LPDS National Curriculum
Assessment Materials

Lancashire
County
Council

LPDS National Curriculum Assessment Materials
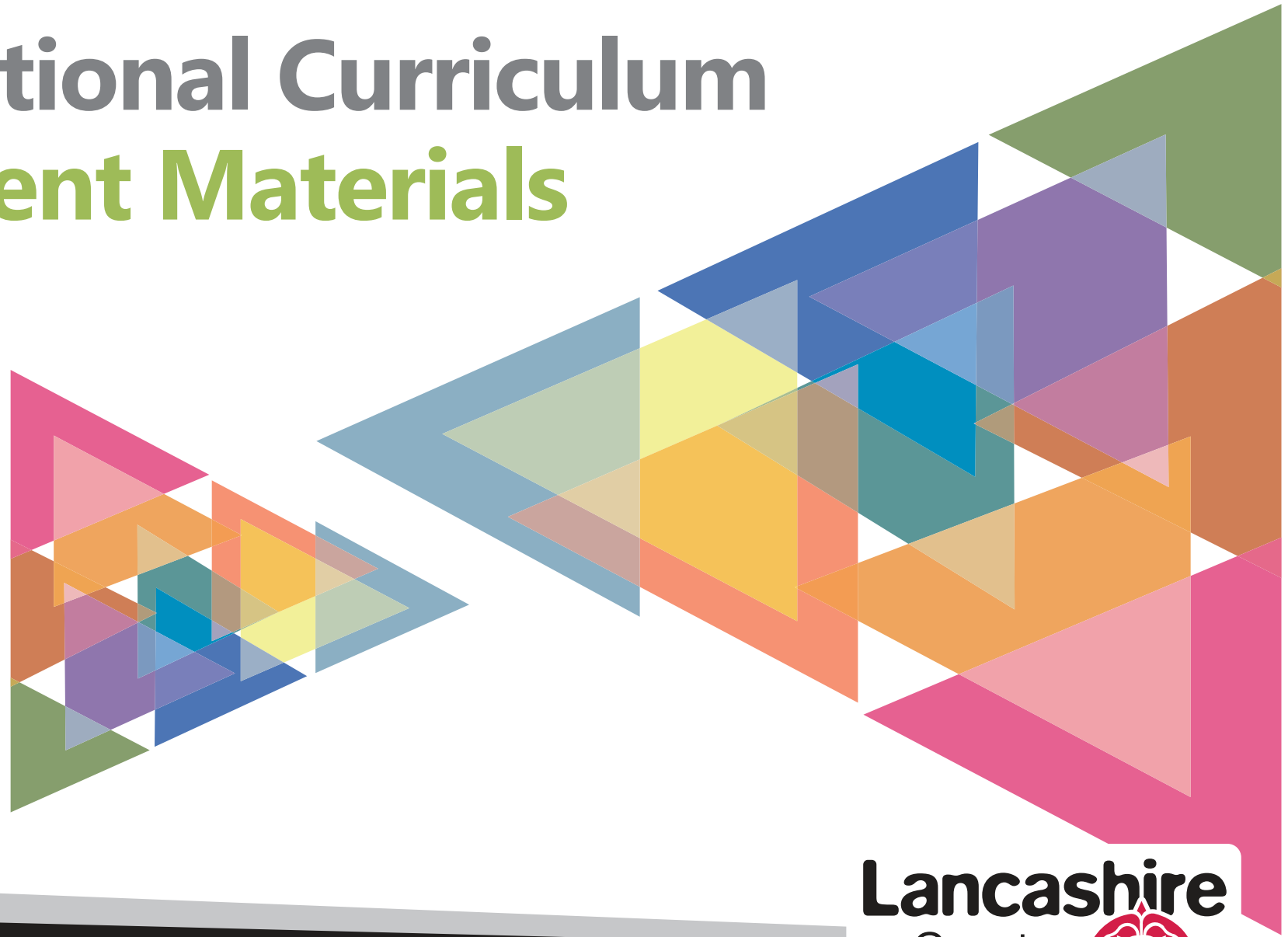## Overview of the Materials

Written by the Lancashire Professional Development Service (LPDS) Teaching and Learning Consultants, these assessment materials are directly linked to the expectations of National Curriculum 2014 and will enable class teachers and senior leaders to track the progress and attainment of children against 'Key Learning Indicators of Performance' (KLIPs) in Reading, Writing and Mathematics, 'Scientific Knowledge and Conceptual Understanding and Working Scientifically Skills' in Science and against 'End of Year Expectations' in the Foundation Subjects.

These materials have been written to inform planning and support high quality teaching and learning across the primary phase whilst at the same time providing a simple and time effective method of assessing the learning of children from Years 1 to 6 in Reading, Writing, Mathematics, Science and the Foundation Subjects.

