



Curnow School
Science Policy Statement

INTENT – School (Access)

All pupils at Curnow School study Science through our Understanding the World curriculum as part of their basic academic entitlement and is of vital importance in our Curriculum.

All staff at Curnow School are involved in the teaching of Science paying due regard to a pupils chronological age and their developmental stage. It therefore seeks to be flexible by being responsive to individual need, developmental need and learning style. We strive to provide all pupils regardless of their ability, gender or race, with an opportunity to experience the enjoyment, stimulation and knowledge that the teaching of Science can offer.

Science encourages all pupils to think and learn to develop an interest in and curiosity about the world through the development of key skills or 'working scientifically'. The National curriculum outlines the following skills pupils need to acquire in order to achieve the aim of examining the nature, process and methods of science:

- scientific knowledge and conceptual understanding
- nature, processes and methods of science
- uses and implications

Key Learning Indicators

At Curnow we believe the development of the key skills outlined within above needs further focus. We believe therefore that to fully enable our learners at Curnow to 'work scientifically' we need to establish what these skills are (pre-requisite skills). We therefore need to identify how we can plan for the development/acquisition of these which inform relevance in learning and provide challenge. We have therefore identified these pre-requisite scientific key skills as:

- observing
- comparing
- classifying
- prediction
- estimating
- measuring
- communicating
- concluding

These key skills are embedded throughout the curriculum and identified through our long term planning documents across each key stage of the school. This allows teachers within the school to work in an informed way addressing the continued development of such skills by our learners. The aim is to ensure our pupils learn to use a variety of approaches to work scientifically.

To support the informed development of these key skills the school uses the B² Progression Steps assessment to assist the development of pupils' skills in working scientifically. This assessment identifies the key skills required in the areas of: observing, comparing, classifying, prediction, estimating, measuring, communicating and concluding. Through this each teacher can ensure pupils learning outcomes are identified at the appropriate level and ensure challenge is presented through the identification of the next skill to be achieved. The key skills will therefore inform all planning and subsequent assessment of science throughout each key stage of the school.

Through our long term planning documents, we aim to ensure that all pupils have a breadth of experiences utilising the units of work and programmes of study from the Early Years Foundation Stage, National Curriculum and EQUALS 'Moving On' Curriculum. Our intention therefore, is to modify and adapt programmes of learning which makes them both specific to need and provide a breadth of experiences and offer a progression to children's learning.

INTENT – Pupil (Purpose)

EYFS – Understanding the World; Physical Development and Communication & Language.

There are seven areas of learning and development that must shape educational programmes in early year's settings, all of which are important and inter-connected. Science actively contributes to all of the areas but has a particularly important contribution to make towards the following areas: Understanding the World, Physical Development and Communication & Language.

The teaching delivery within **EYFS** will aim to encourage the pupils of Curnow School to:

- Find out about themselves and the world through exploration, using all of their senses.
- Learn through stimulating environments that offer a range of practical activities which encourage children's curiosity and interest in early aspects of scientific enquiry.
- Begin to develop their skills around exploration, experimentation, observation, prediction, problem solving, critical thinking, decision making and discussion.
- Have had hands on experiences whilst developing their scientific enquiry and investigative skills.
- Have heard and be aware of scientific vocabulary whilst being encouraged to use it within their own communications.
- Develop their self-esteem and confidence by making their own decisions about what to investigate and how they are going to do it.
- Discuss and communicate their experiences and what they have found out.
- Encourage pupils to predict future findings, rehearsing and reflecting upon their investigations/knowledge

National Curriculum aims Key Stages 1 and 2:

The teaching delivery within **Key Stages 1 and 2** will aim to encourage the pupils of Curnow school to develop/further develop their **scientific knowledge and conceptual understanding of the nature, processes and methods/use of science** (key skills: observing, comparing, classifying, prediction, estimating and measuring, communicating and concluding). Through the provision of stimulating and challenging learning opportunities we will enable all pupils to develop their full potential to work scientifically by:

- Further developing their scientific knowledge and conceptual understanding of nature, processes and methods used within science.
- Begin to work scientifically, developing their skills within: observing, comparing, classifying, predicting, estimating, measuring, communicating and concluding.
- Further develop their exploration skills by using the appropriate senses to explore and investigate.
- Develop an understanding of cause and effect by experiencing & recognising that their actions have consequences.
- Observe changes and communicate what they have seen.
- Develop their skills of comparing, classifying and predicting.
- Develop their understanding of scientific vocabulary and their communication skills so that they can discuss observations, comparisons and predictions.
- Take part in practical activities and experiments that require doing and thinking skills.

