



Science Policy

Rationale and Aims

At Victoria Education Centre we aim, through the teaching of Science, to stimulate the students' curiosity and sense of awe of the natural world, in finding out why things happen in the way they do. We aim to develop students' ideas and ways of working to enable them to make sense of the world through investigation and the application of process skills. In particular it is our purpose to provide an enjoyable experience of Science.

Our aims are to enable students to:

- Ask and answer Scientific questions
- Foster concern about, and active care for, the environment
- Use investigations and practical activities to develop a greater understanding of the concepts and knowledge of Science
- Develop an enjoyment and interest in Science and an appreciation of its contribution to all aspects of everyday life
- Become familiar with the language and vocabulary of Science
- Develop an ability to use practical skills
- Develop social skills and self confidence in order to work both collaboratively and independently
- Develop skills of investigation, including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, planning and evaluating
- Develop the use of ICT in their Science studies.

Teaching Aims

- To teach Science in ways that are imaginative, purposeful, well managed and enjoyable.
- Give clear and accurate teacher explanations and offer skilful and appropriate questioning.
- Make links between science and other subjects.

Science has four attainment targets and a statement of breadth of study.

These are:

Sc1 Scientific enquiry;

Sc2 Life and living processes;

Sc3 Materials and their properties;

Sc4 Physical processes.

Our role is to teach scientific enquiry through the contexts of the three main content areas. The breadth of study statement in the National Curriculum is concerned with issues such as the use of ICT, scientific language and health & safety.

Science across the curriculum

Literacy & Communication:

Symbols, signing and word banks are used to support students to use scientific vocabulary and to encourage the asking and answering of questions. Students are

supported to record their findings through differentiated support in structuring their recording through the use of scribing, symbols and structured support for writing. Displays on classroom walls may contain key scientific vocabulary and symbols. Speaking and Listening skills are supported through discussion and recounting observations in Science lessons. Non-fiction texts, lists, report writing and instructions are just a few examples of links with Literacy. Literacy key skills are included in teachers' medium and short term plans.

Numeracy:

The use of mathematical skills in Science is evident in the use of numbers, data handling, measuring, and in using and applying. Estimating and predicting are skills used in investigations, as are accurate observations and recording. Numeracy key skills are included in teachers' medium and short term plans.

ICT:

The use of ICT, will promote, enhance and support the teaching of Science. It can also provide the means of recording and presenting students outcomes via multimedia methods. Students may use interactive software to model and simulate interactive processes.

PSE:

Science makes a significant contribution to PSE through its subject matter raising issues of citizenship and social welfare (such as environmental concerns and recycling) and through opportunity for discussion, debate and collaborative working. Science also has links with PSE through Life Processes – sexual reproduction, growing, health and hygiene.

Spiritual, Moral, Social and Cultural Development:

Science raises many opportunities for the consideration of many social and moral questions. Students may have opportunities to discuss issues related to smoking or the use of genetics for example. They will be encouraged to reflect on ways to care for the planet and the management of the Earth's resources. They will consider how people have similarities and differences, the care animals and plants and growth and development. An understanding of cultural differences and practices may be supported through discussion and debate in Science, and considerations such as evolution and the Earth in space may contribute to spiritual beliefs. The eco-schools project provides a clear link between Science and SMSCD, encouraging students to consider issues such as sustainability, care for the environment, animals, plants and the development of outdoor areas.

The Role of the Science Subject Leader

There are two Science Subject Leaders at Victoria Education Centre; each Subject Leader is responsible for different Key Stages.

The Subject leaders work closely with staff and the Science link Governor to plan for and sustain improvement in the teaching and learning of Science.

The Subject Leaders will:

- Lead staff development, increasing confidence and expertise with INSET, staff meetings, support and advice.

- Take the lead in policy development and the availability of relevant schemes of work designed to ensure progression and continuity in Science throughout the school.
- Support colleagues in the development and implementation of scheme of works.
- Support colleagues in assessment and record keeping activities.
- Monitor progress in Science, and work with the Educational Leadership Team to decide and implement action to be taken
- Monitor teaching and learning and disseminate good practice.
- Take responsibility for the purchase and organisation of Science resources. Keep up to date with developments in Science education and disseminate information to colleagues as appropriate.

(See Subject leadership Policy)

Teaching and Learning

At Victoria Education Centre, our principal aim is to develop students' knowledge, skills, and understanding in Science. We use a variety of teaching and learning styles in order to meet the needs of all our students. These include:

- Whole class teaching
- Individualised teaching
- Demonstration & Modelling
- Scaffolding
- Questioning
- Guided work
- Listening and responding
- Discussing and arguing
- ICT
- New technologies

Each lesson is planned to facilitate student progress.

Differentiation and entitlement

All students at Victoria Education Centre are entitled to high quality Science lessons regardless of ability. Assessment against P scales and the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs. We aim to match material, method and activity to the student in order to extend fully the talents, interests and abilities of each individual student to ensure progress is made.

