**STEM INQUIRY – TEMPLATE FOR MAKING A SUBMISSION**

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|  **How do you want us to treat your views?**Y☐ I have read and understood the [privacy notice](http://www.scottish.parliament.uk/Privacy-Notice/CommitteeOfficeEvidenceSubmissionV3.pdf) about submitting evidence to a Committee.Y☐**I am happy for my name to be on the submission**, for it to be published on the Scottish Parliament website, mentioned in any Committee report and form part of the public record ***[The National Parent Forum of Scotland]***Non-standard submissions☐ (YES)**I wish to make an anonymous submission -** but am happy for it to be published on the Scottish Parliament website, mentioned in any Committee report and form part of the public record on an anonymous basis Y☐**I would be willing to come and share my views in person** at a Committee meeting at the Scottish Parliament (reasonable expenses can be reimbursed).**Please see below for the format to send in your submission** |

 **EDUCATION AND SKILLS COMMITTEE**

**STEM INQUIRY**

**SUBMISSION FROM [The National Parent Forum of Scotland]**

The National Parent Forum of Scotland (NPFS) welcomes the opportunity to provide the Education and Skills Committee with evidence for their inquiry into the STEM experiences of 3 to 7 year olds in early learning and childcare settings and schools.

The NPFS is a volunteer led organisation. We work in partnership with national and local government and other organisations involved in education and child wellbeing issues to ensure that parents play a full and equal role in education. When parents are involved in their children’s learning, it benefits children, families and schools: children do better. NPFS is a member of the STEM National Advisory Group, Making Maths Count Expert Group and the Interdisciplinary Learning National Strategic Group. We believe it is vital that the parental voice is heard in these discussions as parental influence in the learner journey is huge.

Parental and family engagement programmes build STEM capital. Many parents told us of fun family learning opportunities in their school. In particular, several parents told us they welcomed the opportunity of engaging their child with STEM in accessible and inclusive ways they could replicate at home.

Parents have told us about a wealth of great initiatives, both locally and nationally. Many parents were aware of Maths Week Scotland events that took place in September 2018 and felt that younger children were engaged in this too. Several parents said they had spoken to nursery and school classes about the importance of maths in their jobs. The numeracy activities in the Read, Write, Count bags for P2s and P3s were also highlighted as a fun way to involve the family in maths activities for these children. Parents found the games involving money a very accessible way to engage with their child's numeracy learning.

Science themed weeks are popular in schools and provide opportunities to spark children's interests in areas of STEM, often also involving nursery children. Again, they can be a great way of engaging families, for example a parent said their school had a ‘science showcase’ for parents where the children demonstrated their learning. Social media and digital technologies can be used effectively to engage parents in these events and every day STEM learning.

Outdoor play-based learning is a great way to promote good STEM education. Many parents now appreciate the value of both play-based and outdoor learning and we are heartened that there are to be two new CPD online modules on STEM and outdoor learning. However, many parents still need to learn more about how play-based learning works. Our schools and nurseries are working against a tide of negative national press that bemoans literacy and numeracy standards; parents need to hear how these forms of learning help children acquire skills in an appropriate and engaging manner. In addition, outdoor learning must not exclude families who cannot afford appropriate clothing. We hope all learning settings provide waterproofs and warm clothing for their children as standard within the 1,140 hours roll out.

Some parents told us they were unaware that their young child was participating in STEM learning but, on further discussion, it emerged that it was just not overtly described as STEM.

We have heard some primary teachers say they do not feel they have the confidence to teach every area of STEM. This is an ideal opportunity to involve the parents with this skill set, and they would usually know what will appeal to the interest of their child and their peers. If all schools worked better with their entire community, which includes parents and relevant local businesses, it could counteract the gaps in teacher knowledge and experience. We hope the new STEM Awards will inspire schools and early learning and childcare settings to recognise and build on such activities in these sectors.

Parents living more rurally often felt that their children were not given the same STEM learning experiences as those living in urban areas. Opportunities such as citizen science events, industry visits, science centres and festivals that are promoted to those living in urban areas are often out of reach both geographically and financially, for those living on the islands for example. The STEM ambassador programme is generally fantastic but as it relies on volunteers the quality can vary, and again rural communities can suffer if there is nobody in the area. It would be good if there was a way of targeting schools that have never requested an ambassador, to ensure an equitable approach. Similarly, it is fantastic to see the Regional STEM advisors working with RAiSE primary science leads. We need to ensure that these lead teachers share their knowledge with others throughout the school, so it can be integrated into the curriculum as a whole.

STEM learning is no different from any other learning in one way: when parents are engaged the children do better. However, STEM subjects are perceived in different ways by different families and gender stereotypes in particular can come into play. Schools and early years settings should work collaboratively with their parents to better understand their needs and aspirations in relation to STEM and to involve them in STEM planning, events and activities.

It is important to consider the ongoing development of STEM as children progress. Unfortunately, many parents of older children say that the enjoyment of STEM based subjects, especially Maths, seems to wane as their children progress up the school. While their children enjoyed the play-based learning at early level and the interdisciplinary learning that is commonplace in primary settings, the transition to more traditional learning in secondary schools has not engaged their child well. Parents also do not feel as engaged in STEM within this stage of the learner journey. Parents frequently tell us that they struggle to understand the syllabus of STEM subjects so are unable to support their child. Recently, one parent told us about an initiative where S1 parents could attend school to experience the entire curriculum for a week, they felt this helped them understand the learning. Similarly initiatives are springing up where parents sit National 5 maths alongside their child, gaining important skills, while also engaging with their child’s learning.

We need to ensure children, young people and adults are encouraged to develop an interest and enthusiasm for STEM that is reinforced throughout their lives. For children to be truly inspired to study STEM subjects when they are older, and ultimately follow those career paths, the encouragement needs to be wider than only the school. We know parents have a significant impact on learning and career decisions so they must understand the benefits and value of STEM too. We are pleased to be working with Skills Development Scotland on an accessible guide on STEM for parents and with Education Scotland on new STEM content for the Parentzone Scotland website.

There are certainly pockets of excellent practice in Scotland and the National Improvement Framework Hub could be used to share much of this. The Regional Improvement Collaboratives should hopefully help to break down the barriers between local authorities and allow for more collaboration across schools.

It is also important to consider the importance of creativity within STEM subjects. Many perceive the two to be mutually exclusive, but this is very far from the truth. Creativity is not just about the arts and drama; it is vital within STEM subjects and industries too.