

## Supporting primary schools to meet the needs of pupils and staff

STEM Learning welcomes the publication of Ofsted's [Finding the optimum: the science subject report](#) – based on the evidence from its routine inspections.

Our role is to support all schools (and staff) on their journey – recognising their individual school contexts and helping them to meet the specific needs of their pupils and staff. The report contains several findings and recommendations, many of which are linked to curriculum, pedagogy and assessment and systems at subject and school level. We have listed some of these below, along with CPD and/or resources we can offer to address these needs. We are confident that our offer will continue to support teacher development and improve student outcomes.

<b>Curriculum</b>	<b>Consider how the curriculum in Reception supports learning science in Y1</b>	<p>"In most primary schools, leaders had considered how the curriculum in Reception supported pupils to learn science in Year 1."</p> <p>"This required leaders to have a clear understanding of the key vocabulary and concepts that they wanted children to learn, and the scientific phenomena that they wanted children to encounter and learn about."</p>	<p><a href="#">Making an impact using the outdoors to promote an understanding of the World.</a></p> <p><a href="#">Developing and leading excellence in the early years foundation stage.</a></p> <p><a href="#">A Science subject leaders guide to developing good practice</a></p> <p><a href="#">Teaching EYFS Science</a></p>	<p>RP029</p> <p>NY012</p> <p>RP028</p> <p>RX001</p>
	<b>Content is sequenced in a logical order.</b>	<p>"Where curriculum thinking was strong, leaders identified clearly what they wanted pupils to know and do, and then selected the best activity to teach it".</p>	<p><a href="#">Leading and developing excellence in KS1</a></p> <p><a href="#">Teaching KS1 Science</a></p> <p><a href="#">Leading and developing excellence in lower KS2</a></p> <p><a href="#">Teaching Lower KS2 Science</a></p> <p><a href="#">Leading and developing excellence in lower KS2</a></p> <p><a href="#">Teaching Upper KS2 Science</a></p>	<p>NY055</p> <p>RX002</p> <p>NY056</p> <p>RX003</p> <p>NY057</p> <p>RX004</p>
	<b>A high-quality curriculum includes disciplinary knowledge.</b>	<p>"leaders' plans to develop pupils' knowledge of working scientifically were typically much less developed than their plans to develop pupils' knowledge of substantive scientific concepts"</p> <p>"Where curriculums were strong, leaders clearly identified the disciplinary knowledge that pupils needed in order to develop their understanding of these practices."</p>	<p><a href="#">Introduction to Working Scientifically</a></p> <p><a href="#">Leading and embedding working scientifically in the primary science curriculum</a></p> <p><a href="#">Developing Working Scientifically outside the classroom</a></p> <p><a href="#">Teaching primary science outdoors</a></p> <p><a href="#">Developing pupil led investigations</a></p>	<p>RP024</p> <p>NY030</p> <p>RP025</p> <p>NY009</p> <p>RP026</p>
	<b>Specific barriers to learning science - misconceptions</b>	<p>"leaders generally identified the specific misconceptions and difficulties that pupils were likely to have. Teachers could then address these in lessons."</p>	<p><a href="#">Engaging science in KS1</a></p> <p><a href="#">Engaging science in KS2</a></p>	<p>RP182</p> <p>RP183</p>

**Pedagogy and assessment**

**Supporting all pupils to learn science**

"Pupils with SEND were generally well supported in science lessons and were expected to learn the same curriculum as their peers."

[Leading science in a special educational needs setting](#)

RP177

[Leading and developing an inclusive primary science curriculum for pupils with SEND](#)

NY043

**Assessment – building on firm foundations**

"Generally, assessment in science did not check whether pupils had remembered what they had learned in previous years."

[Assessment in primary science](#)

RP102

[Leading assessment, moderation and tracking in primary science](#)

NY032

[Raising attainment in Primary Science](#)

RP103

**Systems at subject and school level**

**Prioritise curriculum time**

science is a core subject of the national curriculum, and pupils benefit from regular opportunities to revisit and build on their knowledge so that it is not forgotten.

[Developing your primary science curriculum using the Ofsted framework](#)

RP184

**Develop the science expertise of staff and leaders**

Subject leadership plays a crucial role in the quality of school science. This is because, among other roles, subject leaders develop the school science curriculum and support teachers to teach it. However, research suggests that subject leaders do not always have sufficient leadership time to lead their subject. They may also lack the necessary subject expertise.

[Help! How do I lead primary Science?](#)

RP030 / NY076

[Primary science subject leaders' network](#)

RP121

**CPD should be a part of an ongoing programme of professional development, not standalone**

"Despite teachers valuing the CPD that they received, in many schools teachers did not have access to a high-quality ongoing programme of professional development to improve their subject and pedagogical content knowledge. This was because there was no clear plan for how teachers would develop their expertise over time. Instead, there was an over-reliance on stand-alone training sessions, which often restricted CPD in science to learning about practical work. Our findings suggest that there needs to be a much greater focus on developing teachers' expertise in relation to specific areas of the science curriculum and engaging with science-specific research."

Our CPD supports teachers as they progress through different stages of expertise and experience:

- [Early career teachers](#)
- [Experienced teachers](#)
- [Subject leaders](#)
- [Non-specialist teachers](#)

**Science leaders need time to engage with local networks and should receive subject-specific training**

"Where science leaders were well supported by senior leaders, they had dedicated time to attend local authority or trust meetings as well as external CPD. This allowed them to look beyond their own school. In some schools, leaders were supported to undertake leadership qualifications, such as the national professional qualification for middle leadership, and experience dedicated coaching and mentoring. However, very few science leaders received dedicated subject-specific support to lead a science department."

[Primary science subject leaders' network](#)

RP121

Also see [Primary Science Quality Mark](#) and [Primary science teacher awards](#)