

Strategies to Scaffold Learning

How can I support 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.
- 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.

How can I support learners who struggle to access lessons because of numeracy difficulties?

- 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.
- Employ manipulatives and resources used in maths lessons to support learning in science.
- Bring abstract concepts to life through concrete resources and comparisons.

How can I support learners who struggle to retain vocabulary?

- Begin each lesson with a review of the vocabulary learnt in the previous lesson.
- 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.
- 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.



How can I support learners who need additional time to develop conceptual understanding?

- Provide pre-teaching opportunities for learners to hear vocabulary prior to the lesson, to support their access and engagement in whole-class teaching.
- 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.
- Provide learners with worked examples to use as a model whilst completing independent work.

Progression of scientific knowledge across Key Stages: Electricity

Early Learning Goal:

Children know about similarities and differences in relation to pictures, objects, materials and living things.

Year 4:

Recognise some common conductors and insulators, and associate metals with being good conductors.

Year 6:

Compare and give reasons for variations in how components function including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.

How can I support learners who struggle with attention?

- Create a working classroom environment that is calming and simple, e.g., clear routines, organised workspaces.
- 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.
- 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.
- Plan movement breaks and classroom jobs (e.g., handing out materials) for individual learners.

How can I support learners who struggle with change and transition?

- Science doesn't always follow the same lesson format and structure, so prepare learners in advance by explaining how the lesson will run.
- Use visuals (e.g., now, next, then boards or visual timetables) to segment the lesson into manageable chunks that are achievable for the learner.
- 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, as detailed in the case study.

Case Study

Supporting a learner with autism in mainstream Year 1 science lessons

One of the learner's targets was to initiate and sustain attention to a given task. Following discussions with the SENCO, a Now, Next, Then board (NNT) was created and implemented across all areas of the school day to help structure lessons and support the learner's engagement in modified tasks aligned to the Year 1 curriculum. The NNT had three images for tasks and activities – with some being 'demands' (tasks that had to be completed), and some preferred, motivational activities which served as a reward for completed curricular tasks.

Planning: For science lessons, the teacher and teaching assistant (TA) talked through the expectations and planned outcomes for the lesson, and how these would be communicated to the learner. Some visuals were consistent, though sometimes the teacher and TA agreed language and visuals for more specialised tasks (e.g., when the class went on a learning walk in the local area to observe the changing of the seasons). Tasks were developed in line with the learner's individual needs, and most were planned to take about five minutes to complete. When the NNT was first implemented, the 'next' task was a preferred activity; as the learner made progress towards his target and was consistently able to complete the five-minute task, the 'then' task on the NNT became the preferred activity, so that the learner was extending his attention to curriculum tasks, completing two five-minute tasks before the preferred activity.

Implementation: At transition, when the learner came in from morning play, the teacher greeted the learner and walked with him to the back of the classroom to quietly discuss the lesson 1:1 whilst the TA settled the rest of the class on the carpet. The language staff used was familiar to the learner, and consistent across all adults in the classroom: 'Now you are sorting the animals into groups, next you will draw the animals into your chart, then you can have five minutes free time to create your favourite animal with the Lego' – the teacher pointed to pictures on the NNT board whilst reviewing the parts of the lesson. The teacher would then prompt, 'What are you going to do now?'. Once the learner was set up with his task, the teacher would work with other learners, checking in with the learner regularly. As each task was finished, the learner enjoyed taking the picture off the board – it provided both a sense of achievement and motivation, as he knew he was moving closer to his desired activity. The teacher or TA would prompt the learner, 'You have finished sorting the animals, well done! Let's move the pictures – what is happening next?'

