



# North Ridge High School Science Policy



## Curriculum Policy for Science

### Equality Statement

#### **Equalities Act 2010**

The Equality Act 2010 has been drawn up to tackle inequality and prevent discrimination against people on the basis of 'protected characteristics'. It brings together several existing laws and aims to make understanding the law simpler. It also introduces a new single public sector equality duty, which requires public bodies to actively advance equality.

All policies at North Ridge take account of this Act.

### UNICEF Rights of The Child

#### **Rights Respecting Schools**

In the 1940s, the United Nations produced the Universal Declaration of Human Rights which was adopted in 1948. This Declaration applies to children as well as adults. However, growing awareness of the rights of children led to calls for a dedicated children's human rights treaty.

Throughout the teaching of Science articles from the Convention will be referenced as specific teaching and learning points as appropriate.

### INTENT

#### Purpose/Rationale

This policy outlines the purpose, nature and management of Science taught in our school.

The curriculum co-ordinator for Science is responsible for the organisation of their subject throughout school. This includes monitoring of subject delivery, resources and for evaluation and review of subject development.

The implementation of this policy is the responsibility of the Headteacher and all the teaching staff engaged in the teaching of Science.

The development of scientific skills remains a priority across all curriculum areas. With this in mind subjects should give consideration to explicit, objective led teaching to promote scientific skills within their subject.

### Overview

Science is about students developing a sense of curiosity and imagination, extending their knowledge of self and of the world around them. This knowledge should be accessed through an experimental and investigative approach. In particular investigation is an integral part of the delivery of Science and through this students will see the relevance of the knowledge they gain.

### Aims

To develop in our students:

- An enjoyment of Science by providing relevant, interesting and challenging experiences and activities.
- Observational skills, by looking for patterns and contrasts.
- An inquiring mind and a logical approach to problem solving.
- The ability to draw conclusions from simple experiments and, where appropriate, to devise suitable experiments for further investigations.
- Communication skills in speaking and listening, written, diagrammatic and symbolic forms.
- Co-operation and a respect for others by being able to work as part of a team - the development of appropriate social skills.
- Confidence in their own abilities.
- A respect for the environment and a careful use of resources.
- An interest in the world about them and a greater understanding of it.

The extent to which these aims are appropriate to individual students will depend on their particular learning difficulties. For example, for those with profound and multiple learning difficulties the Science curriculum will enrich their sensory experiences, students with complex learning needs will engage in learning, using a wide variety of tools which will endeavour to meet their personalised styles, whilst pupils with moderate learning difficulties will be able to devise their own experiments.

## IMPLEMENTATION

### Teaching & learning

The national curriculum for science aims 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.

Science within the school is split into 3 main strands, each covered in equal amounts within a range of topic headings.

**Biology** covers the biology of plants and animals, classification, genetics and ecology.

**Chemistry** introduces the students to a broad study of chemistry. Materials are classified in various ways and types of material change are experienced i.e. physical, chemical and geological. The practical uses of materials are also developed.

**Physics** involves the study of energy and some of its forms i.e. electricity, magnetism, light and sound. The effects of force and motion are studied and the solar system is explored.

Science is used, applied and developed through activities in other areas of the

curriculum where applicable such as, PSHE and citizenship, sex education, art and food technology.

### Planning

The school has a statutory responsibility to cover all the programmes of study for Key Stages 3 and 4. The coverage of the programmes of study for Science is set out in the school's curriculum framework document and schemes of work.

The content of the NC Science PoS will be delivered as appropriate to individual students on the basis of their needs and ability, and will take due consideration of their intellectual, physical and sensory capacities, with due regard to age appropriateness.

The nature of cross curricular and subject specific teaching is dependent upon the key stage in which the individual is operating.

In KS3, Science is taught through subject based modules of learning that follow a rolling programme as outlined in the school curriculum framework and schemes of work. Students will also use Science to support relevant targets in other subject areas. Teachers will use the Astra Zeneca Strata Scheme as a support structure.

In KS4, students follow Science modules of learning which are derived from the AQA accredited Entry Level Certificate scheme. Alternatively less able students will gain accreditation in the form of AQA Unit Award Scheme, which highlights specific skills gained and experiences.

In KS5, students follow an ASDAN award course where there may be elements of scientific investigation.

