Quality First Teaching – 4 Areas of SEND and Science Specific

Communication and Interaction	
Quality First Teaching Strategies	Science Specific
• 'Rules' of good listening displayed, taught, modelled and regularly reinforced. • Pupils aware of pre-arranged cues for active listening (e.g. symbol, prompt card). • Pupil's name or agreed cue used to gain individual's attention – and before giving instructions. • Instructions broken down into manageable chunks and given in the order they are to be done. • Checklists and task lists – simple and with visual cues • Delivery of information slowed down with time given to allow processing. • Pupils are given a demonstration of what is expected. • System of visual feedback in place to show if something has been understood (e.g. thumbs up). • Talking partners or similar used to encourage responses. • Classroom furniture and groupings consider whether pupils with speech & communication needs can see visual prompts and the teacher. • Access to a quiet, distraction free work station if needed. • 'Working walls' to develop understanding of new vocabulary. • Parents advised of new vocabulary so it can be reinforced at home. • Use of visual timetables.	• Pre teach Science specific vocabulary using images or widgit symbols to accompany the words. • Modell enquiry skills to the children so they can watch and copy or model alongside the children. Remodel to children during the lesson if needed. • Name the scientific equipment as you use it and at the start of the lesson e.g. thermometer, Newton meter, measuring jug, measuring scales etc. • Establish a routine for Science lessons and how equipment does not need to be touched until needed. • Use short sentences with key information e.g "pour in liquid" "pick up thermometer". • Ensure lots of images and pictures are used throughout the sequence of lessons. • Paired work with pupil who can help with understanding the investigation/ vocabulary. • Check their understanding by asking them what they should be doing. • Lots of practical modelling. • Use talk partners to help in practical investigations. • Ensure new words for the lesson are focussed on and taught with images, as well as teaching vocabulary linked to the lesson objective and to the practical skills.

• Minimise use of abstract language. • Ensure that preferred methods of communication (as well as level of eye-contact) known by all staff within school.	• Check pupils' understanding by inviting them to reformulate explanations in their own words or in other ways. For example, after an investigation of floating and sinking, ask pupils to explain what happened using diagrams, as well as explaining it orally instead of writing it down. • Use a digital camera to capture each stage of an investigation, or important findings on a trip, for future reference. Images can also be used to build a visual record. • Use of videos and other visual resources to aid learning.

Cognition and Learning	
Quality First Teaching Strategies	Science Specific
• 'Next steps' for learning derived from what the pupil can already do – referring back to earlier stages only when necessary. • Instructions broken down into manageable chunks and given in sequence. • Pupils encouraged to explain what they have to do to check understanding. • Links to prior learning explicitly made. • Key learning points reviewed at appropriate times during and end of lesson.	• Prioritise certain knowledge that will be necessary to secure progression onto the next stage. For example, it is more important that Year 3 pupils know the parts and requirements of plants for life, than what fertiliser is. Ensure retrieval starters reflect this. • Science involves learning lots of new words that have different meanings to everyday language. Ensure explanations use concrete items pupils can see and are familiar with as the starting point.

• Coloured paper for worksheets and coloured background on smart board (beige). • Diagrams and pictures to add meaning alongside text. • Additional time to complete tasks if necessary. • Teach and model memory techniques. • Minimise copying from the board – provide copies for pupil if necessary.	• Explicitly teaching the most important scientific vocabulary using pictures, diagrams and lots of practice where pupils say aloud the words. • Avoid the need for copying lots of information. For example, notes on interactive whiteboards can be printed off for all pupils. • Simple audio recorders can be used instead of written notes during investigations to record observations, findings, predictions and thoughts. • Capture images and processes using a camera/ipad and replay them at different speeds and magnifications, and with particular image characteristics − e.g. to help pupils study events and causality, to identify underlying patterns or to look at detail • Identify pupils' existing science knowledge and prior experience − e.g. using posters, concept maps or mind-mapping software. • Use real objects as a starting point for developing the concepts and the language needed to describe, discuss and explain what pupils have observed or experienced. • Use mnemonics to help pupils remember things like the order of the colours in a rainbow or the relative distance of the planets from Earth. • Give clear instructions on how to handle Science equipment/resources with respect. • Plan more time to complete projects. Ensure children know they will be given more time if they wish to. • Recap instructions during the lesson with clear modelling. Record instructions if appropriate.

	• Consider videoing the modelling of an investigation for a child to replay and follow the steps on their ipad. • Use the same organised system for getting equipment out and away each lesson so children know what to expect.

Social, Emotional and Mental Health	
Quality First Teaching Strategies	Science Specific
• Take time to find pupil's strengths and praise these – ensure that the pupil has opportunities to demonstrate their skills to maintain self-confidence. • 'Catch' the pupil being good and emphasize positives in front of other pupils and staff (where appropriate). • Play calming music where appropriate. • Give breaks between tasks and give legitimate 'moving around' activities e.g Brain Gym, wake up and shake up. • Provide lots of opportunities for kinaesthetic learning e.g. practical activities, experiential learning, multi-sensory resources. • Make expectations for behaviour explicit by giving clear targets, explanations and modelling. • Where possible, create a quiet area both for working and as a 'quiet time' zone.	• Minimise distractions and cognitive load. E.g. only put out the equipment children need for that lesson. • Set clear rules for when children can touch resources. • Pre-teach unfamiliar vocabulary to take away stress and anxiety. • Give children individual spaces/work areas if needed so they have more space for their work and equipment. • Consider the risk points in the lesson e.g. for pupils with sensitivity to noise or smell and pre warn children this is coming up. • Give the child a responsibility in the lesson to raise self-esteem e.g. give out job roles in an investigation. • Make sure pupils are well prepared for visits, particularly to museums. Preparation can include photographs, videos etc so that pupils are not worried about unfamiliar situations.

