

FOCUS ON...

Change is coming – or should that be, change has come and we are living in its wake? – with the new curricula that have appeared in recent years, not least that in England, which is the latest change in the UK. Change is generally a good thing, even though it brings its challenges and might sometimes appear to be ‘change for change’s sake’. Whatever the reason for the change, we should always be thinking critically about how it can help us make progress. The recent CBI report *Tomorrow’s world: Inspiring primary scientists* (CBI, 2015) urges us to take note that the UK is still in need of people with skills in the fields of science, technology, engineering and mathematics (STEM), and that influencing children from the primary stage is crucial to meeting this need. This is a change that would be good, purposeful and that we need to make. Do the recent changes made to our education systems ensure that this will happen?

The UK is not alone in noting that it needs more workers with STEM-related interests and skills. In 2014, the US government invested \$3.1 billion in STEM programmes, as it projects that it will need 8.65 million workers with these skills, with 7.1 million of them being in one of the fastest growing fields: ‘cloud computing’ (LiveScience, 2014). The need for STEM graduates, apprentices and technical support is a global issue and one that we need to start addressing in our own schools rather than waiting for a policy or diktat to come along. This is not about governments and in many ways is not even about business – it is about each and every one of our young people being STEM literate and able to engage with, and cope in, the world around them in as full a way as possible.

So what are we doing to ensure that we play our part? Getting children interested in these subjects is probably the first port of call, which is why *Primary Science* is trialling something new – have a look at our centre pages. Having subject leaders in place is

another obvious starting point. The Primary Science Quality Mark (PSQM) process (see end) helps to drive forwards development and support subject leaders of all levels. We can describe, explore and illustrate the real applications of the STEM subjects in the world around us. Linking the theory and skills of science with the practical applications of technology, engineering and analysing data supports the development of real scientific skills.

A STEM approach is not just about producing ‘scientists’: it involves a focus on learners who can think and apply their learning in a real-world context, and their ability to be curious and ask questions about the world around them. At what age should we start?



Thinking of a STEM approach as a way of life, rather than a collection of subjects to be put together, means we should start at home, not just when a child reaches school age.

Encouraging children to explore nature as toddlers, to ‘play’ at construction with natural materials, and to explore their home environment all supports STEM skills. Many parents will have experienced their child carrying out these activities, even if at the time it seems as if they are just producing a ‘mess’! Indeed, if you consider the range of subjects encompassed within STEM, there is not much in life that isn’t touched by them. For example, science covers most of the medical industry; engineering covers the construction and automotive industries; maths the entire economy; and technology, one of the fastest growing areas, much of the rest of our lives.

So having developed children who can think, ask questions and apply learning, there needs to be a context and to make this real, bringing in industry to the classroom is next. This is a prompt for us to review, refresh and dust down our thinking about ‘why science?’ and ‘why STEM?’ and ask *What can I do this academic year that can make a positive change towards developing children fit for a STEM-literate future?* Let’s not fear the next change; let’s create it ourselves or, if it is thrust upon us, embrace the change and make it our own, with a clear vision of what we want it to promote. Read on to find out how others have worked to influence change and development in their classrooms.

References

- CBI (2015) *Tomorrow’s world: Inspiring primary scientists*. CBI. Available at: www.cbi.org.uk/tomorrows-world/assets/download.pdf
- LiveScience (2014) *What is STEM education?* Available at: www.livescience.com/43296-what-is-stem-education.html
- PSQM (Primary Science Quality Mark): www.psqm.org.uk