These materials are compatible with the Lancashire Electronic Tracking tool and include:

Core Subjects

- English: Reading and Writing Key Learning Indicators of Performance (KLIPs)
- Mathematics: Key Learning Indicators of Performance (KLIPs)
- Science: Scientific Knowledge and Conceptual Understanding and Working Scientifically Skills

Foundation Subjects - End of Year Expectations

- Art and Design
- Computing
- Design and Technology
- Geography
- History
- Languages (KS2)
- Music
- Physical Education

LPDS National Curriculum Assessment Materials
Guidance for Using KLIPs: English

These materials have been written by Lancashire Professional Development Service (LPDS) Teaching and Learning Consultants for Primary English in conjunction with the aims and statutory requirements set out in the National Curriculum 2014.

What are the KLIPs?

The KLIPs, or **Key Learning Indicators of Performance**, have been developed from Lancashire's National Curriculum Support Materials, which detail the key learning in reading and writing for each year group. These key learning grids for each year group can be used to provide:

▶ detailed assessment information for the teacher to use to inform their future planning of next steps (formative);

▶ overall judgements which can be made more summatively (for example once a term), to enable senior leadership teams to track progress across the school, during the year. This will assist schools with self-evaluation and in informing discussions with others e.g. inspection teams, about attainment and progress;

▶ a means of informing parents about attainment and progress.

The underlined statements on the grids have been identified as **Key Learning Indicators of Performance** (KLIPs) as these have the greatest impact on the further development of skills and subsequent learning. Consequently, the **Key Learning Indicators of Performance** (KLIPs) play a particularly significant role in the assessment process.

How Do I Use KLIPs to Support Assessment in English?

The KLIPs approach is intended to be used for periodic assessment, in other words 'stepping back', perhaps termly, and asking the question 'How is this pupil performing in reading?' or 'How is this pupil performing in writing?'

The Process

▶ Consider the pupil's performance in relation to **all** of the key learning statements not just the KLIPs (the ones which have been underlined).

▶ Make a professional judgement as to whether the expectations have been achieved, highlighting statements, or partial statements to record judgements. If statements are highlighted termly, consider using different coloured highlighters each term to indicate where progress has been made.

▶ A child does not need to demonstrate an aspect of key learning a specific number of times for them to be assessed as having achieved it. However, they would be expected to **demonstrate and apply** the skill or knowledge **independently in different subjects or contexts**.

▶ When assessing writing, consider a range of evidence including narrative writing, non-fiction and pieces completed in other subjects. Think about the child as a writer; how effective is his/her writing in relation to its purpose and audience? Avoid merely 'spotting techniques' used, or using the key learning grid as a checklist.

▶ Assessing reading involves examining pupils' competence in both word reading and comprehension. Rich opportunities to gather evidence include guided reading sessions, phonics sessions, shared reading, drama, and use of reading journals. Look out also for wider opportunities to gather evidence such as reading in other subjects, class assemblies and personal reading. Texts need to be suitable for the age-related grid which is being used. For example, if a Year Three key learning grid is being used, texts would need to be Year Three appropriate.

▶ Assessment information, highlighted on the grids, should be used to inform the teacher's planning so that gaps and next steps can be addressed.

Making a Summative Judgement Using the KLIPs Approach

▶ Make a judgement about the child's current position in learning, based on a balance of strengths and aspects that need further learning opportunities. Consider whether the child is 'on track' to achieve the year group expectations by the end of the academic year.

▶ The three definitions used here are offered as guidance to teachers making 'best fit' judgements, at the end of each term:

　○ **Entering** - starting to demonstrate some of the features of this year group's expectations (although these may not yet be evident in independent writing). Typically what would be expected if a child was on track at the end of the autumn term in a particular year group (e.g. a child typically working at what you would expect, at end of autumn term Y3, would be 'entering, Y3').

　○ **Developing** – demonstrating more of the features of this year group's expectations. Some learning in some aspects might not be fully embedded across all situations. Typically what would be expected if a child was on track at the end of the spring term in a particular year group (e.g. a child typically working at what you would expect, at end of spring term Y3, would be 'developing, Y3').

　○ **Secure** - demonstrating most (or indeed all) of the features of this year group's expectations. To attain a secure judgement, the child must have achieved all of the **key learning indicators of performance** (KLIPS, underlined statements) unless they have a specific learning difficulty that prevents them from doing so. Their typical knowledge/understanding/skill demonstrated is behaviour which is **embedded**. Typically what would be expected if a child was on track at the end of the summer term in a particular year group (e.g. a child typically working at what you would expect for a typical child at the end of Y3, would be 'secure, Y3').

▶ There are no set percentages or numbers of statements which need to be highlighted in order to determine whether a child is entering, developing or secure in relation to a particular age group expectation. Profiles of children judged to be 'developing' for instance could be very different.

