

EAST AYRSHIRE COUNCIL

EDUCATION COMMITTEE : 25 MAY 2004

SCIENCE STRATEGY

Report by Executive Director of Educational and Social Services

1. PURPOSE OF REPORT

- 1.1 To seek approval for a strategy to develop and improve science education in schools.

2. BACKGROUND

- 2.1 The Education Committee approved an outline Science Strategy on 27 May 2003. This strategy paper builds on and details the proposals approved in that paper, the Scottish Executive Education Department (SEED) letter of April 2003 "Additional Funding to Support Science Education Third Tranche", the Head of Service (Quality Improvement) letter "Funding in Support of Science Strategy" to schools of 2 June 2003, and the SEED letter of April 2004 "Grants for Improvements in School Education (Scotland) Regulations 1998 – Further Funding to Support Science Education".
- 2.2 It reflects National Priority 1, "to raise standards of educational attainment for all schools, especially in the core skills of literacy and numeracy, and to achieve better results in national measures of achievement including examination results; National Priority 2, "to develop and support the skills of teachers, the self-discipline of pupils and to enhance school environments so that they are conducive to teaching and learning"; and National Priority 5, "to equip pupils with the foundation skills, attitudes and expectations necessary to prosper in a changing society and to encourage creativity and ambition".
- 2.3 It also takes account of East Ayrshire's Priorities to Improvement (2003 and 2004), and "A Science Strategy for Scotland" (Scottish Executive 2001). The Science Strategy for Scotland identifies as one of its main objectives that it should ensure that enough people study science to a standard which will enable the future needs of the country to be met. Further, that school science education has two important objectives; to lay the foundations for the development of Scotland's future scientists, and to give everyone the skills and confidence to act as informed and questioning citizens in relation to scientific issues.

3. RATIONALE, AIMS AND OBJECTIVES

- 3.1 This Science Strategy provides a framework for supporting and improving science education in East Ayrshire.

- 3.2** East Ayrshire's Local Improvement Objectives aim to continue to develop teachers' skills through CPD, enhance school environments through appropriate allocation of resources and equip pupils with skills, attitudes and expectations necessary to prosper in a changing society.
- 3.3** East Ayrshire Council's Department of Educational and Social Services is fully committed to the values and aims of this strategy.
- 3.4** Schools will use these objectives to help identify their own priorities for development. These will be published through establishment improvement plans.

4. PRINCIPLES

- 4.1** Within East Ayrshire's "Statement of Commitment", the aims of the Authority are to develop excellence in education in education and improve opportunities for all through Quality, Equality, Access and Partnership.

This paper also recognises the contribution which the following organisations make to supporting science education:

- L T Scotland (Improving Science Education 5 – 14).
- HMIE (Assessment of Achievement Programme).
- Scottish Science Advisory Group.
- Scottish Schools Equipment Research Centre.
- Scottish Qualifications Authority.
- Glasgow University (Department of Curricular Studies).
- Strathclyde University (Faculty of Education).
- Institute for Science Education in Scotland.

The objectives of the national strategy are:

- To maintain a strong science base fully connected to UK and international activity and funding sources
- To increase the effective exploitation of scientific research to grow strong Scottish businesses and provide cutting edge science to meet the needs of the people of Scotland
- To ensure that enough people study science to a standard which will enable the future needs of the country to be met
- To promote the awareness, appreciation and understanding of science across society
- To ensure the effective use of scientific evidence in policy formulation and resource allocation by government.

Within objective 3 the aims are twofold: to secure very high levels of achievement by those specialising in science, and to ensure that all learners acquire the capacity to cope as citizens and decision makers when dealing with scientific issues; further, to support the training and employment of additional science teachers and initiatives to ensure high quality updating of their skills; to work to ensure the development of materials, accommodation, resources and

assessment of school science; and to organise an international conference of science educators to consider innovative approaches at all stages of education.

5. SCIENCE EDUCATION IN EAST AYRSHIRE

5.1 The Authority will address the priorities outlined in Annex B of SEED's letter of April 2003, regarding additional funding to support Science education:

- i) To support the teaching of science in primary schools, including CPD.
- ii) To support initiatives to provide teachers of science with high quality professional updating.
- iii) To facilitate improvement in provision of resources and accommodation.
- iv) To continue to offer support in the revised 5-14 curriculum, and SCHOLAR and CASE.
- v) To pursue opportunities for the provision of events linked to promoting science, particularly as a career.

