Guidance and Support Tool

THE ST. MARY'S PARTNERSHIP

Disadvantaged Pupil Strategy

Improving outcomes; accelerating life chances

MASON MOOR PRIMARY SCHOOL

ST MARY'S CE PRIMARY SCHOOL

Bitterne CE Primary

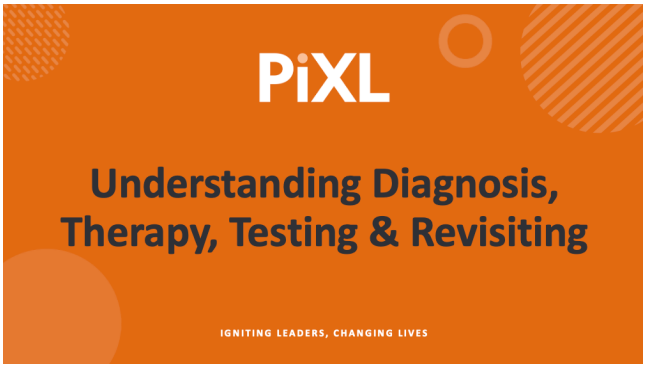
VALENTINE PRIMARY SCHOOL

Research and leader-driven action planning

This strategy is grounded in Education Endowment Foundation (EEF) research and the school's implementation framework, ensuring disadvantaged pupils are prioritised for rapid academic progress across St. Mary's Partnership of schools.

Effective resources and trusted tools for implementation

The Partnership uses a consistent set of tools and resources to enable and enact change. These are proven, through impact across the group, as well as their national standing within the field of education.



Since joining the partnership, all schools have become members of PiXL (Partners in Excellence).

The membership provides teachers will a suite of support tools for diagnosis and therapy. In addition, the schools utilise the suite of summative assessments – enabling us to benchmark pupils' learning locally and nationally.

The programme advocates teaching children 'therapies' as opposed to 'interventions'.

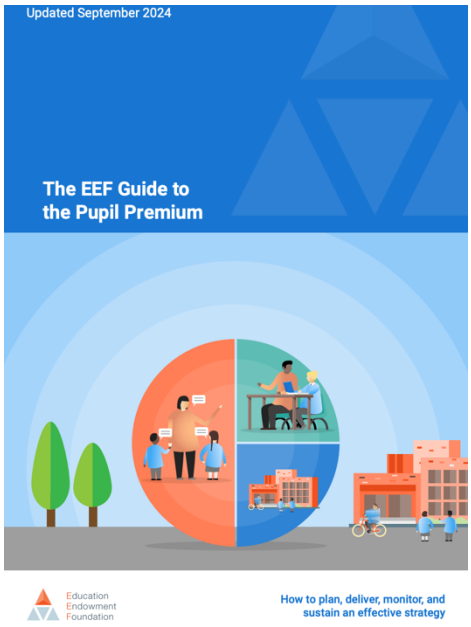
Publications, from the PiXL network, spotlight effective practice and case studies that demonstrate impact on school-based issues that support improvement.

In October 2024, PiXL launched the Insights research related specifically to empowering disadvantaged children.

The research highlights strong practice across a host of improvement areas:

- Considering ways to target key cohorts (such as Year 6)
- Understanding the role of coaching and mentoring.
- Developing skills outside of the classroom.
- Literacy improvements.

The case studies enable leaders to engage in meaningful action research. Understanding the context and impact of similar schools, enables a 'can do' attitude to support leaders in making effective change across our group.



Threaded through and referred to in each section of the 'Implementation Framework' and our five areas for development for the school year.

The EEF underpins research across a range of areas, pertinent to school improvement. These are nationally verified through 1-2 years of study in research trials, with impact and effectiveness grades available to indicate how likely they may improve an area.

The EEF Guide to Pupil Premium supports schools in devising the strategy for utilising funding to actively improve pupil outcomes.

Benchmarked with completing the DFE's 3-yearly plan and evaluation document, this encompasses all of the critical thinking required to securely improving outcomes for disadvantaged children.

DTTR – Diagnosis, Therapy, Testing, Revisit

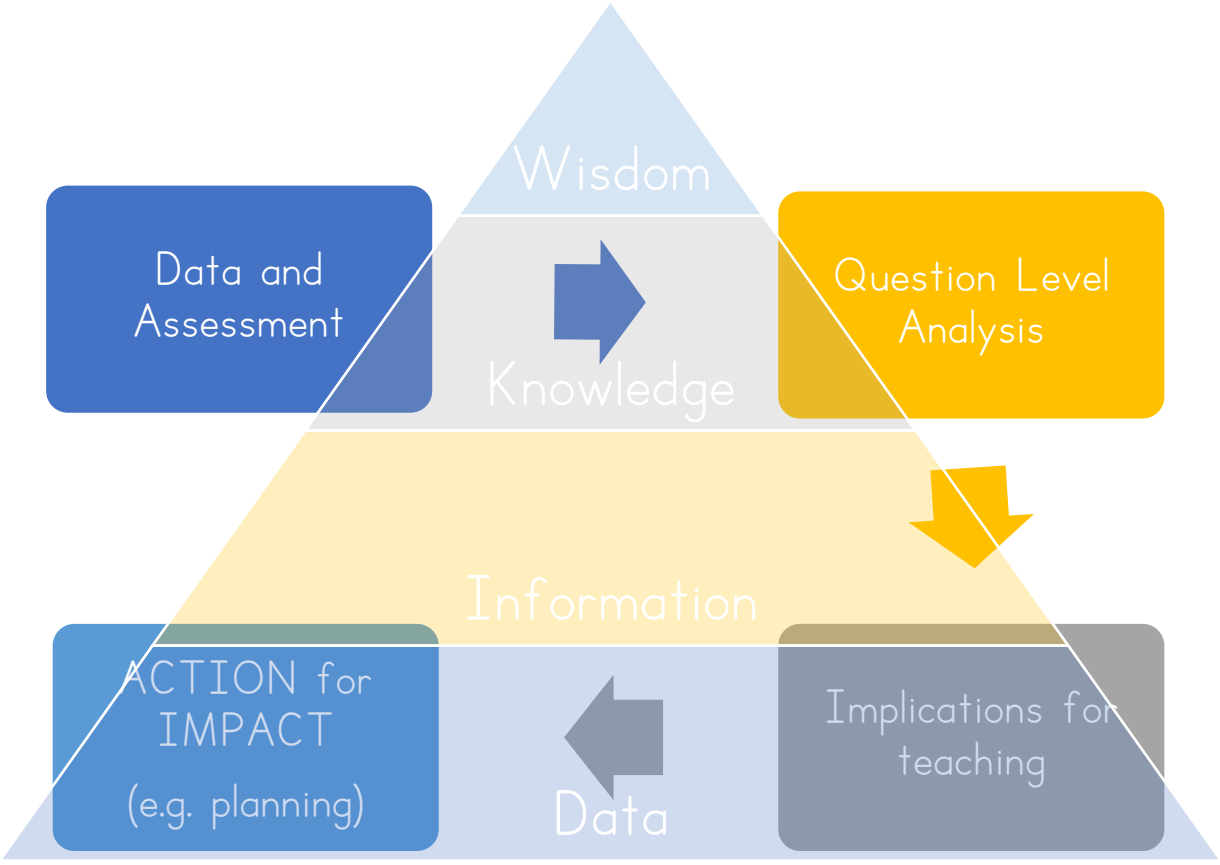
Turning data into wisdom enables teachers, and leaders, to be decisive in making choices around teaching content, understanding gaps, finding appropriate and high-quality resources and enabling all learners (irrespective of background) to make progress.

