subject specific vocabulary embedded in lessons.
- Embedding five main types of scientific enquiry.
- Assessment check point- at the beginning of every lesson to retrieve and practice prior learning ready for learning new content.
- Adaptive teaching based on needs of the class.

Personalised Learning

- Quality First Teaching
- Guided groups to support pupils where needed.
- Use of resources, models, images and word banks
- Variety of ways to record outcomes.

Resources

- Resources are audited, reviewed and reordered where necessary each academic year.
- Practical resources to use when working scientifically.

Cultural Capital

- Space planetarium workshop.
- Science fair.
- Investigations and Experiments to develop awe, wonder and critical thinking
- Science ambassadors.

Assessment

Teachers plan for Assessment Check Points at the start, within and end of each learning session.
Formative assessments by all adults in all lessons to reframe learning (if required)

Teachers assess against National Curriculum components to inform a summative judgement.

KIRF questioning

End of unit composite

Marking of learning in line with the school marking policy

Inclusion - SEND

- Quality First Teaching
- Planned additional support from adults (as required)
- IEP Targets

Curriculum Scope and Progression

Exceeds the requirement of the NC through:

Working as a scientist

- Breadth of learning planned encompassing both disciplinary and substantive knowledge

Monitoring

- Book looks
- Pupil conferencing- opinion line
- Learning drop-in's (stepLab)
- Planning monitoring
- Teacher feedback

Outcomes

- 24/25 All classes now have science displays which include key vocabulary, enquiry types and enquiry skills

• Guided group work and intervention within lessons. • Subject specific vocabulary displayed. • SEND document – support pupils to access science learning.	- carefully planned, small steps in learning on subject progression grid. - Opportunities to develop science capital through planning that links children's learning to the wider world. - Component parts are sequenced to build on prior learning - Disciplinary and Substantive knowledge mapped out across the school - Misconception lessons to fill any gaps and recap lost learning - Wider curriculum links – Interpreting and presenting data in maths, researching, recording and presenting knowledge in ICT, designing and constructing products in DT.	• Working scientifically skills embedded within planning and lessons that are delivered. • Use of sentence stems e.g. As a scientist, we are learning… • Providing opportunities within planning to cover five types of scientific enquiry in all year groups.		• 24/25 All year groups have introduced enquiry types and enquiry skills
Disadvantaged Pupils • Quality First Teaching • Planned additional support from adults (and as required) • Standards and interventions tracked termly by SLT and PP Lead • Planned interventions as required • Opportunities for collaborative learning • Range of resources to support with learning. • Visitors and workshops in school to provide experiences and develop science capital.	**Transition** • Information and data sharing with class teachers. • Links with secondary school to share information. • Workshops led by local secondary schools.	**CPD** • 24/25 Updated science vocabulary progression with school curriculum lead and trust science lead • 24/25 Supported by trust science lead to establish next steps- introducing enquiry types and enquiry skills, promoting consistency with 4 steps to start a science lesson • Science subject leads – termly meetings with Kernow Learning science leads.	**Strengths** • Development of children's substantive knowledge. • Engagement towards science learning. • Increased profile of the subject through whole school science events and workshops. • Science working walls to support learning and recall of prior learning • Development of vocabulary and vocabulary explicitly taught in every lesson • Outcomes and presentation in books • Emerging consistency of teaching in science. • Beginning teaching enquiry types and enquiry skills within every science lesson	**Next Steps** • To monitor mixed aged planning for our new mixed classes that follow our new long term plans • To ensure that scientific vocabulary is being taught in every lesson (following progression document) and that pupils are given the opportunity to talk, as a scientist, using the oracy framework • For pupils to begin to talk about enquiry types and enquiry skills during pupil conferencing • To ensure consistency in science lessons by teachers following the 4 steps to start a science lesson 1. Lesson objective/enquiry question 2. Enquiry approaches and enquiry skills 3. Recap of prior learning/ACP(assessment check point) 4. Vocabulary including definitions