Stickland's School - Working scientifically skills progression EYFS/KS1

(italics – development matters statements)

'Asking Questions'

. Nursery	Reception	Years 1 & 2
Show curiosity and ask questions		**Asking questions and recognising that they can be answered in different ways**
Understand 'why' questions, like: "Why do you think the caterpillar got so fat?" (C&L) • While playing and exploring, the children demonstrate their curiosity. • While playing and exploring, the children begin to ask 'I wonder …' questions. • With support, the children think of ideas for answering their questions.	**Ask questions to find out more and to check they understand what has been said to them.**(C&L) • While playing and exploring, the children ask 'I wonder…' questions. • With support, the children develop their ideas for answering their questions.	**Asking simple questions and recognising that they can be answered in different ways** • While exploring the world, the children develop their ability to ask questions (such as what something is, how things are similar and different, the ways things work, which alternative is better, how things change and how they happen). Where appropriate, they answer these questions. • The children answer questions developed with the teacher often through a scenario. • The children are involved in planning how to use resources provided to answer the questions using different types of scientific enquiry, helping them to recognise that there are different ways in which questions can be answered.

'Observing and Measuring' and 'Setting up tests'

. Nursery	Reception	Years 1 & 2
Make observations using their senses and simple equipment. Make direct comparisons. Identify, sort and group		**Making observations and taking measurements Engaging in practical enquiry to answer questions**
Use all their senses in hands-on exploration of natural materials. (UTW) **Explore how things work.** UTW) **Use one-handed tools and equipment.** (PD) **Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel.**(PD) ***Make comparisons between objects relating to size, length, weight and capacity.*** *(MD)* ***Compare quantities using language: 'more than', 'fewer than'.*** *(Mathematics)* **Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them.** (PSED) • With support, explore the natural and man made world using their senses. • With support, the children use magnifying glasses or tablets with magnifiers to make observations. • The children explore using beakers/scoops etc. • Make comparisons between objects ("This leaf is bigger than that one.") and quantities ("There are more flowers on this one."). • While playing and exploring, the children select and use resources for a particular task. With support, the children sort and group objects	**Explore the natural world around them.**(UTW) **Describe what they see, hear, feel whilst outside.** (UTW) **Develop their small motor skills so that they can use a range of tools competently, safely and confidently.** (PD) **Count objects, actions and sounds.**(MD) **Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.**(C&L) **Show resilience/perseverance in face of challenge.** (PSED) • Explore natural and man made world using senses • The children use magnifying glasses or tablets with magnifiers to make observations. • The children use smaller pieces of equipment such as syringes and pipettes. • With support, make comparisons, using hands and feet and other non-standard measures e.g. building blocks and beakers. • While playing and exploring, the children, try out using resources to answer a question. • The children test things out to make comparisons e.g. Does the red car go further than the blue? • Identify/name objects by matching them with pics • The children sort and group objects, sometimes using their own criteria.	**Observing closely, using simple equipment** • Children explore the world around them. They make careful observations to support identification, comparison and noticing change. They use appropriate senses, aided by equipment such as magnifying glasses or digital microscopes, to make their observations. • They begin to take measurements, initially by comparisons, then using non-standard units. **Performing simple tests** • The children use practical resources provided to gather evidence to answer questions generated by themselves or the teacher. • They carry out: tests to classify; comparative tests; pattern seeking enquiries; make observations over time. **Identifying and classifying** • Children use their observations and testing to compare objects, materials and living things. They sort and group these things, identifying their own criteria for sorting. • They use simple secondary sources (such as identification sheets) to name living things. They describe the characteristics they used to identify a living thing.

'Recording data'

. Nursery	Reception	Years 1 & 2
Record their observations by drawing, taking photographs, using sorting rings or boxes and, in Reception, on simple tick sheets		**Recording and presenting evidence**
Talk about what they see, using a wide vocabulary. (Understanding the world) **Create closed shapes with continuous lines, and begin to use these shapes to represent objects.** (Understanding the world) **Draw with increasing complexity and detail, such as representing a face with a circle and including details.** (Understanding the world) • With support, the children talk about what they have observed. • They sometimes draw and make marks to record their observations. • With support, they use sorting rings and boxes.	***Connect one idea or action to another using a range of connectives.*** *(Communication and language)* ***Describe events in some detail.*** *(Communication and language)* • The children, sometimes, draw and write simple labels to record their observations. • With support, they record their observations and comparisons e.g. using simple prepared tables, taking photographs, using sorting rings and boxes.	**Gathering and recording data to help in answering questions** • The children record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing. • They record their measurements e.g. using prepared tables, pictograms, tally charts and block graphs. • They classify using simple prepared tables and sorting rings.

'Interpreting and communicating results'

. Nursery	Reception	Years 1 & 2
Use their observations to help them to answer their questions		**Answering questions and concluding**
Make comparisons between objects relating to size, length, weight and capacity. *(Mathematics)* ***Compare quantities using language: 'more than', 'fewer than'.*** *(Mathematics)* • With support, the children demonstrate and talk about what they have done and noticed. • With support, the children notice how they made a difference to an outcome, e.g. "My car went further when I pushed it harder.", and answer the question, where appropriate. • With support, the children make comparisons between objects e.g. "My plant is taller than Sarah's.".	**Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary.** (Communication and language) ***Connect one idea or action to another using a range of connectives.*** *(Communication and language)* ***Describe events in some detail.*** *(Communication and language)* **Compare length, weight and capacity.** (Mathematics) • The children talk about what they have observed. • The children demonstrate and talk about what they have found out. • They, sometimes, talk about what they have found out from secondary sources, including non-fiction texts. • The children notice and talk about how they made a difference to an outcome e.g. "My car went further when I pushed it harder." • The children make direct comparisons or use their recorded observations to communicate what they have found out and answer the question, where appropriate.	**Using their observations and ideas to suggest answers to questions** • Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence e.g. observations they have made, measurements they have taken or information they have gained from secondary sources. • The children recognise 'biggest and smallest', 'best and worst' etc. from their data.