National Curriculum aims Key Stages 3 and 4:

The teaching delivery within **Key Stages 3 and 4** will aim to encourage the students of Curnow school to develop/further develop their **scientific knowledge and conceptual understanding of the nature, processes and methods/use of science** required to understand the **uses and implications** of science (key skills: observing, comparing, classifying, prediction, estimating and measuring, communicating and concluding), today and for the future by:

- Further developing their scientific knowledge and conceptual understanding of nature, processes and methods of science, required to understand the uses and implications of science.
- Further developing their skills of working scientifically by refining their skills within: observing, comparing, classifying, predicting, estimating, measuring, communicating and concluding.
- Widened their scientific knowledge by using their senses to explore and investigate various concepts more independently.
- Further developing their knowledge of linking concepts by being able to communicate & explain why an action has a consequence.
- Develop the ability to use estimations and measurements within practical experiences.
- Increasing the breadth and depth of their experience, knowledge and understanding within science on their everyday lives.
- Harbours a positive attitude towards science by developing their confidence, independence, persistence and co-operation skills.
- Developed the skills to think and understand more abstract concepts, as well as the concrete and practical.

Post 16 aims of provision:

The teaching delivery in our **Post 16 provision** will aim to encourage the students of Curnow School to develop their **scientific knowledge, conceptual** understanding, **processes and methods** of science in understanding the **implications** of science through:

- Being able to use their scientific knowledge and understanding which has been embedded through the key skills; observing, comparing, classifying, predicting, estimating, measuring, communicating and concluding to enhance their lives as adults so they can complete functional tasks as independently as possible.
- Be able to use scientific skills in daily living activities and learning.
- Develop their scientific understanding through functional activities, for example cooking, constructing etc.
- Be able to select and safely use appropriate materials for specific purposes.
- Be aware of the effect their actions may have on the environment.
- Incorporate scientific learning in Work Related Learning activities.
- Increase the breadth and depth of their experience, knowledge and understanding within science.
- Develop the students' awareness of, curiosity and interest in, themselves and the world around them.
- Foster a positive attitude towards science by developing students' confidence, independence, persistence and co-operation skills.
- Experiencing/learning about a range of equipment using man made energy sources
- Develop knowledge and understanding of the natural and manmade world and its resources.
- Learning about and experiencing environmental projects.

L2L aims of Provision:

The aim for our L2L pupils is to encourage them to learn the skills and concepts they need and simultaneously learn how to acquire, link and take ownership of new skills and concepts in the future. The specific activities and content used in this process will vary with pupils' sensory and other abilities, their ages, strengths and preferences.

The teaching of Science is delivered through the L2L curriculum and addressed through a personalised learning plan designed using assessment/observation outcomes (personalised learning plans will be delivered daily via the class timetable through National Curriculum subjects). Through such means the National Curriculum becomes the 'vehicle' for structured teaching/learning sessions which focus on the development/further development of essential skills/concepts for each pupil. Personalised learning outcomes can be woven through the areas of Cognition & Learning; Sensory & Physical and Communication & Interaction. This process and all subsequent assessment ensure teachers develop pupils' new knowledge and skills (next steps/targets) building on what has already been taught before ensuring learning is sequenced via small steps.

We aim to:

- Develop a secure foundation through learning and development opportunities which are planned around the needs and interests of each individual child
- Benefit from robust assessment opportunities where progress is measured and reviewed regularly through daily assessment sheets, photos and video evidence
- Access quality of opportunity and anti-discriminatory practice, ensuring that every child is included and supported

IMPACT:

- Make progress from their differing starting points & over time progress well within the key skills of Science.
- Learning remains sequential & builds on long term memory and experience (prior knowledge & understanding – their current skills and abilities).
- Are prepared well for the next stage; next steps secure challenge, promote resilience within all learning.
- Enjoy their learning and engage well.
- Begin to develop various ways of thinking; learn how to investigate and solve problems as well as communicating these ideas.
- Develop an understanding and knowledge of scientific ideas, life processes and skills alongside physical processes through exploration of the environment and living things. Furthermore, pupils will gain an understanding of materials and their properties through objects and events, relating to every day experiences.
- Discover why science is important in the world and how we use the skills during every day functional activities.
- Further shape their own ability to think, learn, solve problems and make informed decisions.
- Enable pupils to lead a life after school which is as independent as possible.

Monitoring and review

It will be the responsibility of the teachers, Subject Leader, Leadership Team and the Governors to ensure the area of Science is monitored and reviewed to make sure the delivery of Science maximises learning by providing richness, breadth, balance in knowledge, skills and direct experiences in a way relevant to each individual and their own lives.

The Subject Leader will monitor the policy on a biennial basis as part of the School Self Evaluation Policy and Guidelines.