Equipping leaders at all levels

Practical teaching tools, strategies and resources:

- Tools for data wisdom
- Classroom resources and strategies
- DTTR – child level data for impact
- Consistent language of assessment
- Networking opportunities – learning together
- Transition resources, support and tools

What turns data into wisdom?

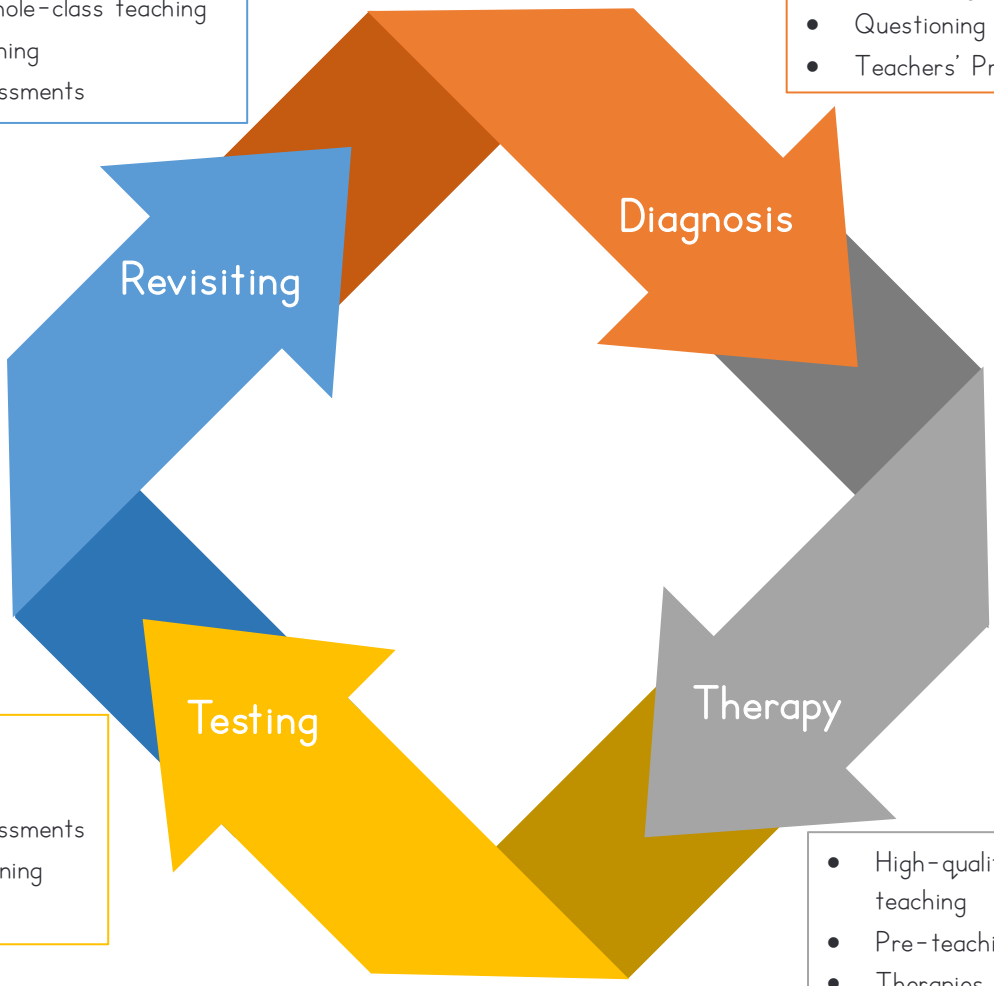


Our commonality of language enables us to be precise in analysing outcomes and mapping routes to improve the learning journey for marginalised children. Our forensic use of data provides leaders with accurate knowledge and wisdom to impact change. **We are clear that there can be no shortcuts.**

DTTR in action

- Diagnostic assessments
- Question Level Analyses
- Personalised Learning Checklists
- PiXL Language of Assessment
- Questioning
- Teachers' Professional Knowledge

- High-quality whole-class teaching
- Curriculum planning
- Diagnostic assessments



- Show Me tasks
- Therapy tests
- Diagnostic assessments
- Planned questioning
- Classwork

