

**Lisa Moss and Dr Thomas Bernard co-founders of children's STEM focussed publishing company QuestFriendz discuss how important early STEM learning is for young children.**

Supporting children to develop STEM (Science, Technology, Engineering, Mathematics) skills, including critical thinking and computational skills has never been more important. As technology continues to evolve and changes the work landscape, it's imperative that children are provided with opportunities to develop core skills in these key areas.



Not only do STEM skills equip children with a transferrable skillset, but they also help them to develop a love of learning and a sense of curiosity, promoting self-esteem as children learn how to problem-solve and view failure as part of the learning process.

We believe that initiatives to develop and nurture these new STEM skills needs to start at an early age (and across gender and diverse ethnicities) to help ensure that the next generation are well equipped.

Fostering STEM skills development and nurturing of 21<sup>st</sup> Century Learning skills from a young age is key as a longer term, systematic approach to address the STEM skills gap. Addressing young children allows us to harness their natural curiosity, which is a magical state of mind that supercharges learning including STEM learning. With the introduction of problem-solving skills, and learning to fail from a young age, children are better equipped to face a fast-pace changing world.

In order to help make young people more aware of the importance of STEM, the main influencers in their lives – their parents and teachers/educators – need to understand what STEM actually is, what STEM learning entails and why it's important. For most, STEM is a buzz word in an already crowded educational space. Parents and educators must understand that STEM learning is about developing higher order skills which are transferrable across disciplines.



This needs to extend to helping parents, educators and children to understand more about STEM careers and the diverse types of STEM jobs/roles that exist today and are expected to exist in the future. This would entail training to help see beyond the traditional STEM roles of engineer, scientist, doctor to show just how vast and diverse STEM roles can be these days e.g. a ballerina and robotics engineer, a fashion and science/tech innovator, lawyers working in fintech, etc. The options are endless and the routes to get there can be very diverse. Understanding that there are many ways to reach a STEM career also helps. One third of parents and teachers inaccurately perceive STEM discipline as more closely fitting boys' brains, personalities and hobbies. *From the 'Accenture Girls in STEM 2017 report'*

Everyone possesses the potential to develop STEM skills – it's about getting children interested and involved in STEM learning from a young age and helping them to develop and hone these skills over time so they can unlock their potential in this area. Starting young helps to build confidence over

time which becomes even more important in the critical teenage years when many teenage girls and minorities often start to doubt their abilities, limit themselves and set barriers. One of the biggest challenges will be making sure the STEM framework and clear/relevant standards are included in the educational systems, and that teachers from pre-school onwards understand and are equipped to teach STEM and 21<sup>st</sup> century learning skills. A revamp of traditional educational systems is critical to success, in order to equip the next generation to be ready to take on the challenges in the future workplace. There is also currently a challenge in finding sufficient teachers with the correct understanding and ability to apply STEM learning to the youngest years.

Another big challenge is to decouple the societal biases between STEM jobs and their relation to gender. This is unfortunately a big blocker for young children to visualize themselves in STEM careers. For example, a young deaf boy can become a world-class rocket scientist. A young ballerina can become a biochemist working on a new vaccine while continuing her love of dance at the same time. This has to change beyond the stereotype of the white male representation in successful STEM jobs.

And with the increasing role that technology, including computer science, big data, robotics, artificial intelligence is playing we need children of all backgrounds to see that they can have a role to play and are equipped to create and shape new inclusive technological advancements in the future.

However, stereotypes and messages are still being passed on (both intentionally and unintentionally) to young people in school, in their home lives and through the media. There is a responsibility for parents/teachers/education and government to address this gender gap and the stereotypes associated with it, this includes the role the media plays and as co-founders of QuestFriendz (a STEM focussed children's publishing company) we believe all children should be given an opportunity to see that STEM learning is inclusive and accessible. A younger generation of children need to be provided with educational tools and guidance to encourage them to engage with STEM subjects regardless of gender, ethnicity, disabilities or socioeconomic background.

SuperQuesters: The Case of the Stolen Sun RRP  
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