

## The Highland Council

Education, Children and Adult Services Committee – 28th August  
2014

Agenda Item	19
Report No	ECAS 36/14

### Highland Science Academy – Potential Educational Benefits

#### Report by Director of Care & Learning

##### Summary

This report sets out the potential educational benefits of a Highland Science Academy.

## 1. Background

- 1.1 The Scottish Government's Science and Engineering Education Advisory Group, (SEEAG), produced a report in January 2012 outlining a number of recommendations to strengthen Scotland's STEM culture and base.
- 1.2 The Government produced a response to the report in October 2012 outlining 4 key areas for action:
  1. "We need to have a teacher workforce which is skilled and confident in delivering stimulating science learning, acknowledging there is a particular need to address support for primary teachers, who are often non-specialists in the STEM(Science, Technology, Engineering and Maths) subjects. There are a range of levers here, including subject-specific CPD and appropriate support materials for teachers. In addition, there is an exciting opportunity to harness existing expertise and experience to build and develop Professional Learning Communities."
  2. "Learners need to continue to have the opportunity to study a range of inspiring, up-to-date science within Curriculum for Excellence, with opportunities to experience practical science and interdisciplinary links across the STEM subjects and beyond. We are keen to maintain the existing interest and good attainment in science and maths, evidenced through high uptake and pass rates in National Qualifications."
  3. "There are a range of STEM companies and organisations offering a positive contribution to both formal and informal science learning. However, there is a need for a better understanding of the various initiatives which currently exist, and co-ordination between them. Teachers need a clearer picture of the support which is on offer, to help build their planning, and adults and families need to be aware of the local and national opportunities to engage with science."
  4. "There is a long-term social and economic imperative to ensure that Scotland's young people engage with STEM. They need to have opportunities to establish a strong grounding in the STEM subjects, and opportunities to build their awareness of STEM-related careers. Industry engagement with young people is required, to enable them to see the relevant career pathways, and to want to pursue them."

### 1.3 Wood Report June 2014 Recommendations Senior Phase Vocational Pathways

1.3.1 Recommendation 1: Pathways should start in the senior phase which lead to the delivery of industry recognised vocational qualifications alongside academic qualifications. These pathways should be developed and delivered in partnership with colleges and, where necessary, other training providers. Their delivery should be explicitly measured and published alongside other school performance indicators.

1.3.2 Recommendation 12: A focus on STEM should sit at the heart of the development of Scotland's Young Workforce.

### 1.4 Business and Industry Partnerships with Schools

1.4.1 Recommendation 15: Businesses across Scotland should be encouraged and supported to enter into 3-5 year partnerships with secondary schools. Every secondary school in Scotland and its feeder primaries should be supported by at least one business in a long-term partnership.

### 1.5 Other Information

- There is evidence that the numbers taking STEM subjects in Highland schools is declining.
- There is evidence that local STEM employers struggle to recruit locally.
- Local initiatives such as Bridge to Employment with Lifescan have enhanced pupils understanding and awareness of opportunities in the STEM sector.

1.6 From these national and local reports it is clear that action needs to be taken to ensure the Highlands and Islands can be an area able to attract and retain the STEM industry sector.

## 2. Educational Benefits

2.1 Setting up the Academy would offer the opportunity to deliver the following educational benefits:

1. It will raise the awareness of pupils, parents and teachers about the current and expected availability and appeal of science, technology, engineering and digital creativity related jobs, including increasing the percentage of placements in STEM industries for work experience.
2. It will offer the potential to increase the numbers and proportion of young people gaining a firm grounding in science, technology, engineering and digital creativity, and pursuing this interest in their career including increasing the percentage of pupils undertaking Science and Technology courses(including AH) and increasing the percentage of pupils undertaking STEM vocational courses.
3. It will develop new forms of delivery, integrating school, FE and HE provision, to meet the needs of employers.
4. It will offer the potential to fully engage employers, employees, communities, parents and teachers in this key area, including supporting the Highland Primary Science and Technologies Framework and the BGE and delivery of National Courses in Secondary schools.
5. It will join up, coordinate and extend the reach of current activities promoting

young people's engagement with science, technology, engineering and digital creativity.

6. It will offer the potential to deliver training to existing teaching, non-teaching staff as well as training student teachers in STEM subjects.
7. It will offer the potential to provide practical and virtual resources for schools.
8. It will offer the potential to reduce gender issues that exist in STEM subjects by delivering activities and opportunities for females in this area.
9. It will offer the opportunity to explore new uses of technology to ensure the benefits of the Academy reaches all part of the Highlands.
10. It will provide the capacity to maximise access to funding sources at a national level
11. It will offer the potential for schools to gain access to high level exploratory resources that otherwise would not be available to pupils.
12. It will offer the potential to introduce pupils to developing technology in the STEM areas.
13. It will offer a great potential for pupils, students and companies to work together on projects which are based in the real world and will deliver benefits to all.

2.2 A Science Academy which sought to achieve these educational objectives would become a focal point, both co-ordinating and delivering activities to the young people of the Highlands. It would also lay the foundations to build strong partnerships between schools, colleges and employers. This would ultimately enhance the long term future prosperity of the Highlands.

### **3. Implications**

- 3.1 Resources: The project will require partners from a variety of sectors to come together to resource the successful implementation of the Science Academy. However at this stage it is difficult to identify detailed resource requirements.
- 3.2 Climate Change/Carbon Clever: This project offers the opportunity to put environmental issues at the heart of its work.
- 3.3 Gaelic: The project will be required to deliver a bilingual approach to its development agenda.
- 3.4 Equality: This project will offer the opportunity to improve the gender issues that exist within the STEM subjects.
- 3.5 Rural: This project will have a key objective of ensuring it delivers across the whole of the Highland area.
- 3.6 There are no Legal and Risk implications associated with this project.

### **4. Recommendation**

- 4.1 Members are asked to note the potential educational benefits of taking this approach.

Designation: Director of Education, Culture and Sport

Date: 18 August 2014