- High-quality whole-class teaching
- Pre-teaching
- Therapies
- Curriculum

Data Wisdom

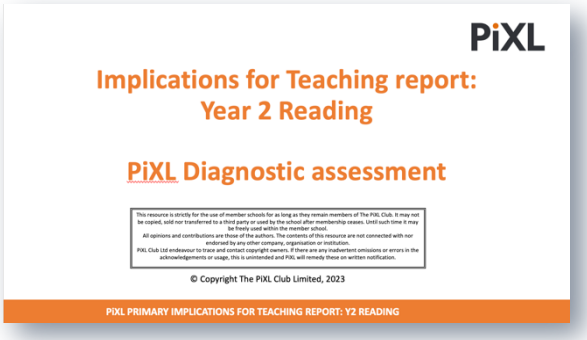
Question number	NC Ref Code	Topic	Focus of question	Max marks	Question confidence	AZIZ, Nisha	BARNES, Jake	BEGUM, Sadia	BROOKS, Olivia	BROWN, Sophie	DABIRI, Hassan	DAVIS, Chloe	DEMIR, Natalya	EMERSON, Jalisa	FARRELL, Harrison	GEORGIOU, Maria	GILBERT, Amelia	HANSEN, Lucy	HILTON, Jaden	JACKSON, Poppy	JONES, Oliver	KAYA, Ruby	KOWALSKI, Elena	LEBEDEV, Tomasz	MARTIN, Jessica
			No. of pupil: 34			#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####
1	4N2b	Number and place value	find 1,000 more or less than a given number	1	91%	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	4C2	Calculations	add and subtract numbers with up to 4 digits	1	94%	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
3	4F4	Fractions, decimals and percentages	add and subtract fractions with the same denominator	1	97%	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	4C6b	Calculations	use place value, known and derived facts to multiply and divide mentally	1	94%	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	3C1	Calculations	add and subtract numbers mentally, including a three-digit number and tens	1	88%	1	0	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1
6	5F8	Fractions, decimals and percentages	read, write, order and compare numbers with up to three decimal places	1	79%	1	1	1	0	1	1	1	1	0	1	1	0	0	1	1	1	1	1	1	1
7	4C2	Calculations	add and subtract numbers with up to 4 digits	1	91%	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1
8	3C7	Calculations	calculate multiplication and division using the multiplication tables that pupils know	1	82%	x	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1
9	4C6a	Calculations	recall multiplication and division facts for multiplication tables up to 12 × 12	1	91%	x	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	4C7	Calculations	multiply two-digit and three-digit numbers by a one-digit number using formal written layout	1	79%	x	0	1	0	1	1	1	0	1	1	1	x	1	1	1	1	1	1	1	1
11	4C2	Calculations	add and subtract numbers with up to 4 digits	1	88%	1	x	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
12	4F4	Fractions, decimals and percentages	add and subtract fractions with the same denominator	1	71%	x	0	0	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1
13	3N2b	Number and place value	find 10 or 100 more or less than a given number	1	79%	1	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
14	6C9	Calculations	use knowledge of the order of operations to carry out calculations involving the four operations	1	91%	1	0	1	1	1	1	1	1	1	1	1	x	1	1	1	1	1	1	1	1
15	6F5a	Fractions, decimals and percentages	multiply simple pairs of proper fractions, writing the answer in its simplest form [e.g. 1/4 × 1/2 = 1/8]	1	76%	1	1	1	0	1	1	0	1	1	1	0	0	1	1	1	1	1	1	1	1
16	5C6a	Calculations	multiply and divide numbers mentally drawing upon known facts	1	71%	x	0	0	0	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1
17	5C7b	Calculations	divide numbers up to 4 digits by a one-digit number using short division	1	68%	x	x	0	1	1	1	0	0	1	1	x	x	1	1	1	1	1	0	1	1
18	6F9a	Fractions, decimals and percentages	multiply and divide numbers by 10, 100 and 1,000 giving answers up to three decimal places	1	76%	1	1	1	0	0	1	1	0	1	1	1	0	1	1	0	1	1	1	1	1
19	5C6b	Calculations	multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	1	65%	1	0	0	0	0	1	1	0	0	1	0	x	1	1	0	1	1	1	1	1
20	6C7b	Fractions, decimals and percentages	divide numbers up to 4 digits by a two digit whole number using long division	2	63%	0	0	0	0	2	2	2	0	x	2	0	2	1	2	x	2	2	2	2	x
21	4F8	Fractions, decimals and percentages	compare numbers with the same number of decimal places up to two decimal places	1	53%	x	x	0	0	1	1	0	0	x	1	x	0	1	1	0	1	1	0	1	1
22	6C7a	Calculations	multiply multi-digit numbers up to 4 digits by a two-digit whole number using long multiplication	2	68%	0	0	2	2	2	2	2	0	2	2	2	0	2	2	0	1	2	1	2	2
23	5F4	Fractions, decimals and percentages	add and subtract fractions with the same denominator or den. that are multiples of the same number	1	68%	0	x	0	0	0	1	1	0	1	1	1	x	0	1	1	1	1	1	1	1
24	6C7a	Calculations	multiply multi-digit numbers up to 4 digits by a two-digit whole number using long multiplication	2	65%	x	0	0	0	2	2	2	0	1	2	2	0	2	2	0	2	2	2	2	2
25	5F8	Fractions, decimals and percentages	read, write, order and compare numbers with up to three decimal places	1	65%	x	1	x	0	1	0	0	0	1	1	x	x	1	1	0	1	1	0	1	x
26	6F4	Fractions, decimals and percentages	add and subtract fractions with different denominators and mixed numbers	1	65%	0	x	0	0	0	1	0	0	1	1	1	x	1	1	1	x	1	1	1	1
27	6F5b	Fractions, decimals and percentages	divide proper fractions by whole numbers [e.g. 1/3 ÷ 2 = 1/6]	1	65%	x	x	0	x	0	1	0	1	1	0	0	x	1	1	1	1	1	1	1	1
28	6F5b	Fractions, decimals and percentages	divide proper fractions by whole numbers [e.g. 1/3 ÷ 2 = 1/6]	1	65%	1	x	1	x	0	1	1	1	1	1	0	x	1	1	0	1	1	1	1	x
29	6R2	Ratio and proportion	solve problems involving the calculation of percentages	1	44%	1	x	x	0	x	0	0	0	0	1	x	0	0	1	0	1	1	x	1	0
30	6F4	Fractions, decimals and percentages	add and subtract fractions with different denominators and mixed numbers	1	62%	x	0	0	0	0	1	0	0	0	1	1	x	0	1	1	1	1	1	1	1
31	6R2	Ratio and proportion	solve problems involving the calculation of percentages	1	53%	1	x	x	x	x	0	1	0	x	1	x	x	1	1	0	1	1	x	1	1
32	6F4	Fractions, decimals and percentages	add and subtract fractions with different denominators and mixed numbers	1	50%	x	x	0	0	0	1	1	0	0	1	x	x	1	1	x	0	1	1	1	1
33	6F9b	Fractions, decimals and percentages	multiply one-digit numbers with up to two decimal places by whole numbers	1	41%	x	0	0	0	0	x	1	0	0	1	x	x	1	0	0	1	1	0	1	1
34	6R2	Ratio and proportion	solve problems involving the calculation of percentages	1	41%	1	x	x	x	x	x	0	0	x	0	x	x	0	1	1	1	1	0	1	1
35	5F5	Fractions, decimals and percentages	multiply proper fractions and mixed numbers by whole numbers	1	41%	x	0	x	x	1	x	0	0	x	1	x	x	0	1	0	1	0	1	1	x
36	6C7b	Calculations	divide numbers up to 4 digits by a two digit whole number using long division	2	41%	x	0	x	0	x	1	0	0	x	2	x	x	1	2	x	2	2	x	2	x
				40		17	8	17	13	24	32	27	14	23	38	20	11	32	39	21	38	39	30	40	32