Word Reading	Comprehension
As above and: ▶ Read aloud accurately books that are consistent with their developing phonic knowledge. ▶ Apply phonic knowledge and skills as the route to decode words. ▶ Respond speedily with the correct sound to grapheme for the 44 phonemes. ▶ Recognise and use the different ways of pronouncing the same grapheme; e.g. *ow* in *snow* and *cow.* ▶ Read accurately by blending sounds in unfamiliar words. ▶ Read common exception words, noting tricky parts (see below). ▶ Read words containing *–s, -es, -ing, -ed, -er, -est* endings. ▶ Split two and three syllable words into the separate syllables to support blending for reading. ▶ Read words with contractions e.g. *I'm, I'll, we'll* and understand that the apostrophe represents the omitted letter. ▶ Develop fluency, accuracy and confidence by re-reading books. ▶ Read more challenging texts using phonics and common exception word recognition.	As above and: **Developing pleasure in reading and motivation to read** ▶ Listen to and discuss a range of texts at a level beyond that at which they can read independently, including stories, non-fiction and poems. ▶ Relate texts to own experiences. ▶ Recognise and join in with language patterns and repetition. ▶ Use patterns and repetition to support oral retelling, e.g. fairy stories, traditional tales and stories by well-known authors. ▶ Orally retell familiar stories in a range of contexts e.g. *small world, role play, storytelling.* ▶ Enjoy and recite rhymes and poems by heart. ▶ Make personal reading choices and explain reasons for choices. **Understanding books which they can read themselves and those which are read to them** ▶ Introduce and discuss key vocabulary, linking meanings of new words to those already known. ▶ Activate prior knowledge e.g. *what do you know about minibeasts?* ▶ Check that texts make sense while reading and self-correct. ▶ Develop and demonstrate their understanding of characters and events through role play and drama, drawing on language from the text. ▶ Give opinions and support with reasons e.g. *I like the Little Red Hen because she…* ▶ Explain clearly their understanding of what is read to them. ▶ Demonstrate understanding of texts by answering questions related to who, what, where, when, why, how. ▶ Identify and discuss the main events in stories. ▶ Identify and discuss the main characters in stories. ▶ Recall specific information in fiction and non-fiction texts. ▶ Locate parts of text that give particular information, e.g. *titles, contents page and labelled diagram.* ▶ Discuss the title and how it relates to the events in the whole story e.g. *Peace at Last by Jill Murphy.* ▶ Make basic inferences about what is being said and done. ▶ Make predictions based on what has been read so far. **Participating in discussion** ▶ Listen to what others say. ▶ Take turns.

These materials have been written by Lancashire Professional Development Service (LPDS) Teaching and Learning Consultants for Primary Mathematics in conjunction with the aims and statutory requirements set out in the National Curriculum 2014.

What are the KLIPs?

The KLIPs, or **Key Learning Indicators of Performance**, have been developed from Lancashire's National Curriculum Support Materials which detail the key learning in mathematics for each year group. These key learning grids for each year group can be used to provide:

▶ detailed assessment information for the teacher to use to inform their future planning of next steps (formative);

▶ overall judgements which can be made more summatively (for example once a term), to enable senior leadership teams to track progress across the school, during the year. This will assist schools with self-evaluation and in informing discussions with others e.g. inspection teams, about attainment and progress;

▶ a means of informing parents about attainment and progress.

The underlined statements on the grids have been identified as **Key Learning Indicators of Performance** (KLIPs) as these have the greatest impact on the further development of skills and subsequent learning. Consequently, the **Key Learning Indicators of Performance** (KLIPs) play a particularly significant role in the assessment process.

How Do I Use KLIPs to Support Assessment in Mathematics?

The KLIPs approach is intended to be used for periodic assessment, in other words 'stepping back', perhaps termly, and asking the question 'How is this pupil performing in mathematics?'

The Process

▶ Consider the pupil's performance in relation to **all** of the key learning statements not just the KLIPs (the ones which have been underlined).

▶ Make a professional judgement as to whether the expectations have been achieved, highlighting statements, or partial statements to record judgements. If statements are highlighted termly, consider using different coloured highlighters each term to indicate where progress has been made.

▶ A child does not need to demonstrate an aspect of key learning a specific number of times for them to be assessed as having achieved it. However, they would be expected to **demonstrate and apply** the skill or knowledge **independently, consistently and in a range of contexts**. The contexts could be within mathematics, for example calculation when working out perimeter, or within other subjects, for example, interpreting data created in a science lesson.

▶ For each statement, teachers should also consider evidence that has not been scaffolded through immediate direct teaching or through over reliance on tools such as process success criteria.

▶ Assessing mathematics involves examining pupils' competence in both the concept itself and its application into reasoning and problem solving. Rich opportunities to gather evidence include guided sessions, starters away from where the concept has been originally taught, discussion between talk partners and learning across the curriculum.

▶ Assessment information, highlighted on the grids, should be used to inform the teacher's planning so that gaps and next steps can be addressed.

Making a Summative Judgement Using the KLIPs Approach

▶ Make a judgement about the child's current position in learning, based on a balance of strengths and aspects that need further learning opportunities. Consider whether the child is 'on track' to achieve the year group expectations by the end of the academic year.

