Science provides foundations for people to understand what is happening around them, supplies information for developments to be made and explain why things happen. Science, as a subject, is intrinsically fascinating to children and involves them in exploration and ‘finding out’ for themselves. (Farmery, 2002: 13)

The research
As a science and early years specialist, I often wondered how early years and science can be combined. Where is the place of science within the Early Years Foundation Stage (EYFS) in English schools? Through observations and my own teaching, I have witnessed children exploring science topics through making predictions, using their senses and investigating materials and their properties. Science is a core subject once children reach formal primary education and I considered whether, for consistent learning to occur, more emphasis should be placed on science as an individual ‘subject’ within the early learning goals and guidance, rather than being traditionally taught through the strand of ‘Knowledge and Understanding of the World’ (KUW).

The first part of my research involved finding out where early years teachers thought science fits within the EYFS guidance. I compiled a questionnaire (Box 1) in an effort to discover teachers’ views and to understand how they believe science is currently taught. All participants in the
study identified that science is taught through the KUW strand. However, some participants acknowledged that science can (and should!) be taught through all strands.

**Teacher confidence**
The main finding from this research was that a great deal of value is placed on science in the Foundation Stage. It is almost assured, as the curriculum in the science with other subjects is almost always highlighted by the need for certain subject knowledge in various areas of science. This includes science!

**Value of science**
When asked about the value of teaching science, participants’ views centred round children gaining ‘an understanding of the world around them’, meaning science education is crucial to be able to challenge and develop these ideas. One particular view stated that it allows children to be creative and inquisitive and to find things out for themselves (Figure 2). It gives them more confidence and knowledge and much more about the skills for finding out more about the world around them. The Department for Education (DfE) states:

The tests cover the core skills that teachers need to fulfil their wider professional role in schools, rather than the subject knowledge required for teaching. This is to ensure all teachers are competent in numeracy and literacy, regardless of their specialism. (DfE, 2012)

However, as the current curriculum requirements in England state that children should achieve a secure level 4 by the end of their primary education in all the core subjects, is it not part of the DfE’s role to ensure that teachers have secure subject knowledge in all these core subjects? This includes science!

**Box 1 Questions from the questionnaire**
- In your opinion, how important is it to teach science?
- What do children gain from science education?
- On a scale of 1 to 5, how confident are you at teaching science? Please give reasons where possible.
- Which areas of learning do you think science is taught through?
- In your opinion, should science be an individual area of learning or should it be taught through the other areas? Why?
self-esteem and the motivation for learning. Creativity and inquisitiveness are two traits that the EYFS should be instilling in children and if these can be gained from one strong area of learning, this should be positively encouraged.

The views identified here are perhaps unsurprising and draw upon issues that we know to be endemic in teaching science in the early years and primary age phases. The conclusions that stem from this work are modest, but they do reflect my own commitment to becoming as effective a science teacher as I can and they are realistic.

**My conclusions**

Young children, with their natural inquisitiveness, would benefit from exploratory play in scientific areas, to provide a good basis for future learning. To achieve this, we need to allow more time for scientific learning in the early years. The EYFS guidance needs to give specific scientific targets, to encourage development.

Young children’s willingness to learn and explore should be encouraged. Scientific learning does not have to occur in a structured setting or activity. Children create their own experiments and answer their own questions (Figure 3). However, if children are to meet the early learning goals, the targets should be tailored to encourage scientific achievements, allowing them to be recorded and the appropriate progress into key stage 1 at age 5 to be made.

Placing a higher focus on individual subjects within the EYFS guidance would provide teachers with more structured targets. This does not mean that learning and teaching cannot take place in a cross-curricular manner, but the subjects need to be more defined in order for assessments to be made and for correlation with the National Curriculum.

To provide strong foundations for future learning in a core subject, there should be more explicit guidelines for what children need to learn and achieve in the EYFS. The guidelines should also have strong links to the current National Curriculum so that there can be a smooth transition and children can reach their full potential in all subjects.

**References**

DfE (2012) *QTS skills test*. Available at: www.education.gov.uk/schools/careers/traininganddevelopment/qts/b00204001/qts-tests


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