



POLICY FOR THE TEACHING OF SCIENCE: A BTEC PERSPECTIVE

*'Come to the edge ', he said.
They said 'We are afraid'.
'Come to the edge', he said.
They came. He pushed them.
They flew.*

Apollinaire

Aims and objectives

Science teaches an understanding of natural phenomena. It aims to stimulate a young person's curiosity in finding out why things happen in the way they do and install a 'deep learning' approach: it teaches methods of enquiry and investigation to stimulate creative thought and get young people learn to ask scientific questions about the physical world around them and most importantly learn to acquire a problem solving approach.

Some of the many aims of Science are to:

- Ask and answer scientific questions
- Plan and carry out scientific investigations and research using equipment, including ICT
- Know and understand the life processes of living things
- Know and understand the physical processes of materials, electricity, light, sound, and natural forces
- Know about the nature of the solar system, including the earth
- Evaluate evidence and present their conclusions clearly and accurately.

Teaching and learning

Science is taught over duration of three separate 45minute lessons arranged as a Science Morning. At the Annex School the Science curriculum focuses on the syllabus laid out by the BTEC Applied Science Level 1 course. This lays out a clear general set of topics arranged into units of study. These themes are taught progressively via learning outcomes which are continually assessed. Older students work through the obligations of the course whilst younger students touch on simplified aspects of the topics in line with Key Stage 3 requirements of SC1, SC2, SC3 and SC4 and following aspects of P.O.S. in Biology, Physics and Chemistry. All students maintain a personal portfolio of work..

The nature of BTEC Science course is delivered in easy to grasp bite-size chunks for all which entail a manageable quantity of student work; this is made easily achievable and is taught progressively utilising a direct traditional teaching 'whole-class' 'chalk and talk' method.

There is also a strong kinaesthetic/visual approach used to help stimulate a dynamic style of enquiry-based learning specifically for our type of pupils. The BTEC Applied Science Level 1 course is provided as a continual assessment alternative to the more high pressure G.C.S.E. exam orientated system and Level 2 courses. Previously our students strived to achieve Level 2 status but when this changed to 'The Principles of Science' course the quantity and course expectations proved too hard for our students to succeed in. The Level 1 course allows the teaching to be very creative and stimulating for the students and more able to address the slower pace of S.E.M.H. students who often miss chunks of time through behaviour issues and demands.

The Level 1 course is divided into three parts; Level 1 Award (6 credits) which will be taught in the first year and concern the units; 12 'Making Useful Scientific Devices' and Unit 5 'Physics and our Universe'. The Second year of study will concern the Level 1 Certificate (13 credits) and involve the teaching of Unit 7 'Causes of Disease and Maintaining Health'. The course does also allow for further study of a Level 1 Diploma (37 credits) which could provide an option for 6 form study.

Due to the limited classroom resources (lack of a lab) some aspects of Chemistry teaching may be limited.

Assessment

Work is currently assessed by the 'Assessor' (Teacher) first. This is initially marked in line with the school assessment procedure involving effort and basic grading. The school also operates a behaviour points/effort system which is used to encourage good work. Students pursuing the BTEC qualification are expected to be involved in active learner feedback, after completing each learning outcome students work will be overviewed with the Teacher. As there is a potential of six students making up the school intake Science work is expected to be performed utilising up to three regular pair teams (which is good for promoting positive social interaction and teamwork). A lot of the work will also involve 1:1 work. It is expected that each pair group is allocated with a L.S.A. A lot of the work may also require outlining discussion and recording making and experiment activities with the school camera. This course will concentrate on addressing learning skills requiring Key Skills; Working with others and P.L.T.S.'s involving; Team Workers, Self Managers and Effective Participants. In relation to E.C.M (Every Child Matters) the work set is heavily skewed towards the 'Enjoy & Achieve' criteria.

K.S.3 students are encouraged to self assess their National Curriculum levels regularly on assessment sheets. All students are informally tested at the end of each morning/unit through Q & A for school points to check their retention of knowledge. The course is monitored by visits from The BTEC 'Quality Assurance Officers. All work is carefully inspected and errors corrected in line with the school assessment policy. In K.S.3 pupils are given summative comments and receive National Curriculum levels by conjoining the subject descriptors.

Appeals Procedure

The school has its own appeals procedure policy. In reality due to the nature of the students (E.S.B.D. /L.A.C.) this has never been taken up. This is due in part to the fact that most of the students have a full care order and so the students Key-workers also work with the school as L.S.A's and so are aware and often involved in the work that the students do. The Science Teacher also acts as a dedicated teacher to all students and so has a close relationship with them. The very small nature of the means that all formal processes are fairly transparent. In our school the Assistant Director of the care home company also acts as Head teacher and he is the nominated member of staff to manage appeals. He works away from the school in an admin capacity where all matters are dealt with in a speedy manner.

Formal Monitoring

The BTEC Level 1 course requires only a pass grade. All three compulsory units are also timetabled into a formal calendar: In this case the course covers a two year rolling programme. A final certificate is awarded on completion of all units. Teachers make a report assessment of each child's scientific ability at the end of each academic year and at the end of their stay with us.

Educational Visits

Educational visits to science related museums and environmental locations are utilised when applicable; these can often coincide with outdoor challenges demarcated by the ASDAN Award.

Health and Safety/Resources

All Science lessons are taught in an orderly disciplined fashion with a seating plan devised around team pairings for experiments. All teachers and care workers/L.S.A's are aware of the safety requirements for teaching science and inline with E.C.M. learning; Staying Safe and safety equipment and risk assessments are utilized whenever necessary, risk assessments are completed online via a company database for ease of record retrieval in order to ensure that science activities are safe and appropriate for all. Students are expected to write in pen, underline titles and date all work. All diagrams are completed in pencil and graphs should be completed on squared paper. Students are also encouraged to underline key words in highlighter. Students store their work in plastic wallets within a ring binder folder and are

expected to look after this in their lockers and have them ready at the start of lessons. Students are also expected to wear safety goggles with all dangerous substances and CLEAPS (safety recipe cards) are used in relation to all experiments. All chemicals are stored in a separate COSH cupboard and stock checked. Chemicals are acquired from reputable online companies. Support is provided in this lesson via L.S.A.'s at up to a 1:1 level.

This science teacher attends professional development updates on the BTEC Science course when required.

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