▶ The three definitions used here are offered as guidance to teachers making 'best fit' judgements, at the end of each term:

○ **Entering** - starting to demonstrate some of the features of this year group's expectations (although these may not yet be evident in reasoning and problem solving or be fully meeting the end of year expectation, e.g. a Year One child at the end of the autumn term may be competent with counting to 50, but not yet to 100). Typically what would be expected if a child was on track at the end of the autumn term in a particular year group (e.g. a child typically working at what you would expect, at end of autumn term Y3, would be 'entering, Y3').

○ **Developing** – demonstrating more of the features of this year group's expectations. Some learning in some aspects might not be fully embedded across all situations. Typically what would be expected if a child was on track at the end of the spring term in a particular year group (e.g. a child typically working at what you would expect, at end of spring term Y3, would be 'developing, Y3').

○ **Secure** - demonstrating most (or indeed all) of the features of this year group's expectations. To attain a secure judgement, the child must have achieved all of the **key learning indicators of performance** (KLIPS, underlined statements) unless they have a specific learning difficulty that prevents them from doing so. Their typical knowledge/understanding/skill demonstrated is behaviour which is **embedded**. Typically what would be expected if a child was on track at the end of the summer term in a particular year group (e.g. a child typically working at what you would expect for a typical child at the end of Y3, would be 'secure, Y3').

▶ There are no set percentages or numbers of statements which need to be highlighted in order to determine whether a child is entering, developing or secure in relation to a particular age group expectation. Profiles of children judged to be 'developing' for instance could be very different.

Number – number and place value	Number – addition and subtraction	Number – multiplication and division

▶ Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.
▶ Read and write numbers to at least 100 in numerals and in words.
▶ Recognise the place value of each digit in a two-digit number (tens, ones).
▶ Identify, represent and estimate numbers using different representations, including the number line.
▶ *Partition numbers in different ways (e.g. 23 = 20 + 3 and 23 = 10 + 13).*
▶ Compare and order numbers from 0 up to 100; use <, > and = signs.
▶ *Find 1 or 10 more or less than a given number.*
▶ Round numbers to at least 100 to the nearest 10.
▶ *Understand the connection between the 10 multiplication table and place value.*
▶ *Describe and extend simple sequences involving counting on or back in different steps.*
▶ Use place value and number facts to solve problems.
	▶ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting).*
	▶ *Select a mental strategy appropriate for the numbers involved in the calculation.*
	▶ Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.
	▶ *Understand subtraction as take away and difference (how many more, how many less/fewer).*
	▶ Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 *(bonds totalling 5, 10 and 20).*
	▶ *Recall and use number bonds for multiples of 5 totalling 60 (to support telling time to nearest 5 minutes).*
	▶ Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
	  - a two-digit number and ones.
	  - a two-digit number and tens.
	  - two two-digit numbers.
	  - adding three one-digit numbers.
	▶ Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
	▶ Solve problems with addition and subtraction *including with missing numbers:*
	  - using concrete objects and pictorial representations, including those involving numbers, quantities and measures.
	  - applying their increasing knowledge of mental and written methods.
		▶ *Understand multiplication as repeated addition and arrays.*
		▶ *Understand division as sharing and grouping and that a division calculation can have a remainder.*
		▶ Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.
		▶ Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
		▶ *Derive and use doubles of simple two-digit numbers (numbers in which the ones total less than 10).*
		▶ *Derive and use halves of simple two-digit even numbers (numbers in which the tens are even).*
		▶ Calculate mathematical statements for multiplication *using repeated addition)* and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.
		▶ Solve problems involving multiplication and division *(including those with remainders),* using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

These materials have been written by Lancashire Professional Development Service (LPDS) Teaching and Learning Consultants for Primary Science, which remains a core subject, in conjunction with the aims and the end of age phase (KS1, lower KS2, upper KS2) statutory requirements for 'Year Group Scientific Knowledge and Conceptual Understanding and Working Scientifically Skills' set out in the National Curriculum 2014.

The scientific knowledge and conceptual understanding for each year group show the National Curriculum 2014 statutory requirements for each unit. These can be used to support the assessment of knowledge and concepts across the primary phase.

The 'working scientifically skills' for each year group are presented in two grids. In each grid, the titles of each column (the white text in the orange boxes) are the statutory requirements for the end of KS1, end of lower KS2 or the end of upper KS2.

The grids show the range of 'working scientifically' skills as follows:

Grid 1
- Exploring / Observing
- Grouping and Classifying
- Questioning
- Research
- Modelling
- Collaborating

Grid 2
- Planning and Testing
- Using Equipment and Measures
- Communicating
- Conclusions / Considering the evidence:
  - Describing Results
  - Explaining Results
  - Trusting Results

(Please note the 'Modelling' and 'Collaborating' columns are non-statutory but support effective provision).

These materials can be used to assess science skills in conjunction with any curriculum including the LPDS National Curriculum Support Materials.

The 'working scientifically skills' grids will assist teachers with their understanding of what the skills might look like in different year groups and thus support them in making their teacher assessment judgements against the statutory statements from the National Curriculum 2014.

The National Curriculum Programmes of Study for each year group and advice for good science teaching have been used to support teachers with what 'working scientifically' looks like for the different types of skill in each year group. These have been made into skills ladders so teachers can see how the learning for each year group fits within the larger picture of progression.

