

Provision Map for STEM based subjects

In planning lessons we need to consider ways of minimising or reducing barriers to learning so that all learners can fully take part and learn. In some activities, learners with SEN and/or disabilities will be able to take part in the same way as their peers. In others, some modifications or adjustments will need to be made to include everyone.

For some activities, we may need to provide a 'parallel' activity for learners with SEN and/or disabilities, so that they can work towards the same lesson objectives as their peers, but in a different way. Occasionally, learners with SEN and/or disabilities will have to work on different activities, or towards different objectives, from their peers.

Area of need	Provision/adaptations	Science
Dyslexia	Working memory: • Re-cap of previous learning to enable working memory. This could be with a chart to build up each week's key learning in a very visual way. • Re-teaching of the main aspects of previously taught lessons with key information to ensure confusion does not occur. • Learning presented in small chunks. • Access to any visual aids from previous relevant learning. • Present information in a visual form with only the key information for the learner to remember. Processing time: • Additional time to talk through ideas and concepts. • Allow plenty of time for recall. • Repeat instructions using the same language New Vocabulary: • Word mats with pictorial aids if able. • Written prompts	• Many learners with dyslexia have strong visual and spatial reasoning skills. They tend to better understand science concepts that are taught through manipulative or visual teaching strategies. Using lots of practical resources will be beneficial. • Where possible, try linking science to real life contexts that are practical and meaningful for the learner. • Use a digital camera to capture each stage of an investigation, or important findings on a field trip, for future reference. Images can also be used to build a visual record. • Use mnemonics to help learners remember things like the order of the colours in a rainbow, order of planets in the solar system or convection currents in weather systems.

	• Stories presented in alternative styles such as storyboards. • Exaggerate new vocabulary by separating syllables • Use of mnemonics to help remember new vocabulary • Remember that STEM subjects have a language of their own and learning new STEM vocabulary can be a challenge. Words like difference, multiply, and divide can be confusing as they mean different things in a maths context. • Multi-sensory: • Use of talk partners • Visually draw concepts to aid understanding • Coloured overlays (also think about the colours of any IWB presentations) • Larger font where able Sequencing: • Repeat instructions and information • Sequencing frames • Written scaffolding to aid recording Recording: • Alternative methods of recording information including audio/visual to ensure key concepts are recorded. • Paired writing	
DCD	• Adaptations when motor skills are being used e.g. recording of information. • Adjustable height desks or standing desks can be used • Peer buddy within lessons • Specialist equipment available	• Closed questions where possible as there may be difficulty in explaining answers. • Some textures used within science will need learner preparation.

	• Alternative methods of recording using audio/visual resources • Reduction of requirement to use fine motor skills such as pre-cut resources.	
Autism	• Clear sequencing of lessons • Alternative methods of recording information such as use of technology • Task Management boards • Adapted ways of teaching concepts such as diagrams, stories, acting out processes, computer simulations, concept mapping, etc. • Simple audio recorders can be used instead of written notes during investigations or field trips.	• Learners on with ASD may struggle with word problems and need adaptation because of the following difficulties: ○ <i>Organizing</i> the order of operations in multiple-step word problems. ○ <i>Holding</i> information from one step while manipulating information from another step. ○ <i>Shifting</i> from one piece of information to a second piece of information. ○ Attending to the <i>relevant</i> information within the word problem. ○ Perseverating on <i>unimportant</i> information within the word problem. • <i>Controlling the impulse to solve</i> the first identified operation without understanding all of the steps involved. • Ensure that learners with sensory issues are considered in relation to sounds, smells textures etc involved with science experiments.
SEMH	• Pre-teach of key concepts • The transition from whole-class to group or independent work, and back, is clearly signalled to allow time for processing.	• Safety aspects related to science experiments and equipment will need to be risk assessed for some learners. • Pre-teach and preparation for some children maybe

