

## SCIENCE SUMMIT – DRAFT ACTION PLAN

<u>Broad area for action</u>	<u>Action proposed</u>
<ul style="list-style-type: none"> <li>• Collaboration across all sectors and disciplines and among authorities and professional bodies to ensure the learning and teaching of science, technology and engineering fulfil the principles of curriculum for excellence:               <ul style="list-style-type: none"> <li>• Challenge and enjoyment</li> <li>• Breadth</li> <li>• Depth</li> <li>• Progression</li> <li>• Personalisation and choice</li> <li>• Coherence</li> <li>• Relevance.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• To establish an advisory group of key partners to advise on the progress of this action plan and to review and update regularly.</li> <li>• To complete a mapping exercise of the priorities and contributions of key stakeholders (including the Royal Society of Edinburgh, the Scottish Science advisory group for local authorities, Learning and Teaching Scotland, higher education interests and the Scottish Council for Development and Industry) to identify how their impact can be harnessed effectively to take forward learning and teaching for 3-18 year olds.</li> <li>• To support LTS and SQA to achieve an integrated approach for the updating of National Qualifications (at Higher and Advanced Higher) and the baccalaureate in the sciences.</li> <li>• To support the RSE, the professional institutes and LTS in the development of illustrations of learning and teaching in science, engineering and technology that reflect the principles of curriculum design from 3-18. This will build on the lessons from the RSE's work with the Royal Institute of Chemists and roll out to others areas, such as physics and biology, engineering and technology.</li> </ul>
<ul style="list-style-type: none"> <li>• Closer partnerships between industry and academia;</li> </ul>	<ul style="list-style-type: none"> <li>• To engage with and support business partners to understand fully the potential of CfE and ensure they understand how they can support its development.</li> <li>• To take forward the outcomes of the “Engineering the Future” project, for example working with LTS and other stake-holders to creatively illustrate</li> </ul>

	<p>how engineering experiences can deliver the Experiences and Outcomes for Technologies and the Sciences.</p> <ul style="list-style-type: none"> <li>• Maximising the potential for school-university collaboration as part of the interdisciplinary project for the Science Baccalaureate.</li> <li>• To work with the Alliance of Sector Skills Councils and other business partners to ensure the learning and teaching of science, technology and engineering reflects the needs of employers and develops in young people the skills needed to succeed in these fields.</li> <li>• To build on partnership work with Entrepreneurial Exchange, Social Enterprise Academy and other entrepreneurial bodies to support the development of enterprising young people and promote business start up as a career option.</li> <li>• To ensure employers in science, engineering and technology related industries are actively involved in learning and teaching to help contextualise and make it more relevant and exciting to life beyond school.</li> <li>• To build on the work of the Determined to Succeed/Learning Teaching Scotland partnership which is supporting inter-disciplinary curriculum developments with the Institute of Engineers, Institute of Architects, SEPA and Opito, the Oil and Gas Academy.</li> </ul>
<ul style="list-style-type: none"> <li>• Improvement in the status and image of science in schools</li> </ul>	<ul style="list-style-type: none"> <li>• To agree and take forward a joint work programme with the Office of the Chief Scientific Adviser to achieve wider and deeper engagement by children and young people in science and technologies.</li> </ul>

	<ul style="list-style-type: none"> <li>• Repeat the science campaign run by OCSA perhaps in conjunction with STEMNET contractors and in parallel with the work of STEM ambassadors in October/November, with an emphasis on S1 and S2 pupils.</li> <li>• Work with Learning and Teaching Scotland to ensure that examples of <b>active learning and teaching</b> are exploited to the full in promoting engagement, interest and excitement in science, engineering and technology 3-18.</li> <li>• Work with Skills Development Scotland to ensure that the careers advice available to young people reflects current and future labour market conditions and includes opportunities in science, engineering and technology, including consideration of self employment and enterprise.</li> <li>• Ensure employers, scientists and engineers are actively involved in learning and teaching to help contextualise and make it more relevant and exciting to life beyond school.</li> <li>• To use the educational press to promote the teaching and learning of science within schools and identify role models who will motivate young people to participate more fully featuring, for example, the opportunities experienced by young people and the approaches taken by motivating teachers.</li> </ul>
<ul style="list-style-type: none"> <li>• Teaching “real-world” science;</li> </ul>	<ul style="list-style-type: none"> <li>• To work with the Scottish Schools Equipment Research Centre (SSERC) and their partners to provide practical “hands on” opportunities for primary teachers that can be easily replicated in the classroom.</li> <li>• Work with Learning and Teaching</li> </ul>