Summative assessments provide an insight into gaps, misconceptions and wider diagnostic concerns relating to children. For whole class purposes, they enable teachers to see the groups that require additional support and provide a roadmap for making changes to planning to close these gaps.

However the most important aspect of this is: WHAT TEACHERS DO WITH THAT INFORMATION!

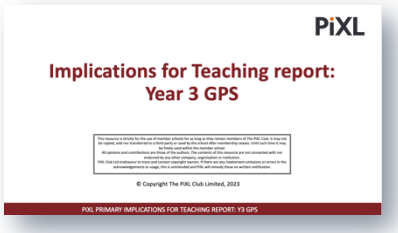
1. Pupils' gaps in **English**

Implications for teaching (IFT) reports - termly



Created for:

- GPS (SPaG)
- Reading



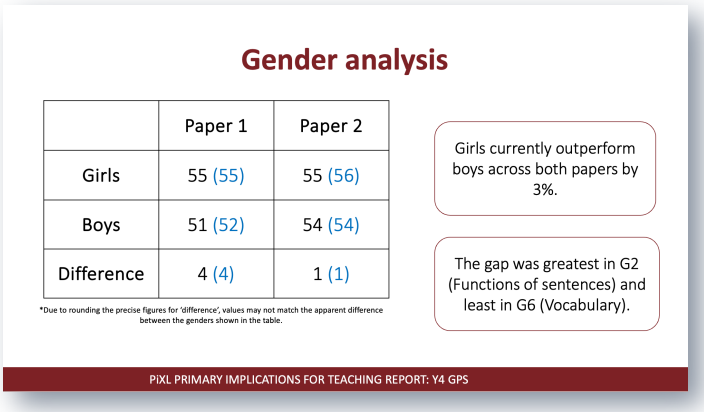
These reports consolidate the data from the PiXL family nationally, to provide leaders and teachers will analysis into wider teaching gaps and to support creating firmer foundations for learning. All reports have a similar structure, no matter the year group or the subject. Allowing leaders to systematically pinpoint where pupils may be encountering stumbling blocks in the curriculum.

Assessments are not black and white. They are nuanced and require subtly to understand individual pupil performance. The reports probe beyond surface-level analysis and consider, carefully, bigger picture questions – such as: why are 30 children continually making this same mistake?

The reports dissect pupil responses in hot-spot areas aligned to the curriculum, the allow the school to see patterns and trends.

We ensure that the data analysis comes back to the core principle that PUPILS ARE NOT JUST NUMBERS. They represent individual pupils who's education journeys are being influenced by a multitude of factors.

Gender Analysis



The PiXL national analysis supports school leaders in making judgements against key groups – including performance differences between gender. **It is crucial for us to be cognisant of these differences as we strive to provide equitable educational experiences for every young person.**

At a local and school level, leaders need to be aware of the gender differences in our cohorts. Particularly where contextual needs also play an important factor – for example: a higher proportion of girls in Year 6 in a particular calendar year but recognising the impact this has on a lower cohort of boys but whom have significant disadvantaged demographics.

All of our staff know each pupils' 'story' and they are able to present this coherently

Content domain analysis – reading

Content domain analysis

Content domain	Number of marks	Question confidence (%)
2a. Language in context	7	46 (47)
2b. Retrieval	18	53 (54)
2c. Summarise	1	36 (37)
2d. Inference	11	40 (40)
2e. Prediction	2	16 (15)
2f. Meaning as a whole	1	55 (55)

Pupils scoring:	% of pupils
15 marks +	62 (63)
20 marks +	47 (49)
25 marks +	32 (32)

Question type analysis

Question type	Number of marks	Question confidence (%)
Tabulated	2	39 (39)
Extended	3	28 (28)
Find and copy	2	37 (38)
Short constructed	12	52 (53)
Short constructed – multiple items	12	46 (46)
Multiple choice	7	48 (49)
Match	1	55 (55)
Order	1	36 (37)

The data is presented in different ways to support teachers and leaders in adapting teaching to broaden learning to improve outcomes.

We may need to:

- Consider modalities to how we present different question types to children – where assessment leads us to understanding that the child finds it difficult to answer a question.
- Focus more broadly on particular domains where the children haven't performed as well as expected – where assessment shows that perhaps teaching has limited a child's exposure to different text types or reading skills.

