**SEND Provision - Science**

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| **Cognition and Learning** | | **Communication and Interaction** | |
| Subject Challenges for SEND | Provision for SEND | Subject Challenges for SEND | Provision for SEND |
| The ability to explain a scientific concept/provide reasoning to explain a thought or opinion.  The ability to recall basic scientific information e.g. the five groups of animals (mammals, fish, birds, reptiles and amphibians).  Understanding of subject specific vocabulary.  Difficulty in producing accurate pieces of writing e.g. an explanatory text of a scientific concept.  Understanding ‘abstract’ scientific concepts such as electricity/air resistance. | Use stem sentences to provide subject specific language in a particular format – this will enable children to accurately communicate their thoughts and opinions.  Pre-teach can be used to revisit key scientific information as well as planned retrieval questions. The use of ‘hooks’ at the beginning of lessons informed by previous gap analysis should revisit objectives children are not secure with.  Pre-teach subject specific vocabulary e.g. dependent/independent variables. Draw particular attention to subject specific vocabulary which could be viewed as ambiguous. E.g. ‘results table’ or ‘culture.’ Support the understanding of key vocabulary through definitions/visual aids.  Use writing frames, ‘fill in the blank’ sentences, sentence starters, vocabulary mats, visuals to sequence etc. Children who have difficulties structuring their writing/who have difficulties with short term memory could use talking tins to ‘hold their sentences’ whilst they write at an individual word pace. Children can record work differently e.g. through the use of ICT (PowerPoints, Word documents, videos etc).  Where possible, begin the lesson by using concrete resources before you discuss the abstract scientific reasoning behind. For example, make a circuit with a bulb, battery and wires before you discuss the concept of electricity/drop different shapes objects before you discuss air resistance. | Expressing themselves and sharing their thoughts and opinions orally.  Acquiring, comprehending and using scientific language.  EAL pupils may find it difficult to access resources/learning. | Use stem sentences to provide subject specific language in a particular format – this will enable children to accurately communicate their thoughts and opinions.  Use alternative recording devices e.g. whiteboards/iPads/talking tins to allow children the option of sharing their thoughts and opinions in an alternative way.  Allow children processing time when asking them a direct question. Some children need upwards of 10 seconds to process a question before they can answer.  Use visuals to support children in using the correct scientific name for apparatus. Widgit Online can support with creating visuals. Create flashcards with the common name for an object on one side and the scientific name on the other side. E.g. taste buds/fungiform papillae  Use a reduced number of simple instructions which are supported by visuals. Appropriate modelling to aid understanding.  Differentiated written resources can be supported by visuals and could be translated using Word. (Teachers click Review – Translate – Translate Document). This will fully translate the document and open in a new window. |
| **Sensory and Physical** | | **Social Emotional and Mental Health** | |
| Subject Challenges for SEND | Provision for SEND | Subject Challenges for SEND | Provision for SEND |
| Fine motor skills/physical difficulties.  Sensory/physical difficulties accessing specific environments during scientific experiments.  Children with a visual impairment may find it difficult to view text/images/scientific equipment. | Teachers to be proactive in identifying appropriate resources/apparatus for each individual child’s need. For example, when conducting an experiment, some children may require a larger measuring tape/thermometer. Consider alternative ways to measure information e.g. trundle wheel rather than measuring tape.  Ensure any sensory difficulties are considered at the point of planning and appropriate alternative arrangements are made. For example, if a child will find the texture of certain materials e.g. cotton wool overwhelming, resource an alternative. Ensure that all environments are accessible to children with physical disabilities e.g. wheelchair accessible. (Identify in risk assessment).  Ensure that font size used in resources matches the specific font size specified in the child’s report provided by the Visual Impairment Team (saved in SEND files on T Share). Enlarge images to appropriate sizes to aid access. Consider adapted resources e.g. free standing magnifying glasses, measuring cylinders with enlarged scales etc. | Low self-esteem in scientific ability.  Difficulties with social skills may result in children finding group work challenging.  Understanding safety issues/concerns that arise during scientific experiments. E.g. taking care with thermometers due to dangers of mercury exposure. | Showcase different work and a focus on the creation process rather than on the end result. Teacher be conscious to praise effort rather than ability. Make use of learning objectives which focus upon the specific scientific skill. E.g. focus upon the accurate plotting of a graph rather than the neatness of the bars coloured. Pre-teach key information and vocabulary so that children feel prepared for the lesson and can share their knowledge with their peers – resulting in raised self-esteem.  Carefully consider seating arrangements during group work to ensure that children are placed next to patient, non-dominant children. Additional adult support can be deployed as necessary. Ensure children have access to usual aides such as ear defenders to reduce noise. Provide talking tins for children who struggle with impulsivity so that they can record their contributions as they think of them but can play them back to other children at the appropriate time.  Pre-teach safety concerns before the lesson with the aid of Social Stories, consequential visuals and clear behaviour expectations. LSA support to be offered if safety concerns are identified. |