The skills ladders can be used to help teachers make a judgement during the year as to whether they are **on track** to achieve the end of year expectation and at the end of the year as to whether children have achieved the expectations for that year group.

A child may not achieve every single bullet point of learning - teachers should make a judgement on a child's strengths and weaknesses in relation to skill development. Greater emphasis should be placed on the statements that have been underlined. Key vocabulary for 'working scientifically' has been highlighted in bold text in each year to support its progression and use throughout the primary phase.

The detail in the grids can be used to help support planning but **it is the underlined statements and the titles for each column** which provide a summary against which teachers can make an end of term / end of year judgement. For example, when considering the skill of questioning for a child in Y4, a teacher can consider all the text highlighted in the Y4 part of the questioning column but their judgement regarding whether the child is working at year group expectation is ultimately based on the statutory title 'LKS2 - can ask a relevant question' rather than how many of the bullet points are 'ticked off'.

It is not expected that every single bullet point in the 'working scientifically skills' grids is achieved but rather that these are used to support skill progression and assist in making a judgement against the statutory column titles.

It is important to note that a child can be on track to meet end of year expectations but can have a particular strength or need extra support with an aspect or skill. If this is a significant strength (or a significant weakness) across the majority of the skills then they could be assessed at working above (or below) year group expectation.

Below are some of the areas where a child might show particular strengths or where they might need more support in their learning.
- **Numeracy Skills within Science:** Data, measures, scales, tables, graphs, noticing patterns.
- **Literacy Skills within Science:** Using scientific vocabulary and common language effectively in sentences (verbally and written), recording their learning, background knowledge from their reading experience.
- **Thinking and Behaving like a Scientist:** Questioning, ideas and suggestions, planning investigations effectively, making decisions about what to do, carrying out practical science activities, linking the big ideas.

Remember, when making a judgement regarding skills, the titles in each column of the skills grids are for end of Y2, Y4 and Y6. For children in Y1, Y3 and Y5 teachers are using these to judge if they are **on track** to meet these expectations. They might not be there yet as they have another year to continue to develop them. The detailed content in each year group supports the year group expectation and provides evidence of strengths and areas requiring additional support for the next teacher within the age phase.

There is no specific number of times a child needs to demonstrate a particular skill. Teachers should use their professional judgement and consider whether a child can demonstrate and apply the skills specified for their year group both **consistently** and **independently** and **in different contexts**.

For mixed age classes, the scientific knowledge and conceptual understanding for a unit becomes the knowledge expectation for the whole class. For example, a mixed Y3 / 4 class might be learning about plants from the Y3 National Curriculum Programme of Study. The knowledge from this becomes the year group expectation for both the Y3 children **and** the Y4 children. The 'working scientifically' grids can then be used to ensure differentiation between the two age phases so teachers can ensure the skills are appropriate to the two different year groups being taught.

Science
Scientific Knowledge and Conceptual Understanding: Year 1 Expectations

Please Note: Much of the learning in Year 1 can be done throughout the year using the school and the local environment. For example plants can be observed to make a linked to seasonal change and weather at various different times. Materials could be linked to a different creative theme throughout the year. Key learning can also be covered as a blocked science unit in its own right to introduce or consolidate learning at other times.

Plants: Common Names and Basic Structure	Animals - Humans	Animals - Other Animals
- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. - Identify and describe the basic structure of a variety of common flowering plants, including trees (at least: flower, leaf, root, stem, trunk, seed, branch and petal).	- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. - Recognise that humans are animals. - Compare and describe differences in their own features (eye, hair, skin colour, etc.). - Recognise that humans have many similarities.	- Identify and name a variety of common animals including some fish, some amphibians, some reptiles, some birds and some mammals. - Identify and name a variety of common animals that are carnivores, herbivores and omnivores (i.e. according to what they eat). - Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, and including pets). - Find out and describe how animals look different to one another. - Group together animals according to their different features. - Recognise similarities between animals: Structure: head, body, way of moving, senses, body covering, tail. - Animals have senses to explore the world around them and to help them to survive. - Recognise that animals need to be treated with care and sensitivity to keep them alive and healthy. - Animals are alive; they move, feed, grow, use their senses and reproduce.

Material Properties – Everyday Materials	Light and Astronomy – Seasonal Change
- Distinguish between an object and the material from which it is made. - Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, rock, brick, paper and cardboard. - Describe the simple physical properties of a variety of everyday materials. - Compare and group together a variety of everyday materials on the basis of their simple physical properties.	- Observe and describe changes across the four seasons. - Observe and describe weather associated with the seasons and how day length and temperature varies.