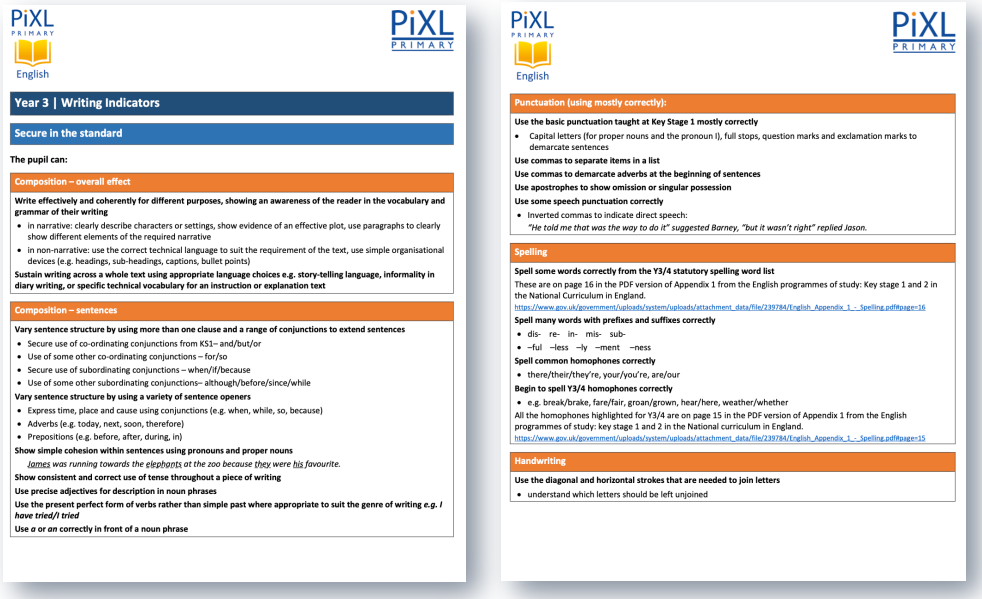
Thinking UPSTREAM

The IFT (implication for teaching) summary reports are not just 'snapshots' of national data, they are essential for us, in identifying the key curriculum stumbling blocks for each year group.

They enable us to adopt a proactive stance. We can consider the national data alongside each of our schools. Allowing us to address potential challenges.

Leaders must ensure that these are comprehended in a year specific, and whole school context. Leaders complete these as part of the published ROY (rhythm of the year) calendar with time to share with teachers so that they are able to implement this within planning. We monitor these changes carefully and regularly to understand how gaps are closing across the school.

Diagnosing children's areas of need in writing



PiXL PRIMARY English

Year 3 | Writing Indicators

Secure in the standard

The pupil can:

Composition – overall effect

Write effectively and coherently for different purposes, showing an awareness of the reader in the vocabulary and grammar of their writing

- in narrative: clearly describe characters or settings, show evidence of an effective plot, use paragraphs to clearly show different elements of the required narrative
- in non-narrative: use the correct technical language to suit the requirement of the text, use simple organisational devices (e.g. headings, sub-headings, captions, bullet points)

Sustain writing across a whole text using appropriate language choices e.g. story-telling language, informality in diary writing, or specific technical vocabulary for an instruction or explanation text

Composition – sentences

Vary sentence structure by using more than one clause and a range of conjunctions to extend sentences

- Secure use of co-ordinating conjunctions from KS1– and/but/or
- Use of some other co-ordinating conjunctions – for/so
- Secure use of subordinating conjunctions – when/if/because
- Use of some other subordinating conjunctions– although/before/since/while

Vary sentence structure by using a variety of sentence openers

- Express time, place and cause using conjunctions (e.g. when, while, so, because)
- Adverbs (e.g. today, next, soon, therefore)
- Prepositions (e.g. before, after, during, in)

Show simple cohesion within sentences using pronouns and proper nouns

James was running towards the elephants at the zoo because they were his favourite.

Show consistent and correct use of tense throughout a piece of writing

Use precise adjectives for description in noun phrases

Use the present perfect form of verbs rather than simple past where appropriate to suit the genre of writing *e.g. I have tried/I tried*

Use *a* or *an* correctly in front of a noun phrase

PiXL PRIMARY English

Punctuation (using mostly correctly):

Use the basic punctuation taught at Key Stage 1 mostly correctly

- Capital letters (for proper nouns and the pronoun I), full stops, question marks and exclamation marks to demarcate sentences

Use commas to separate items in a list

Use commas to demarcate adverbs at the beginning of sentences

Use apostrophes to show omission or singular possession

Use some speech punctuation correctly

- Inverted commas to indicate direct speech:
  "He told me that was the way to do it" suggested Barney, "but it wasn't right" replied Jason.

Spelling

Spell some words correctly from the Y3/4 statutory spelling word list

These are on page 16 in the PDF version of Appendix 1 from the English programmes of study: Key stage 1 and 2 in the National Curriculum in England.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/239784/English_Appendix_1_-_Spelling.pdf#page=16

Spell many words with prefixes and suffixes correctly

- dis- re- in- mis- sub-
- –ful –less –ly –ment –ness

Spell common homophones correctly

- there/their/they're, your/you're, are/our

Begin to spell Y3/4 homophones correctly

- e.g. break/brake, fare/fair, groan/grown, hear/here, weather/whether

All the homophones highlighted for Y3/4 are on page 15 in the PDF version of Appendix 1 from the English programmes of study: key stage 1 and 2 in the National curriculum in England.