	<p>Scotland, the RSE and other partners to produce a range of media articles on science topics as a classroom discussion aid, supported by a “how to use the press” guide for teachers and staff.</p> <ul style="list-style-type: none"> <li>• Ensure employers are actively involved in learning and teaching to help contextualise and make it more relevant and exciting to life beyond school.</li> <li>• Maximising the benefits from both formal and informal science education, using, for example, the provision of science centres to emphasise the fun, informal and public awareness elements of science education.</li> </ul>
<ul style="list-style-type: none"> <li>• Sharing “good practice” by creating a “one-stop shop” for national initiatives and information resources;</li> </ul>	<ul style="list-style-type: none"> <li>• Use “Glow meet” and related opportunities to provide a coherent source of up-to-date information about current resources that support science, engineering and technology learning.</li> <li>• To work with the local authorities, RSE, HMIE and others to support the development of school and college cluster-based approaches which nurture and share expertise and which promote inspiring learning and teaching of science, engineering and technology within primary and secondary schools.</li> </ul>
<ul style="list-style-type: none"> <li>• Improvement in the provision of Continuing Professional Development and initial teacher education;</li> </ul>	<ul style="list-style-type: none"> <li>• To complete a mapping exercise of CPD available for teachers within primary and secondary sectors and identify how the science institutes, societies and other national bodies can increase support to teachers.</li> <li>• Promote participation in the Excellence in Education through Business Link programme (EEBL) to support relevant business placement CPD opportunities</li> <li>• To promote and develop the DtS/LTS on-line CPD resource which</li> </ul>

	<p>exemplifies employers and teachers working together in a science and technology setting.</p> <ul style="list-style-type: none"> <li>To identify how teachers can best be encouraged to become members of relevant professional bodies and identify other opportunities that will enable science teachers to update their skills within an academic setting.</li> </ul>
<ul style="list-style-type: none"> <li>Better and more creative use of ICT, including the use of the schools' intranet, Glow</li> </ul>	<ul style="list-style-type: none"> <li>Use Glow, not only as a means of sharing good practice between education professionals, but also as a vehicle to demonstrate science investigations that cannot easily be undertaken in the classroom.</li> <li>Work with LTS and others to identify how emerging technologies can best support science, engineering and technology education from 3-18</li> <li>Identify how games and other interactive approaches can raise the profile of, and promote, science, engineering and technology education</li> <li>Work with LTS and Scholar to establish excellent practice in virtual learning environments in science, engineering and technology</li> <li>Use Glow and other technology to enable learning in specialisms in science, engineering and technology to be shared widely, whether for non-specialist and primary staff, or for secondary staff.</li> </ul>
<ul style="list-style-type: none"> <li>Seamless transition from primary to secondary school.</li> </ul>	<ul style="list-style-type: none"> <li>Coherence from 3-18 requires a seamless transition from primary to secondary school for each child. In relation to the learning and teaching of science, engineering and technology, Learning and Teaching Scotland will develop materials, with partners, to illustrate progression, with particular emphasis on</li> </ul>

	<p>supporting effective transitions from primary into secondary as part of the broad general education,</p> <ul style="list-style-type: none"><li>• In addition to preparing young people for success in achieving science qualifications, materials will be produced that will prepare young people to be scientifically literate and able to apply their understanding of the role of science in their world.</li></ul>
--	---