Wallsend Jubilee Primary School

Science Curriculum Statement

At Wallsend Jubilee Primary School, we want every child to be happy and enthusiastic learners of Science, and to be eager to achieve their very best in order to fulfil their talents. We understand the need for all pupils to develop their scientific ability and knowledge through STEM, as an essential component of all subjects and as a subject in its own right. A high quality science education not only helps to support pupils work across the curriculum, but also provides the foundations for understanding the world around them.

As such, at Wallsend Jubilee Primary School, we want to inspire pupil curiosity in pupils about the world around them, by maximising learning opportunities and providing curriculum enhancement through our immediate local environment in Wallsend, encouraging our pupils to ask questions and supporting them to find answers out for themselves. We aim to ensure that all pupils gain knowledge about the methods, processes and uses of science and of the physical, chemical and biological elements of the world around them; outdoor learning plays an integral role in this, and our spacious grounds have been developed to include an outdoor classroom, and a new garden area. Additionally, our curriculum has been sequenced to enable pupils to gradually widen their sense of understanding of the world them, building up a body of key foundational knowledge and concepts, with carefully support and scaffolding at each key phase to enable pupils to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena.

<u>Intent – What we are trying to achieve</u>

- Our principal aim is that children leave Wallsend Jubilee Primary School with a secure understanding of the nature, processes and methods of science through different types of science enquiries that will help them to answer scientific questions about the world around them, thus ensuring that children see learning in Science as an on-going process, not a one-off event.
- We aim for all learners to be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- Our children will meet the National Curriculum expectations in Science, including all Working Scientifically elements, which will be taught by highly-qualified, enthusiastic staff who will support children to develop mastery of concepts and inspire enthusiasm and interest in the subject.
- Pupils will develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage of learning: this will include building up an extended specialist vocabulary. Progression will be ensured by following our carefully sequence progression map (please see additional documents).
- All children will study Science for at least 40 hours over the academic year.
- Pupils will be given the opportunity to devise and answer their own scientific questions. Predicting and hypothesising will support pupils in knowing that it is OK ‘not to not the answers’, and that scientific exploration is a key element of ‘being a scientist.’
- Opportunities will exist for children of all ages to experience learning beyond the classroom; Outdoor learning will be integral to this, and our outdoor gardens and classroom, as well as our local Country Park, will be fully utilised to maximise pupils’ experiences and science capital.
- Children will develop a deep understanding of the subjects they are studying. They will increasingly use their prior knowledge to move learning forward, and any misconceptions will be identified and addressed.

- Children will understand how our 6Rs of learning and British values relate to science, including the social and economic implications of science.
- Children will develop a real understanding and appreciation of the world around them, leaving us with the ability to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes

Characteristics of a Scientist

- The ability to think independently and raise questions about working scientifically and the knowledge and skills that it brings.
- Confidence and competence in the full range of practical skills, taking the initiative in, for example, planning and carrying out scientific investigations.
- Excellent scientific knowledge and understanding which is demonstrated in written and verbal explanations, solving challenging problems and reporting scientific findings.
- High levels of originality, imagination or innovation in the application of skills.
- The ability to undertake practical work in a variety of contexts, including fieldwork.
- A passion for science and its application in past, present and future technologies

Implementation – How do we translate our vision into practice?

- The curriculum hours in Science are non-negotiable and will be followed by all staff in the school. Fixed timetables will be set before the academic year and monitored by the Senior Leadership Team of the school.
- We have worked alongside the science department at Burnside College to support the transition of science across Key Stages 2 and 3.
- The subject leader for Science is a lead facilitator for the Science Learning Partnership and Local Leader within North Tyneside Learning Trust, and as such regularly attends and delivers Primary Science CPD. Additionally, the subject lead meets the senior leadership team/governing body annually to evaluate provision in order to ensure that teaching and learning in Science is outstanding.
- There is an up-to-date and relevant CPD focus for Science for all staff. Where necessary, staff will receive additional coaching and training in Science, this includes any maternity or long-term absence cover.
- Carefully designed sequences of learning in Science ensure consistency and progress of all learners.
- Trips and visitors are used to enhance learning opportunities for all pupils. Enrichment and cultural capital opportunities are planned in throughout the year.
- High quality input from experts and educational resources complement the delivery of specialist learning admirably.
- Online resources such as Explorify and the STEM learning portal are used alongside good-quality, regularly audited resources to promote science investigation and enable children to answer scientific questions.
- There is a clear and embedded link between the teaching of Maths and Science.
- High quality teaching responds to the needs of children. Pre and post formative and summative assessment are used alongside teachers actively marking work in lessons in order to identify misconceptions early.
- Actively promoting aspirations for the future. Children develop an understanding of how subjects and specific skills are linked to future jobs. We work with the World Of Work Team at North Tyneside Learning Trust, and with RTC North STEM Ambassadors, to ensure children are exposed to a range of potential career roles.

Here are some of the jobs you could aspire to do in the future as a Scientist:

- Doctor
- nurse
- veterinarian
- marine biologist
- engineer
- dentist
- sports scientist
- crime-scene investigator.

Cultural Capital

- Children will learn about areas of significant interest, including weather patterns, plate boundaries, animals and life-cycles.
- Children will learn about famous scientists relevant to their units of study, for example Charles Darwin and Galileo Galilei.
- Each year group will also focus on a prominent female scientist, discovering their role in the world we live in today. These will include: Mary, Helen Sharman, Valentina Tereshkova, Glady Mae West, Marie Curie, Ada Lovelace and Florence Nightingale.
- Fieldwork trips will take place for each year group.
- Use of computer software to aid pupils with secondary research.
- Trips and visitors are used to enhance learning opportunities for all pupils.
- Misconceptions are identified and challenged regularly.

Impact – What is the impact of our curriculum on the students?

- Children are happy learners within Science. They experience a wide range of learning challenges within the subject and know appropriate responses to them.
- Through Science, children will deepen their appreciation for the 6Rs for learning
- Visits and within science will enhance the lives of the children: they will be able to discuss how the experience has impacted their knowledge and understanding.
- Children will be aware of wide range of STEM careers that they can aspire to. They will want to continue their study of science beyond Key Stage 2.
- Children of all abilities and backgrounds achieve well in Science.
- Children talk enthusiastically about their learning in Science, as evidenced through learning walks and pupil voice samples.
- Clear outcomes focus and guide all Science development plans and drive improvement.
- Fundamental British Values are evident, and children understand the social and economic implications of science:
- Children understand the uses and implications of science, today and for the future.
- Through a well structured, taught and regularly reviewed curriculum, children will produce outstanding work and ‘be the best they can be’.