The Science curriculum is accessed by all KS3/4 students. It meets statutory requirements, is differentiated to individual learning needs and is resourced (e.g. additional staffing, adapted equipment) to ensure full access for all.

Teachers should either have a good knowledge and adhere to the health & safety guidelines written into the Science Schemes of Work.

Students in KS3/KS5 will be usually be taught by their class teachers, whereas, the students in KS4 will be taught by the science specialist curriculum co-ordinator. The planning of the curriculum units over KS3/4/5 is the responsibility of the curriculum co-ordinator in this area. Work planned for students with statements of SEN will encourage full participation whenever possible. Aspects of Science can be the focus of the individual learning programmes for students, particularly with PMLD, as outlined in the school parallel and individual curriculum framework.

North Ridge is an internationally aware school. Accordingly all subject schemes of work incorporate when appropriate activities with an international dimension as part of the subject delivery.

### IMPACT

Knowledge, Skills and Understanding

Students will, over their time at North Ridge High School, deepen their scientific knowledge and understanding of biology, chemistry and physics. Their ability to use the processes and methods of scientific enquiry will improve and in turn help them to answer scientific questions about the world around them.

They will be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

The extent to which science will impact individual students will depend on their particular learning difficulties. For example, for those with moderate learning difficulties will be able to investigate and solve scientific problems and then explain the science behind their findings. Whilst those students with complex learning need will be able link scientific theory to experiences and possibly make predictions. Students with profound and multiple learning difficulties the Science will enrich their sensory experiences and provide an alternative learning pathway.

#### Assessment, Recording and Reporting

Assessment of individual attainment in Science will depend upon the Key Stage in which the individual operates, as outlined in the school assessment policy.

In KS3/4 assessments are made over a period of time and are based upon the evidence of more than one activity. Student progress is monitored by the class teacher in the first instance, in relation to targets set in individual and differentiated programmes, and recorded at the end of each period of learning as identified in the school curriculum framework and schemes of work in accordance with the school assessment and record keeping policy. Student progress is recorded against the P level descriptions regularly on B-Squared. Student cohort progress is monitored by the subject co-ordinator.

In KS4 assessments are undertaken within each module of study. Student progress will be recorded at the end of each module of study as required by AQA assessment requirements. Student progress is also measured on B-Squared. The assessments are set by the AQA and take the form of an exam (ESA) or a piece of written investigative work (TDA).

Assessments will be based on observation, discussion and product where appropriate, and will be subject to teacher assessment at the end of each planning period.

Samples of student work are retained as evidence of achievement in aspects of each subject for use in teacher assessment moderation, in addition to subject based records maintained for each student in accordance with school assessment and record keeping policy

#### Staff Development

Non-science specialist training will be provided by the curriculum co-ordinator for Science. The curriculum co-ordinator will support staff teaching science by assisting with the planning of lessons and the use of equipment and appropriate investigations and demonstrations.

#### Resources

The Science co-ordinator has compiled a selection of resources including activities taken from some Science schemes and staff produced worksheets, as a source of ideas.

All Science activities in school will be carried forward with acknowledgement of the health and safety policy of the school and safety guidelines are written into the Science schemes of work. Also science users should be aware of the CLEAPSS health and safety advice. The science co-ordinator can advise on this.

Specialised Science equipment is held in the science lab and is readily available to teachers, with whom lays the responsibility for return, and notification of damage and loss. Such losses or damage will be reported to the Science co-ordinator. Students are not permitted to access Science equipment from the store room. Science resource books are kept in the Science lab or the library.

During the course of work undertaken in Science, all students will have the opportunity to make visits out of school connected with the progress of their studies and linked directly to the planned scheme of work for those studies.

Where appropriate external practitioners will be invited into school to support and enrich activities offered as part of the curriculum.

#### Monitoring and evaluation

The Head teacher, Assistant Head, the Science Co-ordinator, Assessment Co-ordinator and teachers, monitors Science having identified priorities, the SLT and Science Co-ordinator construct an action plan that may form part of the School Development Plan. This forms the basis for any monitoring activities and will clearly identify when, who and what is to be monitored and how this will take place e.g. classroom observation, planning scrutiny, work sampling etc.

#### Review

Date approved by *Governors*: 27/1/2020

Date of review: Jan 2022