	• Support to understand that other people will have different views. • Circle time discussions around different issues. • Clear expectations around behaviour when there are disagreements with others. • Silent debates where learners are requested to put their views on post it notes to share their ideas to avoid conflict. • Thrive support to focus on social skills to enable discussions. • Assign learners particular roles within discussions so they have a clear purpose in the group and keeping them focussed. • Small groups supported by an adult to facilitate conversations.	needed in case of trauma related to sex ed.
ADHD	• Standing desks • Adult support at the beginning of the lesson to ensure focus and understanding of key concepts. • Laptop to record any written work to enable the focus to be on understanding the concepts and belief systems. • Small chunks of information with key concepts in pictorial form. With limited calculations or questions on a page. • Avoid unnecessary visual stimuli. • Practical activity to remain physically active where possible. • Re-cap of previous learning to organise thoughts before the lesson. • Small tasks to ensure success.	• Ensure a range of practical tasks to allow the learners to be active when in lesson. • Allow some activities where learners with ADHD are allowed to work alone. People with ADHD often feel group working is a challenge.

	• Encourage learners to connect information or concepts being presented • Repeat directions individually • Use visual maps • Use flash cards as visual aids • Learners with ADHD tend to respond better to concrete learning experiences. They often have high levels of creativity and welcome the chance to learn independent.	
Dyscalculia	• Some learners may find the organisation of ideas into a logical way difficult and therefore will need support for this. • Adaptation of tables, data etc and support given for understanding. • Use of IT equipment to support understanding of concepts. • Use mnemonics to aid memory. • Minimise the need to copy down work from the board. Where unavoidable check it has been copied accurately. •	• Make learning multi-sensory. Use equipment, apparatus, visual aids, etc. • Make science practical and where possible related to everyday experiences/the world. • Link facts and learning, so the learner has an anchor fact(s) to return to. • Get the learner to explain how they have come to an answer, whether right or wrong. This helps to understand thought processes, and to identify if, and where, these are breaking down. • Encourage children to explain to themselves and others how they have done a task. • Encourage workings which show thought processes rather than just answers.
Speech and Language	• Language is to be clear, unambiguous and accessible. • Key words to be written up with meanings/visual aids. • Instructions are given clearly and reinforced.	• When developing word problems, it's helpful to use clear, unambiguous language and keep unnecessary information to a minimum to reduce cognitive load. Try representing the problem in

	• Careful preparation to ask questions in a variety of ways enabling learners with S&L difficulties to answer open ended questions. • Learners are allowed time to process and then answer the questions. • Adults to support learners to contribute to lessons. • Some learners will need tasks to be broken down into smaller sets of instructions. For example, give the first instruction, then once that is completed give more information – rather than presenting all the task requirements in one instruction.	images or ask an adult or peer to read the problem to them. • Explain concepts carefully. Get the child to develop their understanding by exploring new subject matter and explaining what they think they have been asked to do. • Build on investigations, using careful discussions that help learners understand and use scientific vocabulary and help them to analyse and understand what they have observed.
Moderate Learning Difficulties/Global Delay	• Tasks in short chunks to allow for processing and plenty of opportunity for embedding of learning. • Alternative ways to record their ideas such as audio/visual. • Use mind maps, bullet point lists, storyboards to record their learning. • Re-cap of previous learning to enable working memory. This could be with a chart to build up each week's key learning in a very visual way. • Learning presented in small chunks. • Access to any visual aids from previous relevant learning. • Present information in a visual form with only the key information for the learner to remember. • Scaffolded work through use of writing frames. • New vocabulary selected for the key words and	• Make learning multi-sensory. Use equipment, apparatus, visual aids, etc. • Make science practical and where possible related to everyday experiences/the world. • Link facts and learning, so the learner has an anchor fact(s) to return to. • Get the learner to explain how they have come to an answer, whether right or wrong. This helps to understand thought processes, and to identify if, and where, these are breaking down. • Encourage children to explain to themselves and others how they have done a task. • Build up a chart (using a wallchart or other space) to show the focus of each lesson and how successive lesson topics link together to develop understanding of an area of science work. This could include symbols,

	explicitly taught in pre-teach. • Show the learner a practical example of what you need them to do giving concrete examples. • Simple audio recorders can be used instead of written notes during investigations or field trips.	images or objects to make it more accessible. • Use a digital camera to capture each stage of an investigation, or important findings on a field trip, for future reference. Images can also be used to build a visual record.
Physical disability	• Alternative methods of recording their learning. • Specialist equipment e.g. tactile ridges on measuring glassware for learners with a visual impairment	•