Guidelines

There are different responsibilities for staff members in the delivery of Science

1 Responsibility of Teachers

1.1 Plan for progression

- 1.2 Use the scheme of work to plan Science into Medium and Short Term Plans
- 1.3 Plan for individual needs and differentiate work and materials
- 1.4 Record pupil's progress using IEP's and our bespoke assessment
- 1.5 Provide appropriate information to the Subject Leader
- 1.6 To maximise opportunities to help develop ICT in Science
- 1.7 To carry out any appropriate risk assessment associated with Science

2 Responsibility of Subject Leader

- 2.1 Monitor the teaching of the subject by access to colleagues MTP's
- 2.2 Support colleagues in planning, teaching styles, use of resources
- 2.3 Purchase resources and organise them in a way that ensures effective and efficient use
- 2.4 Ensure curriculum coverage across the whole school and be aware of continuity and progression in the subject
- 2.5 Monitor and evaluate Science across the school as part of the School Self Evaluation Policy and Guidelines via a subject portfolio and lesson observations
- 2.6 Monitor pupil's progression using bespoke formative and summative assessment data
- 2.7 Provide appropriate information on Science to the Governors of the school
- 2.8 Maintain the Science Subject Leader's file in line with the agreed format
- 2.9 Monitor the Science policy document biennially as part of the School Self Evaluation Policy and Guidelines

3 Responsibility of the Senior Leadership Team

- 3.1 Ensure adequate resources
- 3.2 Ensure access to training to Science Subject Leader
- 3.3 Ensure access to training for teachers and support staff
- 3.4 Have an overview of the subject area

4 Responsibility of Governors on the Teaching, Learning and Assessment Sub Committee

- 4.1 To monitor the delivery of Science through reports from the Subject Leader
- 4.2 To approve the Science policy and any subsequent updates.

5 Resources

- 5.1 Resources will be purchased to underpin the effective teaching delivery of Science by the subject co-ordinator. A resource allocation will be made by the Leadership and Management Sub Committee of the Governing Body each year and will detail the budget awarded. The Subject Leader will audit all expenditure and consequent value to the school via audit sheets; records will be stored in the Subject Leader's file.
- 5.2 Resources can be found in every classroom within the school and teacher resource area. The Subject Leader, through formal and on-going monitoring will identify if anything is running out or needs replacing due to general wear and tear. Additional resources may need to be obtained by faculties for specific activities, or other Subject Leaders to support the delivery of their subject.

6 Assessment and Recording

- 6.1 Pupils will be assessed using our bespoke assessment (R2L) or B²engagement steps (L2L), as appropriate. Pupils will also be assessed using the Foundation Stage Profile within their Reception Year. The assessment framework for Science will be updated by teaching staff on a termly basis. Pupils work can additionally be recorded through photographs, print out of work etc.
- 6.2 Pupils within Post 16 classes will also be assessed using the ASDAN assessment criteria found within relevant Personal Progress and Personal and Social Development
- 6.3 Recording and reporting will follow the agreements outlined in the schools 'Assessment, Recording and Reporting Policy' (PARRC policy).

7 Delivery

- 7.1 We will strive for excellence in the teaching delivery of Science by:
- The quality of learning which pupils' experience
 - The quality of teaching that we provide
 - The richness of the environment in which they learn
- 7.2 The Science Curriculum will use whatever specialist techniques and teaching approaches, which motivate, support the needs, or improve the access of any individual. Teachers will therefore look at matching their teaching approaches to individual pupil's learning styles.

8 Delivery of subject

- 8.1 Science will be taught in a range of settings within the school.
- Timetabled Science lessons within a topic/theme
 - Whole class, small group and individual teaching
 - Linked to every other subject

9 Planning

- 9.1 Teachers will follow the established scheme of work for Science and use the track backs written by Curnow School to determine differentiated learning outcomes for each pupil within their class. It will be the responsibility of the Science Subject Leader to ensure this scheme of work accurately reflects the learning needs of the pupils and follows the curriculum ethos for each Faculty.

10 Accreditation

- 10.1 Pupils and students in Key Stage 4 and Post 16 Faculty will have the opportunity to undertake accredited units of work within the ASDAN Personal Progress and Personal and Social Development modules of work. Teachers in these Faculties will determine on an individual basis the appropriateness of each unit based on pupil/student need ensuring these add value to individual learning.

- 10.2 The awards obtained by the pupils will be formally presented during the annual Record of Achievement day in the Summer Term.

11 Equal Opportunities

- 11.1 Teachers will ensure that provision reflects Cultural Diversity, Ethnicity, Religion, Gender, Ability, Disability and Age.

12 Health and Safety

- 12.1 All staff should ensure the health and safety of all pupils and staff at all times

Policy approved by the Leadership and Management sub-committee	January 19 th 2020
Policy to be reviewed	Every 2 years
Responsibility	Science coordinator and Head Teacher