In all classes students have a wide range of abilities, and we seek to provide suitable learning opportunities for all by matching the challenge of the task/activity to the ability of the student. In some lessons, we achieve this through differentiated group work and questioning while in others, students work from the same starting point before moving on to develop their own ideas. Teaching assistants work alongside teachers to deliver appropriately differentiated work for the needs of individuals.

Progression

Progression in Science occurs through the development of knowledge, understanding and skills. Progress is formally measured in levels and national expectations are in place for the end of each Key Stage (from KS2).

Curriculum Organisation

Children in the foundation stage are taught the science elements of the foundation stage document through 'The World'; also gaining the concepts, confidence, communication, social and physical skills in other areas of the foundation stage curriculum which provide an essential basis to future learning and attainment in Science as they go through the school.

Victoria Education Centre broadly follows the Science National Curriculum for Key Stages 1-3 for long-term planning - this acting as a starting point to ensure full coverage, with teachers planning for individuals with differentiated activities that are appropriate for the students' level of ability and understanding. Key Skills for the topic areas covered by the long term plans are available for teachers to use to appropriately level their teaching to the individual. Progression and coverage is ensured through long term plans for KS1-3 on a three-year programme related to topics. Due to the movement of students from class to class being unpredictable (due to the nature of the school – peer groups, class sizes etc.) there may be times when units are revisited in the same class. However, planning is carefully differentiated to ensure that students are taught at an appropriate level, with high teacher expectation and opportunities to succeed.

Due to the nature of the school and the needs and abilities of the students it is difficult to allocate minimum teaching times for Science in each Key Stage, as students' access to Science lessons may be affected by therapy needs, personal care and medical needs, arrangements for access to learning tasks and split placements.

Long term planning is completed by Subject Leaders ensuring the breadth of coverage across the year groups. Medium term and short term planning includes teaching and learning activities (including guided work), differentiation, focus support and key vocabulary. These plans are written by the class or subject teacher.

Extra-Curricular Provision

To enhance the Science curriculum at Victoria Education Centre, there are opportunities for students to participate in the eco-schools' project, pet's corner and gardening (for some students). Throughout the year, we may have visits and activities relating to Science.

Assessment, Recording and Reporting

Assessment of Science is undertaken at various times during the year. Teachers keep records on the children's progress and the key information is also recorded on central data tracking sheets. Subject Leaders then analyse data and take appropriate action.

National Curriculum/P scale teacher assessment levels are reported to parents biannually (Annual Reviews & Annual School Report). Targets are set to help them make progress to the next level.

Marking

The aim of marking is to provide formative assessment, celebrate achievement and to highlight next steps in learning. Marking should refer to the specific Learning Objectives or the Success Criteria used in a particular lesson or unit of work. Marking should be useful for the student and can take the form of written or verbal feedback. Where a piece of work has been produced with help it will be annotated to indicate the level of help given. Examination coursework marking is prescribed by individual boards.

(See Marking Policy)

Homework

Homework can be set in Science to achieve a range of purposes and tasks and will be differentiated where appropriate. For example:

- Some pre-learning and reviewing of activities relating to the theme for the term
- For students completing accredited awards, homework will be set where appropriate, and will relate to individual programmes and courses

(See Homework Policy)

Target setting

Target setting for the end of Key Stages is based on a number of factors including current teacher assessments, past test results for current and previous cohorts if applicable. Targets are set in line with National Progression Guidance and reviewed regularly and in conjunction with ELT and our external SIP.

Monitoring

Monitoring is a vital way to identify strengths and areas for development within the Science departments. Monitoring outcomes form the basis for discussion and further action planning.

Throughout the course of an academic year, the following monitoring activities will take place:

- Lesson Observations
- Learning walks and 'Drop ins'
- Work scrutiny
- Planning scrutiny
- Student discussions
- Moderating
- Cross curricular work scrutiny

All monitoring activities will have a specific focus relating to the department action plan or a whole school priority. Specific feedback is provided to individual teachers and general feedback is given to the whole department. Copies of all monitoring feedback is provided to the ELT.

Financial Management

A budget for subject development is managed by the two subject leaders.

Resources

There are a wide range of resources available for staff to use to plan and deliver the curriculum. These resources are kept in central storage. Use is made of specialist communication systems, software packages and adapted equipment. Resource needs are audited annually and purchased in order of priority.

Staff Professional Development

Professional development is met through the delivery of INSET and attendance at courses (including local Subject Leader forums where established). Department meetings allow the Subject Leaders to disseminate relevant information about new initiatives to teaching staff.

Liaison with parents, the community and other schools

There are two formal opportunities for parents/carers to discuss their child's progress and targets in Science during the academic year. All students will also have an Annual Review meeting. Parents are encouraged to contact the class/subject teacher if they have any concerns in the interim.

Written reports are sent home biannually (see Assessment, Recording and Reporting section).

Jen Williams / Margaret Humphreys	
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