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	EXPLORING / OBSERVING	GROUPING AND CLASSIFYING	QUESTIONING	RESEARCH	MODELLING	COLLABORATING
Year 6	▪ Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations (linked to Y6 PoS). ▪ Identify changes that have occurred over a very long period of time (evolution) and discuss how changes have impacted the world. ▪ Explore more abstract systems / functions / changes / behaviours and record their understanding of these (e.g. the relationship between diet, exercise, drugs, lifestyle and health; evolutionary changes; how light travels).	▪ Recognise the importance of classification to the scientific world and form a conclusion from their sorting and classifying. ▪ Compare and contrast more complex processes, systems, functions (e.g. sexual and asexual reproduction). ▪ Construct a classification key / branching database using more than two items. ▪ Compare and contrast things beyond their locality and discuss advantages / disadvantages, pros / cons of the similarities and differences. ▪ Use research* to identify and classify things. ▪ Use classification systems, keys and other information records [databases] to help classify or identify things.	▪ Recognise scientific questions that do not yet have definitive answers (linked to Y6 PoS). ▪ Refine a scientific question to make it testable i.e. ask a testable question which includes the change and measure variables, e.g. what would happen to … if we changed…? e.g. What effect would we have on … if we…? e.g. How would exercise affect the pulse rate? ▪ Use observations to suggest a further (testable or research) question. ▪ Independently ask a variety of scientific questions and decide the type of enquiry needed to answer them.	▪ Research how scientific ideas have developed over time and had an impact on our lives. ▪ Use evidence from a variety of sources to justify their ideas ▪ Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. ▪ Interview people to find out information	▪ Make / perform and use their own versions of simple models to describe and explain scientific ideas (e.g. circulatory system drama, periscopes to explain how light travels, burglar alarm to explain components in a circuit).	▪ Propose their own ideas and make decisions with agreement in a group. ▪ Support, listen to and acknowledge others in the group. ▪ Check the clarity of each other's suggestions. ▪ Build on / add to someone else's idea to improve a plan or suggestion. ▪ Understand that it is okay to disagree with their peers and offer reasons for their opinion.
Year 5	▪ Use their developing scientific knowledge and understanding and relevant scientific language and terminology to discuss, communicate and explain their observations (incl. more abstract ideas from Y5 PoS (e.g. friction, air resistance, forces, Earth and space, reversible and irreversible changes). ▪ Evaluate their observations and suggest a further test, offer another question or make a **prediction.** ▪ Observe (including changes over time) and suggest a reason for what they notice.	▪ Suggest reasons for similarities and differences. ▪ Compare and contrast things beyond their locality and use these similarities and differences to help to classify (e.g. features of animals, life cycles of different living things, melting compared with dissolving, etc). ▪ Use secondary sources of information to identify and classify. ▪ Decide which sources of information (and / or equipment and / or test) to help identify and classify.	▪ Recognise scientific questions that do not yet have definitive answers (linked to Y5 PoS). ▪ Refine a scientific question so that it can be tested e.g. 'What would happen to… if we changed…?' ▪ Decide whether their questions can be answered by researching or by testing. ▪ Independently ask their own scientific questions taking some ownership for finding out the answers.	▪ Find out how scientific ideas have changed / developed over time (linked to Y5 PoS). ▪ Articulate and explain findings from their research using scientific knowledge and understanding. ▪ Make decisions about which information to use from a wide range of sources.	▪ Perform / create simple models to exemplify scientific ideas using scientific terminology where appropriate (e.g. spheres to represent movements of the Sun and Earth, solar system models, shadow clocks, a simple lever or mechanism).	▪ Propose their own ideas and make decisions with agreement in a group. ▪ Support, listen to and acknowledge others in the group e.g. Yes. I prefer that one too. ▪ Check the clarity of each other's suggestions e.g. are you saying you think this one is a herbivore? ▪ Build on / add to someone else's idea to improve a plan or suggestion. ▪ Understand that it is okay to disagree with their peers and offer a reasons for their opinion.
Year 4	▪ Suggest their own ideas on a concept and compare these with what they observe / find out. ▪ Use observations to suggest what to do next. ▪ Discuss ideas and develop descriptions from their observations using relevant scientific language and vocabulary (from Y4 PoS). ▪ Observe and record relationships between structure and function or between different parts of a processes (linked to Y4 PoS). ▪ Observe and record changes / stages over time (linked to Y4 PoS).	▪ Make a simple guide to local living things. ▪ Use guides or simple keys to classify / identify [animals, flowering plants and non-flowering plants]. ▪ Use their observations to identify and classify. ▪ Begin to give reasons for these similarities and differences. ▪ Record similarities as well as differences and / or changes related to simple scientific ideas or processes or more complex groups of objects / living things / events (e.g. evaporation and condensation, different food chains, different electrical circuits).	▪ Ask / raise their own relevant questions with increasing confidence and independence that can be explored, observed, tested or investigated further. ▪ Ask questions such as 'What will happen if…?' or 'What if we changed…? (linked with Y4 PoS). ▪ Choose / select a relevant question that can be answered [by research or experiment / test].	▪ Make decisions about which information to use from a wide range of sources and make decisions about how to present their research. ▪ Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.	▪ Make a visual representation or a model of something to represent something they have seen or a process that is difficult to see. ▪ Suggest their own ideas on a concept and compare these with models or images.	▪ Make some decisions about an idea within a group (e.g. I think we should find out by testing…) ▪ Increasingly support, listen to and acknowledge others in the group. ▪ Build on / add to someone else's idea to improve a plan. ▪ Understand that it is okay to disagree with their peers and offer reasons for their opinion.
	EXPLORING / OBSERVING *UKS2 - Developing a deeper understanding of a wide range of scientific ideas and encountering more abstract ideas.* *LKS2 - Developing their own ideas and their understanding of the world around them.*	**GROUPING AND CLASSIFYING** *UKS2 - Compare and contrast a variety of examples linked to UKS2 PoS.* *LKS2 - Compare and contrast a variety of examples linked to LKS2 PoS.*	**QUESTIONING** *UKS2 - Asking their own questions about scientific phenomena.* *LKS2 - Asking relevant questions.*	**RESEARCH** *UKS2 – Summarise research from a wide variety of sources and recognising that scientific ideas change and develop over time.* *LKS2 - Finding things out using a wide range of secondary sources of information.*	**MODELLING** *Non Statutory* *Using dance, drama or a visual aid to represent science in the real world.*	**COLLABORATING** *Non Statutory* *Interacting effectively as part of a group.*