A Working Group will be established to:

- i) Determine how the Authority will advance science education within National Priorities through the creation of a science strategy.
- ii) Advise on allocation and distribution of finance and resources.
- iii) Monitor and evaluate science education in East Ayrshire.

5.2 Science Education in Schools

Within the above context, schools will develop science education as follows:

- i) Pre-school establishments teach science within the area of "Knowledge and Understanding of the World."
- ii) Primary schools deliver science education as part of their environmental studies curriculum.
- iii) In the Secondary sector, science courses are provided to all pupils in S1/S2 and the revised National Qualifications encourage a more flexible and innovative provision for all pupils from S3 to S6.

6. STRATEGY MANAGEMENT

6.1 The success of the science strategy depends on partnership and liaison between the Department of Educational and Social Services, educational establishments, national bodies and professional organisations.

6.2 Within the Department of Educational and Social Services, the Head of Service: Schools Support, through the Principal, Quality Improvement, will have responsibility for the overall management of the strategy.

6.3 Heads of establishment and teaching staff will manage science education and learning and teaching within the curriculum, including the allocation of resources to support effective learning.

6.4 Each school should have a science co-ordinator, who is a member of the Senior Management Team.

7. STAFF DEVELOPMENT

7.1 Establishments should ensure that staff development, In-Service training and CPD are identified to meet the needs of science education.

7.2 Staff development relating to science education must be relevant to priorities identified within the Department's Annual Statement of Improvement Objectives and within establishment Improvement Plans.

8. ROLES AND RESPONSIBILITIES IN SCIENCE EDUCATION

8.1 The Department of Educational and Social Services will:

- Ensure that a member of the Quality Improvement Team has responsibility for science education.
- Ensure that the Department has a planned and coordinated approach to science education.
- Provide a forum for science education coordinators to meet and discuss issues.
- Provide staff development opportunities in science education.
- Provide support for schools in implementing national developments.
- Liaise with outside agencies to update schools on developments and priorities.
- Encourage and disseminate good practice.
- Continue to develop effective partnerships with key agencies.
- Monitor and evaluate the provision of science education.

8.2 Schools will:

- Produce a school policy on science education
- Ensure that responsibility for science education is allocated to a named member of the senior management team
- Ensure science departments in Secondary schools have departmental handbooks
- Work with appropriate national bodies, including Careers Scotland, teaching staff and parents to ensure that opportunities for science as a career are made known to all pupils.
- Ensure that boys and girls receive equal access to all science courses, and that issues of inclusion and equality are addressed in course content and choice.
- Encourage use of investigative skills, critical thinking, and problem solving within the science curriculum.

9. MONITORING AND EVALUATION

9.1 Monitoring and evaluation of the impact of science education will be carried out through a systematic, rigorous and targeted approach using How Good Is our School 2. The Working Group will contribute to this.

Science Strategy developed: June 2004

To be reviewed: June 2005

10. POLICY/LEGAL IMPLICATIONS

10.1 Nil

11. FINANCIAL IMPLICATIONS

11.1 The costs associated with this initiative will be met by an allocation of funds (£75,000) from the Scottish Executive, and within mainstream funding to schools by the authority.

The additional funds have been provided in 2004-05 by the Scottish Executive and these will be allocated as follows:

Additional Resources allocated to schools:	£45,000
Continuing Professional Development:	£30,000

12. RECOMMENDATIONS

12.1 It is recommended that Members:

- (i) approve this strategy to support and develop science education; and
- (ii) otherwise note the contents of this report

John Mulgrew
Executive Director of Educational and Social Services

DF/MR
05/05/04

LIST OF BACKGROUND PAPERS

1. A Science Strategy for Scotland (Scottish Executive 2001)
2. East Ayrshire's Priorities to Improvement (2003)
3. East Ayrshire's Priorities to Improvement (2004)
4. SEED's letter of April 2003 "Additional Funding to Support Science Education Third Tranche"
5. East Ayrshire Education Committee paper " Science Strategy" of 27 May 2003
6. Head of Service's (Quality Improvement) letter "Funding in Support of Science Strategy" to schools of 2 June 2003
7. Letter entitled "Grants for Improvements in School Education (Scotland) Regulations 1998 – Further Funding to Support Science Education, Scottish Executive Education Department, April 2004

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