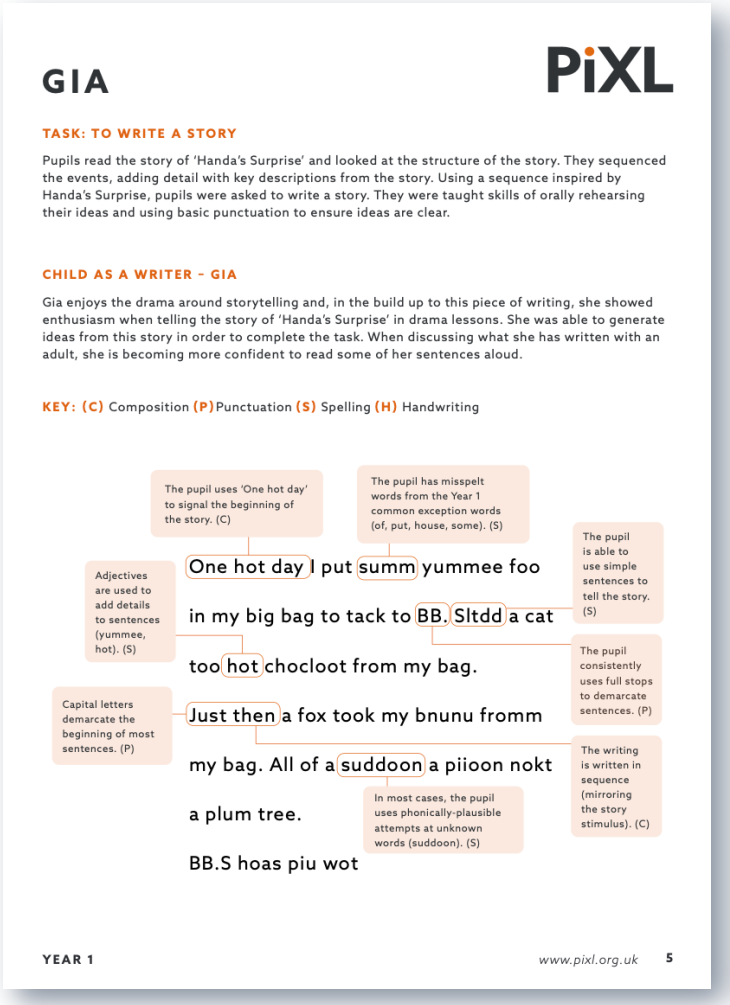
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/239784/English_Appendix_1_-_Spelling.pdf#page=15

Handwriting

Use the diagonal and horizontal strokes that are needed to join letters

- understand which letters should be left unjoined

PiXL has summarised the National Curriculum objectives into the Writing Indicators (above) – providing teachers with a 'no nonsense' breakdown. Demonstrating precisely what children need to achieve, meet and surpass the national expectations.



GIA

PiXL

TASK: TO WRITE A STORY

Pupils read the story of 'Handa's Surprise' and looked at the structure of the story. They sequenced the events, adding detail with key descriptions from the story. Using a sequence inspired by Handa's Surprise, pupils were asked to write a story. They were taught skills of orally rehearsing their ideas and using basic punctuation to ensure ideas are clear.

CHILD AS A WRITER - GIA

Gia enjoys the drama around storytelling and, in the build up to this piece of writing, she showed enthusiasm when telling the story of 'Handa's Surprise' in drama lessons. She was able to generate ideas from this story in order to complete the task. When discussing what she has written with an adult, she is becoming more confident to read some of her sentences aloud.

KEY: (C) Composition **(P)** Punctuation **(S)** Spelling **(H)** Handwriting

The pupil uses 'One hot day' to signal the beginning of the story. (C)

The pupil has misspelt words from the Year 1 common exception words (of, put, house, some). (S)

Adjectives are used to add details to sentences (yummee, hot). (S)

The pupil is able to use simple sentences to tell the story. (S)

The pupil consistently uses full stops to demarcate sentences. (P)

Capital letters demarcate the beginning of most sentences. (P)

The writing is written in sequence (mirroring the story stimulus). (C)

In most cases, the pupil uses phonically-plausible attempts at unknown words (suddoon). (S)

One hot day I put summ yummee foo

in my big bag to tack to BB. Sltdd a cat

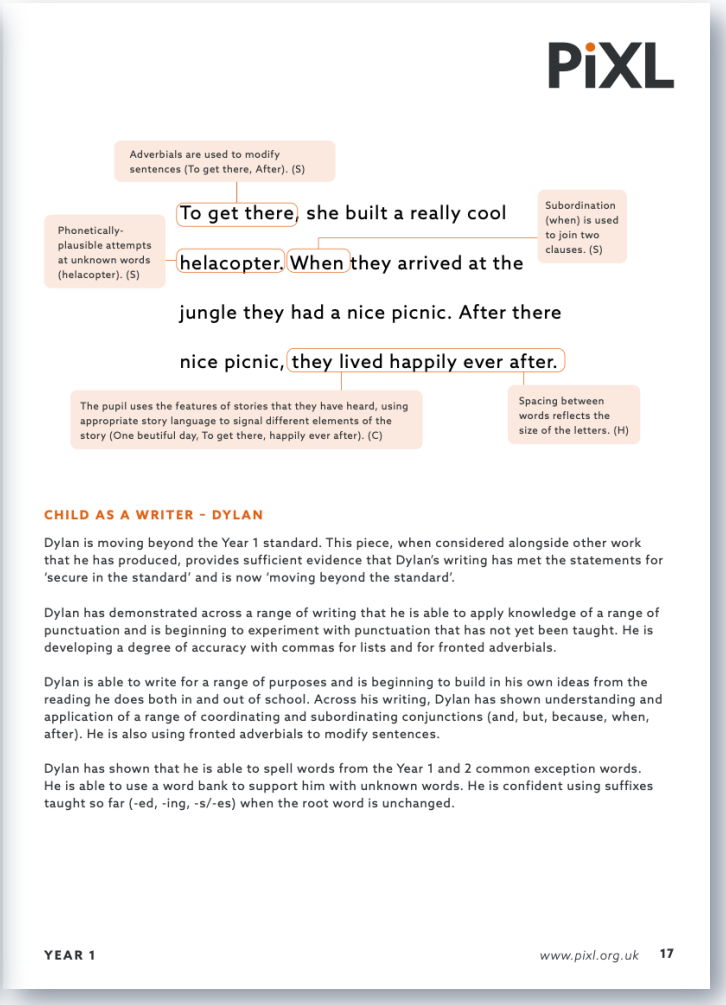
too hot chocloot from my bag.

Just then a fox took my bnunu fromm

my bag. All of a suddoon a piioon nokt

a plum tree.

BB.S hoas piu wot



PiXL

Adverbials are used to modify sentences (To get there, After). (S)

Phonetically-plausible attempts at unknown words (helacopter). (S)

Subordination (when) is used to join two clauses. (S)

To get there, she built a really cool

helacopter. When they arrived at the

jungle they had a nice picnic. After there

nice picnic, they lived happily ever after.

