



## Supporting Learners with SEND in Science

### Maintaining an inclusive learning environment

- Carefully consider the classroom – can all learners access the environment? Consider learners with sensory impairments and physical disabilities.
- It is important for each lesson to follow on from prior learning, this can be both from the lesson before, or the academic year before.
- Identify possible misconceptions that learners may have, and plan for how you will address these in the lesson.
- Create opportunities to pre-teach, providing some learners with the opportunity to learn new vocabulary and concepts in advance of a lesson in a small group setting.
- Pre-teaching opportunities can also support learners who struggle with transitions or engaging in whole class teaching sessions, as it can prepare them for the learning and practical elements, they are likely to experience in a lesson.
- Meticulously plan, and always test practical experiments before the lesson.
- Use your practice to create step-by-step instructions, which you can then modify with visuals and/or more precise steps for learners needing additional guidance.
- Make sure learners understand the purpose of each step and that they can link scientific content to what they are doing.
- The instructions can also be useful for additional adults supporting the lesson, giving them increased confidence when supporting the learning.

## Curriculum Considerations

### EYFS

- ‘Understanding the World’ area of the EYFS Curriculum is introduced indirectly through activities that encourage every child to explore, problem solve, observe, predict, think, make decisions and talk about the world around them.

### Key Stage 1

- Key Stage 1 learners should regularly experience first-hand practical activities to explore and spark their interest for the topic
- Scientific enquiry weaves throughout the whole of the Key Stage 1 curriculum, so practical activities should be considered which support and develop their understanding of scientific ideas.
- Secondary sources such as books, photos, videos and simulations should be used to help children and young people learn and make sense of the scientific content.

### Key Stage 2

- In lower Key Stage 2, learners should now be encouraged to broaden their scientific view of the world around them through exploration, discussion, testing and developing ideas.
- In upper Key Stage 2, learners begin to learn about more abstract concepts which support learners in comprehending and predicting how the world around them works.
- Learners should continue to build on the foundational skills of exploration and talking about their ideas; asking their own questions; analysing functions, becoming methodical when identifying relationships and interactions

### Strategies to Support Learners with SEND

#### Supporting learners who struggle to access lessons because of literacy difficulties.

- Provide topical word banks and picture cards that the learner can point or refer to when explaining scientific processes.
- Ask teaching assistants to collate word/picture banks on a mini whiteboard/paper with the learner during the teaching input to support their independent learning activity.

	<ul style="list-style-type: none"> <li>• Scaffold learning to make it accessible for all, e.g., if writing up the method for their experiment, a learner with writing difficulties could verbally explain for you or a teaching assistant to scribe, note-take or film explaining their answers.</li> </ul>
<b>Supporting learners who struggle to access lessons because of numeracy difficulties.</b>	<ul style="list-style-type: none"> <li>• Scaffold learning to make it accessible for all, e.g., when creating data tables for an experiment, learners with numeracy difficulties could create a pictogram.</li> <li>• Employ manipulatives and resources used in maths lessons to support learning in science.</li> <li>• Bring abstract concepts to life through concrete resources and comparisons.</li> </ul>
<b>Supporting learners who struggle to retain vocabulary.</b>	<ul style="list-style-type: none"> <li>• Begin each lesson with a review of the vocabulary learnt in the previous lesson.</li> <li>• Provide word banks that are accessible throughout the science topic. Encourage learners to tick the words they feel confident with to help target language that still needs support, e.g., when learners can independently use a word in a sentence. This could also encourage and motivate the learner to use language they have yet to use.</li> <li>• Refer to language regularly during lessons and, where applicable, throughout the school day, as this will embed the vocabulary and build stronger links and associations.</li> </ul>
<b>Supporting learners who need additional time to develop conceptual understanding.</b>	<ul style="list-style-type: none"> <li>• Provide pre-teaching opportunities for learners to hear vocabulary prior to the lesson, to support their access and engagement in whole-class teaching.</li> </ul>

	<ul style="list-style-type: none"> <li>• Plan small group teaching opportunities, for example whilst learners who have already met an objective are doing enrichment activities independently, dedicate time to conference with and/or provide additional learning opportunities for learners working towards the learning objective.</li> <li>• Provide learners with worked examples to use as a model whilst completing independent work.</li> </ul>
<p><b>Supporting learners who struggle with attention.</b></p>	<ul style="list-style-type: none"> <li>• Create a working classroom environment that is calming and simple, e.g., clear routines, organised workspaces.</li> <li>• Use preferential seating and proximity to engage all learners – have learners who struggle to concentrate at the front of the class, or plan for a teaching assistant to encourage the learner to participate and maintain focus.</li> <li>• Pre-expose learners to the equipment and nature of the lesson (especially for experiments and practical lessons) to spark engagement and interest in the upcoming lesson.</li> <li>• Plan movement breaks and classroom jobs (e.g., handing out materials) for individual learners.</li> </ul>
<p><b>Supporting learners who struggle with change and transition.</b></p>	<ul style="list-style-type: none"> <li>• Science doesn't always follow the same lesson format and structure, so prepare learners in advance by explaining how the lesson will run.</li> <li>• Use visuals (e.g., now, next, then boards or visual timetables) to segment the lesson into manageable chunks that are achievable for the learner.</li> </ul>

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|  | <ul style="list-style-type: none"><li>• Think about the individual learner – some learners may be highly motivated if they know something in advance of a lesson. Show them an object, or picture about the lesson etc.</li></ul> |
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