KS1 KS2

These materials have been written by Lancashire Professional Development Service (LPDS) Teaching and Learning Consultants for the foundation subjects in conjunction with the aims and statutory requirements set out in the National Curriculum 2014.

The 'end of year expectations' for each subject have been written as statements for each year group and are presented in a grid. This will enable teachers to reflect on the expectations for a specific year group, whilst being aware of the expectations for the year groups below and above.

The titles at the bottom of the grids have been taken from the National Curriculum 2014 requirements for KS1 and KS2. Communication has been included in some subject grids as the National Curriculum states '*Teachers should develop pupils' spoken language, reading, writing and vocabulary as integral aspects of the teaching of every subject*'. *(NC2014 p10)*

Teachers can use these statements to assess progress and to make an accurate judgement on a child's attainment at the end of each year. Using the end of year expectation statements to make an overall judgement about a child's achievement in each of the foundation subjects will support class teachers, subject leaders and senior managers to track a child's progress through a key stage in relation to the programmes of study requirements set out in National Curriculum 2014.

When making a judgement as to whether a child has achieved the year group statements in each of the foundation subjects, teachers should build their knowledge of what a child can do over the course of the year, and then consider whether a child can apply and understand the skills and processes, knowledge, understanding specified in the relevant programme of study, consistently and independently in different contexts.

The statements within each year group are not hierarchical, and should not be used as a checklist. Evidence from a range of contexts (observations, pupil work, discussion, collaboration, planning, etc.) should be used to formulate a 'best fit' judgement as to whether a child has achieved the year group expectations outlined across the columns in the grid.

The end of year group expectations are cumulative – what is learnt in one year group should continue to be used in the next.

The assessment grids should be used in conjunction with the programmes of study specified in the National Curriculum 2014 for each foundation subject and identified within a school's own curriculum. Teachers need to reflect on the key learning for each foundation subject as outlined in the curriculum to ensure effective teaching and assessment is in place across the primary phase.

Computing
End of Year Expectations

Year 6	▶ Be competent users of technology using it safely, respectfully and responsibly and know about digital footprints and 'strong' passwords. ▶ Demonstrate that they can identify the risks involved with content and contact and they know a wide range of ways of reporting any concerns they have. ▶ Understand what acceptable and unacceptable online behaviour is. ▶ Use strategies to verify and evaluate the reliability and accuracy of information on the internet and understand what copyright and plagiarism is and how it relates to their work.	▶ Independently select, use and combine a wide range of software on a variety of devices. ▶ Design and create a range of digital assets such as programs, systems and multimedia content for a defined purpose and audience. ▶ Use advanced searches including the use of operators. ▶ Create spreadsheet models to investigate real life problems, using their knowledge to make predictions.	▶ Know how search engines work and what 'ranking' is when related to search engines. ▶ Design and create more complex programs using sequence, repetition, selection and variables appropriately. ▶ Develop their computational thinking can demonstrate that they can decompose and evaluate their tasks and correct errors in their algorithms and programs. ▶ Be confident in their knowledge of inputs and outputs and plan and write programs to solve tasks to control external devices such as sensors and motors. ▶ Know how different computer networks work, including the roles of the components and the opportunities and benefits that they offer for communication and collaboration. ▶ Understand the difference between the internet and internet services.
Year 5	▶ Use technology safely, respectfully and responsibly and continue to develop skills to identify risks involved with contact and content including developing an understanding of digital footprints. ▶ Know a range of ways of reporting concerns about content and contact involving the internet and other communication technologies. ▶ Understand what acceptable and unacceptable online behaviour is. ▶ Use strategies to verify the reliability and accuracy of information on the internet and understand copyright.	▶ Select, use and combine a range of software and use a wider range of devices to create a variety of digital assets such as programs, systems, databases, spreadsheets and multimedia content for a defined purpose. ▶ Understand about the use of operators in searching and continue developing their effective search techniques by using Boolean operators in their searches. ▶ Create simple spreadsheet models to investigate real life problems.	▶ Design and write programs using sequence, repetition, selection and variables. ▶ Develop greater understanding of how to use selection and repetition in more complex programs. ▶ Understand how search engines work. ▶ Further develop their computational thinking showing they can plan and decompose tasks; explain how the algorithms they write work and correct errors in their programs. ▶ Plan and write programs to control external devices such as sensors and motors and explain about the inputs and outputs used. ▶ Have an understanding of how a computer network works and the opportunities that it offers for communication and collaboration.
Year 4	▶ Use technology respectfully, responsibly and safely, knowing how to keep their information and passwords secure. ▶ Know different ways of reporting concerns about content and contact involving the internet and other communication technologies. ▶ Have a greater understanding of what is acceptable and unacceptable online behaviour. ▶ Start to develop strategies to verify the reliability and accuracy of information on the internet and develop an awareness of copyright.	▶ Use and combine a variety of software and devices with increasing independence, to create a range of digital assets such as programs, databases, systems and multimedia content. ▶ Understand how Boolean operators can change searches and select appropriate information for their tasks. ▶ Use models and simulations to produce graphs and explore patterns and relationships.	▶ Design and write more complex algorithms and programs using sequence, repetition and selection. ▶ Further develop their computational thinking to help debug their programs and design and solve problems and tasks. ▶ Have a simple understanding of how search engines work. ▶ Develop their understanding of inputs and outputs further, demonstrating how they can use programs to control external devices such as sensors, motors and robots. ▶ Understand the difference between the internet and World Wide Web.

