Our Rationale for SEND pupils within science.

The study of science fires pupils' curiosity about the world around them and offers direct, practical opportunities to find explanations.

It gives pupils opportunities to:

- Link practical experiences with scientific ideas.
- Experiment and model to develop scientific ideas and explanations.
- Develop critical and creative thinking.
- Discover that scientific explanation is rooted in evidence.
- Discover how scientific ideas have linked to technological change.
- To learn to question.

How do we support pupils with SEND across the curriculum and particularly within science?

Maintaining an inclusive curriculum learning environment	Science adaptations:
Sound and Light: • Background noise is limited for all pupils including pupils with Hearing Impairment. • Screen glare is reduced from the interactive boards. • The teacher's face can be seen and is visible for all. • Pupils have access to hearing and low vision aids.	• On fieldtrips, ensure that pupils with hearing aids are positioned close to the adult so that they can hear information/instruction. • For children with visual impairments, science fieldtrips to be considered and additional adaptations to be made to ensure that pupils can access. • Additional risk assessments to be completed for pupils with physical disabilities when completing fieldtrips.
Seating: • All pupils can see and hear clearly. • Seating positions are taken into consideration for children with a disability. • Seating allows for peer support or adult support. • Seating allows room for pupils with mobility issues.	• Pupils with hearing impairments/visual impairments are positioned close to the whiteboard to be able to access. • Pupils are seated close to teacher/teaching assistant to ensure that they have access to additional support.

• Furniture is suitable. Adjustable height tables are used where appropriate; sloping boards utilised.	• Seating in the class allows all pupils to communicate, respond and interact with each other and the teacher in discussions.
Resources: • Storage systems are predictable for SEND pupils. • Areas of the classroom are labelled to encourage independent use, e.g. using images, colour coding, large print, symbols. • The classroom has a range of accessible materials including: • Chunky pencils • Different coloured crayons. • Individual whiteboards. • Different types of pens for writing in different contexts. • Pencil grips for pupils who need them. • Access to iPad/laptops • Use of additional mice for pupils with mobility issues when using the laptop. • Ensure that font size/type is in line with school policy. • Background colours of the whiteboard is considered for pupils with dyslexia. • Reading material is varied and encourages pupils to access. • Table top resources to support independence including: word banks, visual cues, dictionaries,	• Ensure that science resources are easily identifiable, and systems ensure that pupils can access resources that they require.

Displays: • Displays are: • Accessible, within reach, visual and tactile where appropriate. • Pupil led. • Informative and displays current learning. • Engaging for pupils. • Demonstrates the process of pupil learning. • Vocabulary rich. • Demonstrates key questioning.	• Accessible science displays are created and include key concepts, vocabulary and pre-learning to support memory and consolidation.
Multi-sensory approaches: • Teaching takes into account pupils' different learning styles. Visual, auditory and kinaesthetic approaches are used such as supporting teacher talk with visual aids. • Alternatives to written recording is offered e.g. drawing, scribing, word processing, mind maps, digital images, video, voice recording. • Visual timetables are used to support pupil organisations and security. • Visual picture cues are used to support routines. • Shared signals are developed between pupils and staff to establish security when there is uncertainty. • Now/Next cues are used to support pupil retention. • Practical equipment is used to secure pupil understanding prior to moving onto abstract concepts.	A multi-sensory approach to adapting the range of sources, evidence could include: • Summarising ideas in pictures. • Modifying visual sources to show change. • Comparing visual sources from different times. • Explaining patterns in graphs. • Using visual timelines. • Storyboarding. • Written sources being converted into auditory form. • Using auditory forms of evidence to develop understanding. • Role play events. • Creating models/art work to show key scientific concepts. • Using symbols.

ICT: • Accessibility features are used to include pupils with SEND as appropriate: • Pupils have access to typing programmes to develop their key skills and touch typing e.g. Nessy. • Pupils can access voice-recognition software e.g. Word dictate or Dragon Dictate to support recording. • Screen filters are used to cut down glare. • Font size is considered for worksheets (Size 12 or more); screen presentations (Size 20 or more) • Font type follows school's presentation policy. • Screen background is adapted for pupils with visual difficulties of dyslexia. •	ICT in science allows pupils to: • Use voice recording to rehearse words, phrases, sentences. • Use visual images to present their learning. • Research scientific phenomena • Communicate information with pupils and parents. • Present their learning in an accessible way. • Capture images and enable the pupil to process them at the slower pace.
Adult deployment and support: • All pupils are encouraged to be as independent as possible including pupils with SEND. • Adult support is planned for within lesson plans. • Adult support is used to scaffold the learning, allowing pupils, increasingly, to work independently. • Adult support is used for pre-learning of key concepts, vocabulary; particularly for pupils with retention difficulties. • Adult support is used for over-learning. Adults support pupils to secure understanding of concepts before moving forward. • Adults offer opportunities to break down tasks into more manageable chunks.	• Adults can support adaptation within lessons for pupils with SEND. • Directed adult support enables pupils to access visual/verbal prompts to support retention. • Scaffolding scientific explanations including: - This tells me… - Both sources…

• Adults provide key questions to encourage pupil understanding, secure concepts and encourage assessment.	
Teacher communication: • Teacher language is clear and accessible. • Key words, meanings and symbols are explained. • Instructions are given clearly and reinforced visually where necessary. • Questions are worded at an age-appropriate level, avoiding complex vocabulary and sentence structures for pupils with SEND. • Alternative communication modes are utilised to meet pupil need e.g. signing, braille. • Text, visual aids are checked for clarity and accessibility for all pupils including pupils with SEND.	• Pre and over-learning of language is encouraged to support pupils with SEND and to enable them to access further learning. • Vocabulary to be taught explicitly to ensure that pupils do not misunderstand concepts. Words may include: circuits, investigate, prediction, biome, analyse, control, variables. • Words banks to be created and displayed within the classroom.
Assessment: • Pupil targets are within books. • Pupils can articulate their targets and show evidence of working towards their targets within their work. • Pupils can articulate their starting point within a curriculum area. • Pupils can articulate their learning through their Cornerstones projects/focus. • Close the Gap is used across the curriculum to feedback learning to all pupils. • Targeted questioning enables teachers to check and extend understanding.	• Assessment drives adaptation. Pre/over-learning is used to support pupils who have not made the expected progress. • Targeted questioning enables adults to check understanding. • Mind mapping to be used as a tool to establish prior knowledge and to organise scientific concepts into categories

Memory/Consolidation/Retention: • Cornerstones projects/focus motivate, engage and inspire learning and enable pupils to build upon their knowledge and understanding within a context. • New learning is explained within the context of the Cornerstones focus and what the pupil already knows. • Information taught is concise. • Visual or concrete (real) materials are used to reinforce learning through sensory channels. • Explanations are clear, concise and simplified where needed. • The use of memory aids are encouraged e.g, displays, working walls, dictionaries, spelling cues, key questions, table top resources, visual cues. • Adults are utilised to support retention through pre/over learning, simplification of instruction/concept. • Encourage pupils to develop their own ways of remembering key information e.g. mnemonic.	• Pupils are encouraged to create word banks, mind maps to secure their understanding of a concept. • Digital resources are used to remind pupils and help pupils to reflect upon their prior learning. • Photographs and videos should be taken on field trips to support consolidation, analysis and explanation once back in school.