The pupil uses the features of stories that they have heard, using appropriate story language to signal different elements of the story (One beutiful day, To get there, happily ever after). (C)

Spacing between words reflects the size of the letters. (H)

CHILD AS A WRITER - DYLAN

Dylan is moving beyond the Year 1 standard. This piece, when considered alongside other work that he has produced, provides sufficient evidence that Dylan's writing has met the statements for 'secure in the standard' and is now 'moving beyond the standard'.

Dylan has demonstrated across a range of writing that he is able to apply knowledge of a range of punctuation and is beginning to experiment with punctuation that has not yet been taught. He is developing a degree of accuracy with commas for lists and for fronted adverbials.

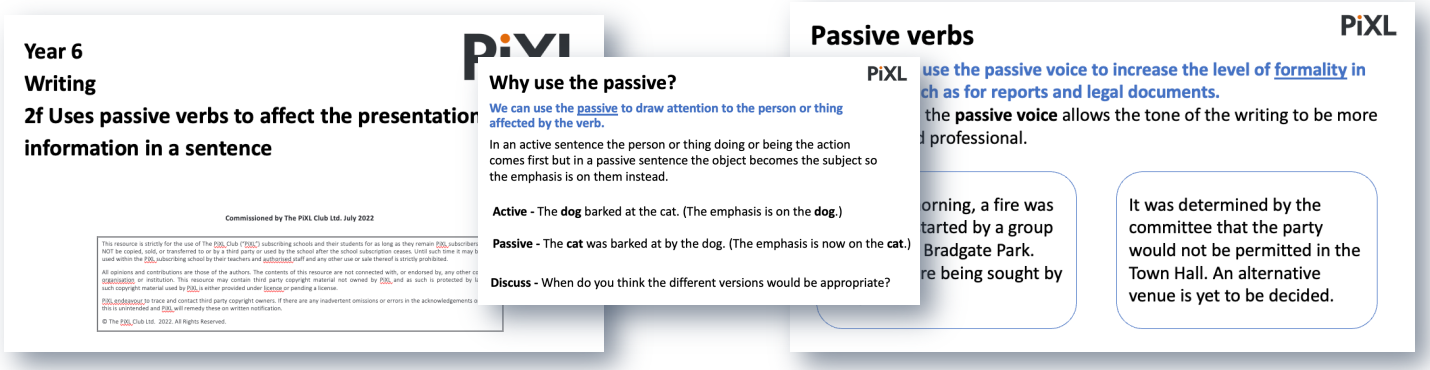
Dylan is able to write for a range of purposes and is beginning to build in his own ideas from the reading he does both in and out of school. Across his writing, Dylan has shown understanding and application of a range of coordinating and subordinating conjunctions (and, but, because, when, after). He is also using fronted adverbials to modify sentences.

Dylan has shown that he is able to spell words from the Year 1 and 2 common exception words. He is able to use a word bank to support him with unknown words. He is confident using suffixes taught so far (-ed, -ing, -s/-es) when the root word is unchanged.

Writing exemplifications bring the writing indicators to life.

They illustrate not only the attainment of specific criteria but exemplify how children achieve these with commentary to support teacher judgement. This a clear model to reference when assessing pupils progress in writing.

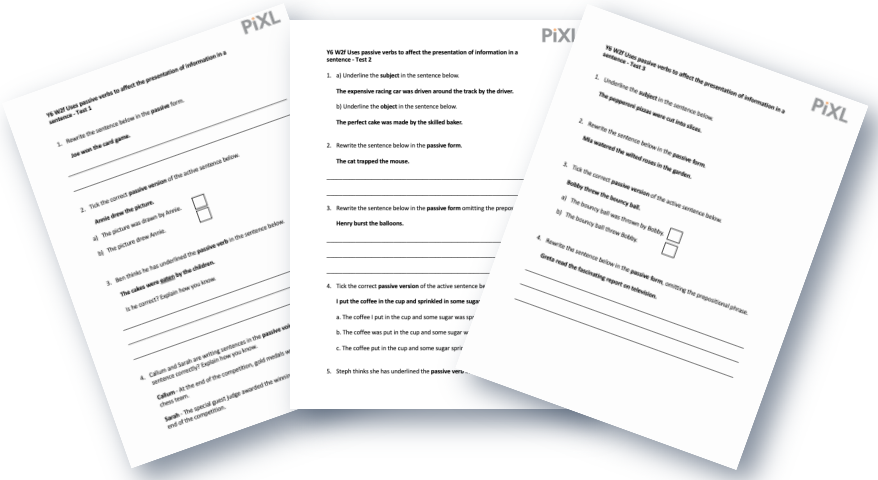
Therapies and tests



Having equipped ourselves with the understanding of writing indicators, exemplification documentation and the progress trackers – we are now poised to address any learning gaps that arise. We do this through PiXL therapies.

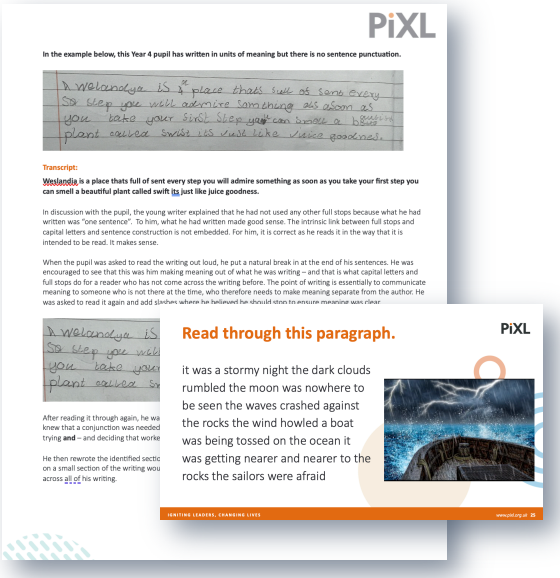
PiXL therapies offer a responsive and targeted approach to teaching in that specific area. They are meticulously designed – keeping the curriculum at its core and aligned to national curriculum objectives.