KS1 KS2

Year					
Year 6	▶ Plan the sequence of work. ▶ Devise step by step plans which can be read / followed by someone else. ▶ Use exploded diagrams and cross-sectional diagrams to communicate ideas.	▶ Make prototypes. ▶ Use researched information to inform decisions. ▶ Produce detailed lists of ingredients / components / materials and tools. ▶ Refine their product – review and rework / improve.	▶ Identify the strengths and weaknesses of their design ideas. ▶ Report using correct technical vocabulary. ▶ Discuss how well the finished product meets the design criteria having tested on/discussed outcomes with the user. ▶ Understand how key people have influenced design in a variety of contexts. ▶ Investigate key events and individuals in design and technology.	▶ Use the correct vocabulary appropriate to the project. ▶ Join materials using appropriate methods. ▶ Create 3=-D textile products using pattern pieces. ▶ Understand pattern layout with textiles. ▶ Cut strip wood, dowel, square section wood accurately to 1mm. ▶ Build frameworks to support mechanisms. ▶ Stiffen and reinforce complex structures. ▶ Use mechanical systems such as cams, pulleys and gears. ▶ Use electrical systems such as motors and switches. ▶ Program, monitor and control using ICT.	▶ Understand and apply the principles of a healthy and varied diet. ▶ Choose ingredients to support healthy eating choices when designing their food products. ▶ Prepare and cook a variety of mostly savoury dishes using a range of cooking techniques.
Year 5	▶ Record ideas using annotated diagrams. ▶ Use models, kits and drawings to help formulate design ideas. ▶ Sketch and model alternative ideas. ▶ Decide which design idea to develop.	▶ Develop one idea in depth. ▶ Select from and use a wide range of tools. ▶ Cut accurately and safely to a marked line. ▶ Select from and use a wide range of materials.	▶ Research and evaluate existing products. ▶ Consider user and purpose. ▶ Consider and explain how the finished product could be improved related to design criteria. ▶ Investigate key events and individuals in design and technology.		▶ Join and combine a widening range of ingredients. ▶ Select and prepare foods for a particular purpose. ▶ Know where and how ingredients are grown and processed.
Year 4	▶ Record the plan by drawing using annotated sketches. ▶ Use prototypes to develop and share ideas. ▶ Consider aesthetic qualities of materials chosen. ▶ Use CAD where appropriate.	▶ Prepare pattern pieces as templates for their design. ▶ Select from techniques for different parts of the process.	▶ Draw / sketch existing products in order to analyse and understand how products are made. ▶ Identify the strengths and weaknesses of their design ideas in relation to purpose / user. ▶ Consider and explain how the finished product could be improved. ▶ Investigate key events and individuals in design and technology.	▶ Use an increasingly appropriate technical vocabulary for tools materials and their properties. ▶ Understand seam allowance. ▶ Prototype a product. ▶ Sew on buttons and make loops. ▶ Strengthen frames with diagonal struts. ▶ Measure and mark square section, strip and dowel accurately to 1cm. ▶ Incorporate a circuit into a model. ▶ Use electrical systems such as switches bulbs and buzzers. ▶ Use ICT to control products. ▶ Use linkages to make movement larger or more varied.	▶ Make healthy eating choices – use the *Eatwell plate*. ▶ Understand seasonality. ▶ Know where and how ingredients are reared and caught. ▶ Prepare and cook using different cooking techniques.

KS1 KS2

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