• Use a visual timer to measure and extend time on task – start small and praise, praise, praise. • Legitimise movement by getting pupil to take a message, collect an item, use a 'fiddle toy' if necessary. • Ensure that tools/equipment are easily accessible and available for use. • Use pupil's name and ensure you have their attention before giving instructions. • Chunk instructions and support with visual cues. • Make use of different seating and grouping arrangements for different activities. • Personalise teaching where possible to reflect pupils' interests. • Communicate in a calm, clear manner. • Keep instructions, routines and rules short, precise and positive. • Listen to the pupil, giving them an opportunity to explain their behaviours. • Provide visual timetables and task lists – may need to be for a short period of time depending on the pupil. • Have a range of simple, accessible activities that the pupil enjoys to use as 'calming' exercises. • Allow pupil to have a safe place to store belongings and fiddle toys. • Ensure groupings provide positive role models. • Communicate positive achievements – no matter how small – with home and encourage home to do the same. Could be in the form of a 'Golden moments' or 'Good News' book or 'Good notes' to be collected in a small plastic wallet	• Check with background sensitivity before teaching specific unit– e.g., drugs in Year 6, puberty in Year 5 in case there are and aspects that could be a trigger. • Consider the accessibility of science demonstrations. • Plan the demonstration area so that it is clearly laid out, uncluttered and gives all pupils a clear view.

• Use Social stories when appropriate.	

Sensory Needs	
Quality First Teaching Strategies	Science Specific
• <u>Visual Difficulties</u> • Give as many first hand 'real' multi-sensory experiences as possible. • Ensure correct seating in relation to board, whiteboard, Smartboard taking into account levels of vision in each eye. • Try out different paper/Smartboard colours to try to find best contrast. • Consider lighting – natural and artificial – which is most comfortable? • Avoid shiny surfaces which may reflect light and cause dazzle (laminate can do this). • Take advice from specialist teams related to font style and size. • Short spells of visual activity should be interspersed with less demanding activities. • Eliminate inessential copying from the board. • Where copying is required, ensure appropriate print size photocopy is available. • Always use verbal explanations when demonstrating to the class. • Address the pupil by name to get their attention.	• Check the number of resources being used and that there is not too many for sensory overload- introduce them gradually. • Support children with physical needs with handling equipment. • Children with sensory issues may not wish to engage with touching or feeling materials. Give them time over a sequence of lessons to explore the materials and to engage with them at their own pace. • Consider pupils with colour blindness and use word mats with colours labelled if needed. • Have instructions with images clearly displayed either on IWB or flipchart/ iPad or printed on the table. • Allow children to have their own space to work in if they need more space. • Ear defenders may be used for children with sensory needs around noise. • Allow time for children to explore materials prior to the lesson. • Make tasks accessible through pupils using, where appropriate specialist equipment, e.g. specialist scissors and cutting tools and/or generic aids, e.g.

• Avoid standing in front of windows – your face becomes difficult to see. • <u>Hearing Difficulties</u> • Careful seating that allows the pupil to see the teacher clearly and also see other speakers (back to the window is good) • Gain pupil's attention before important information is given. • Keep background noise to a minimum. • Slow down speech rate a little, but keep natural fluency. • Do not limit use of rich and varied language – trying to stick to short words and limited vocabulary can limit natural speech patterns and full meaning. • Allow more thinking and talking time. • Model and teach careful listening along with signals when careful listening is required. • Repeat contributions from other children – their voices may be softer and speech more unclear. • Occasionally check that oral information/instructions have been understood. • Face the pupil when speaking. • Keep hands away from mouth. • Key words on board to focus introduction and conclusion. • Divide listening time into short chunks. • Use visual symbols to support understanding. • <u>Co-ordination.</u> • Consider organisation of classroom to allow free movement.	frames or adhesives to hold down pupils' work to surfaces. • Get specialist advice on equipment for pupils with particular SEN or disabilities, eg tactile ridges on measuring glassware for pupils with a visual impairment. • Make sure pupils do not come into contact with any substances or materials that they are allergic to. • Consider whether pupils need support in using science equipment, especially for tasks that require a high level of skill or accuracy.

• Allow the child plenty of space to work – where space allows, could he/she be placed next to a 'free' desk? • Ensure that left and right-handed pupils are not sitting next to each other with writing hands adjacent • Seating should allow pupil to rest both feet flat on the floor – check chair heights Desk should be at elbow height. • Sloping desk provided if possible. • Positioned so pupil is able to view the teacher directly without turning the body – close enough to see and hear instructions. • Attach paper to desk with masking tape to avoid having to hold with one hand and write with the other. • Break down activities into small chunks with praise for completing each part. • Ensure range of different pen/pencil grips are available. • Reinforce verbal instructions by repeating several times, give no more than one or two instructions at a time and ask the child to explain what is required to check understanding. • Cue cards may help the pupil to sequence a task e.g. 1. Clear your desk 2. Collect the equipment you need (with visual cues) 3. Put the date at the top of the page etc. • Equipment clearly labelled and kept in same place in class • Allow additional time to complete tasks	