Progression in Working Scientifically Skills for EYFS

This document shows how the Development Matters statements, that relate to the working scientifically statements in the National Curriculum in England: science programmes of study, build across Nursery and Reception and are linked to the PLAN Working Scientifically Skills for Key Stage 1.

Mapping the PLAN Working Scientifically Skills for EYFS to the PLAN Working Scientifically Skills for Key Stage 1
The table below shows how the PLAN Working Scientifically Skills for EYFS, which are based on the relevant statements in Development Matters, map to the equivalent PLAN Working Scientifically Skills for Key Stage 1, which are based on the National Curriculum in England.

PLAN Working Scientifically Skills for EYFS	PLAN Working Scientifically Skills for Key Stage 1
Show curiosity and ask questions	Asking questions
Make observations using their senses and simple equipment	Gathering data
Make direct comparisons	
Identify, sort and group	
Record their observations by drawing, taking photographs, using sorting rings or boxes and, in Reception, on simple tick sheets	Recording data
Talk about what they have done and found out	Drawing conclusions
Use their observations to help them to answer their questions	

Progression in working scientifically skills from Nursery to Key Stage 1
The following four tables expand on the mapping shown above by identifying the Development Matters statements from the different areas of learning for Nursery and Reception (shown in bold) that are linked to the PLAN Working Scientifically Skills for EYFS. The bullet points that follow the Development Matters statements are additional guidance that illustrate their application in a science context. For Key Stage 1, the PLAN Working Scientifically Skills are shown in bold with their associated key learning. Together, these provide a progression in working scientifically skills from Nursery, through Reception, to Key Stage 1.

The statements from Development Matters in *italics* in the tables below indicate that they feature more than once.

Nursery	Reception	Key Stage 1
Show curiosity and ask questions		**Asking questions**
Understand 'why' questions, like: "Why do you think the caterpillar got so fat?" (Communication and language) • 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.** (Communication and language) • While playing and exploring, the children ask 'I wonder…' questions. • With support, the children develop their ideas for answering their questions.	• Use a range of given question stems, such as: what; what if; why; when; who; and how; to ask questions about the objects, living things and processes they are exploring. • Construct a question based on a scenario or story the teacher has presented.

Nursery	Reception	Key Stage 1
Make observations using their senses and simple equipment **Make direct comparisons** **Identify, sort and group**		**Gathering data**
Use all their senses in hands-on exploration of natural materials. (Understanding the world) **Explore how things work.** (Understanding the world) **Use one-handed tools and equipment.** (Physical development) **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.** (Physical development) ***Make comparisons between objects relating to size, length, weight and capacity.*** *(Mathematics)* ***Compare quantities using language: 'more than', 'fewer than'.*** *(Mathematics)*	**Explore the natural world around them.** (Understanding the world) **Describe what they see, hear and feel whilst outside.** (Understanding the world) **Develop their small motor skills so that they can use a range of tools competently, safely and confidently.** (Physical development) **Count objects, actions and sounds.** (Mathematics) **Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.** (Communication and language) **Show resilience and perseverance in the face of challenge.** (Personal, social and emotional development)	• Talk about their observations of objects, materials and living things. • Talk about their observations when comparing objects, materials and living things. • Talk about their observations when describing changes. • When using a magnifying glass, adjust the position of the magnifying glass in order to see the enlarged image clearly. • When using a digital microscope, relate features on the enlarged view to the object. • Make direct comparisons of length and height. • Use bricks, lolly sticks etc. or paper strips to take non-standard measurements of length. • Use simple measuring equipment, such as teaspoons, pipettes, rulers, metre sticks etc.

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. (Personal, social and emotional development) • With support, explore the natural and 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 and made world using their 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 car? • They identify and name objects by matching them with pictures. • The children sort and group objects, sometimes using their own criteria.	

Nursery	Reception	Key Stage 1
Record their observations by drawing, taking photographs, using sorting rings or boxes and, in Reception, on simple tick sheets		**Recording data**
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.	***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.	• Use a camera to take photographs or videos to record their observations. • Record their observations using drawings. • Record their observations using labelled drawings. • Record their observations or comparisons in writing. • Physically group objects, materials and living things or their images by a criterion. • Physically group objects or materials according to the data they gather (classifying). • Use data they gather to physically rank objects or materials (comparative testing). • Add their data to a prepared table or simple Venn diagram.

• With support, they use sorting rings and boxes.		• Add pictures to a pictogram. • Add tally marks to a tally chart and count up the total number. • Make a physical block graph or bar chart by using bricks, lolly sticks etc. or paper strips with which they measured lengths or heights.

Nursery	Reception	Key Stage 1
Use their observations to help them to answer their questions		**Drawing conclusions**
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.	• Use their observations and simple secondary sources (e.g. identification sheets) to name living things they find in the local area. • Recognise 'biggest and smallest', 'best and worst' etc. from their data. • Give an answer to their scientific enquiry question that is consistent with the data they have gathered either through observations, measurements or from research. • Recognise that they can answer scientific enquiry questions in different ways.