They solidify and extend pupils knowledge to not just plug the gap – but to ensure that it doesn't resurface again.



Tests enable teachers to check on fluency of understanding as well as the retention, longer term, of specific skills and curriculum knowledge we want pupils to know and remember. There are three tests for each national curriculum objective in reading, SPaG and mathematics.

Common barriers to progress in English



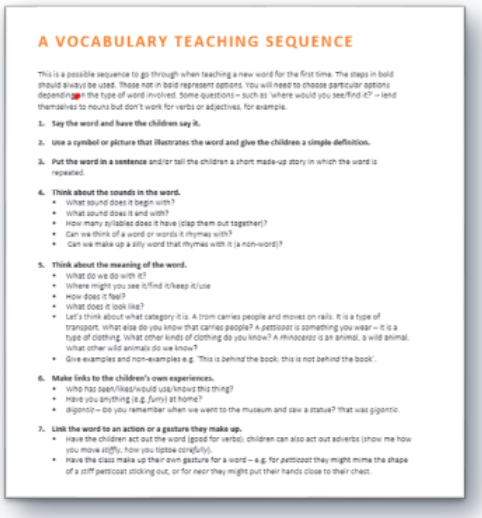
Capital letters and full stops

A perennial challenge – we recognise that simply reminding pupils to 'check their work' is not enough in addressing this writing issue.

The PiXL 'capital letters and full stops' package is more than a set of rules. We support children how to perceive and understand sentences.

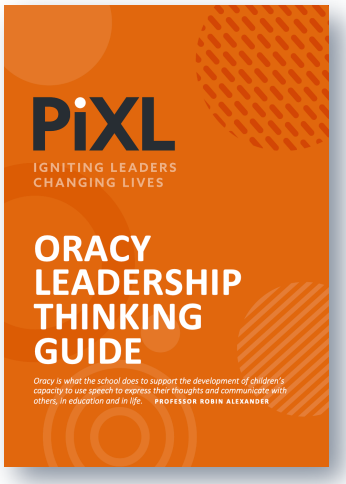
The materials help children to visualise and internalise what constitutes using a capital letter and full stop: the end of a thought, a pause in dialogue, a space for breath in a rhythm of their writing. It teaches children to see their writing as complete ideas.

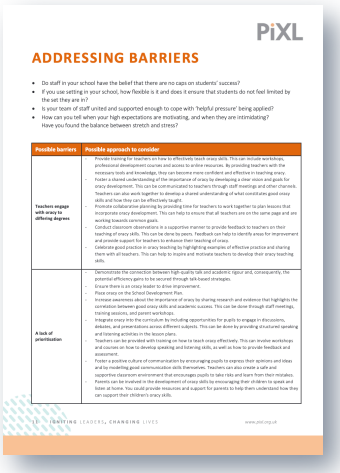
Early Years – Communication and Language

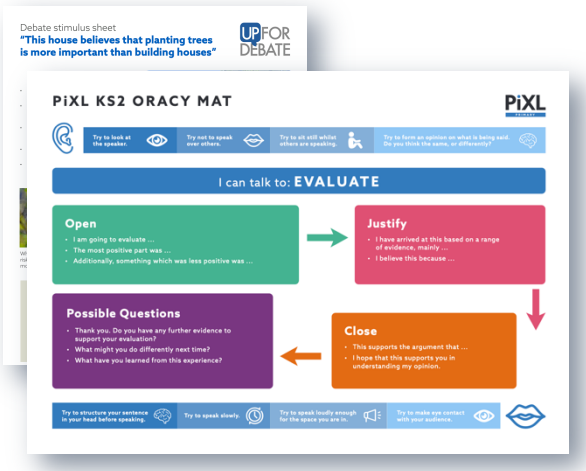


Barriers in English can be compounded in the Early Years Foundation Stage, if not actively addressed ahead of KS1. The comprehensive CPD resource is dedicated to EYFS. It offers rich, EEF (education endowment fund) research-backed strategies, moving beyond theory and considering practical and actionable support strategies to ensure that EYFS is language-rich where all children can flourish communicatively.

Oracy



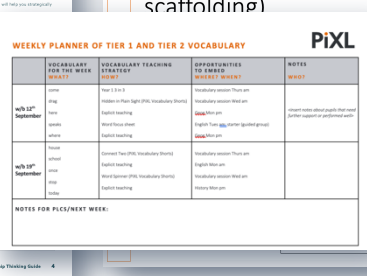




Each school drives a focus for developing pupil oracy. We commit, with intent, to ensure that pupils are strongly taught to speak clearly and communicate effectively. **It is a cornerstone of not just educational success – but life success.**

We utilise the oracy strategy with a wealth of resources – not just for improving spoken skills but listening skills too.

Vocabulary development



Improving pupils' vocabulary

We know that vocabulary development takes time and needs a systematic approach.

Resources, aimed at year group specific development, are available and map to support the teaching of English.

2. Pupils' gaps in **Maths**

Implications for teaching (IFT) reports - termly

AUTUMN 2023	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6 (SEPTEMBER)	YEAR 6 (NOVEMBER)
PiXL PARTNERSHIP	• Subtract single-digit numbers from 2-digit numbers • Improve fluency to secure arithmetical accuracy • Understand the inverse relationship between addition and subtraction (and use this to check calculations and solve missing number problems) • Understand the value of digits within a 2-digit number • Describe and compare 2D shapes • Plan the teaching of multiplication tables	• Written addition using columnar methods, including crossing a ten • Solve missing number questions using the inverse operation • Find fractions of amounts • Add and subtract in the context of a two-step word problem • Articulate 'Explain how you know' responses • Understand equivalent fractions	• Multiply 2-digit numbers by a single-digit number • Divide by 10 or 100 • Add and subtract 2-digit and 3-digit numbers • Understand the relationship between fractions, division and multiplication facts • Solve problems in the context of money • Solve multi-step problems	• Multiply 2- and 3-digit numbers by 1 digit using short multiplication • Subtract fractions with the same denominator, including mixed numbers • Divide whole numbers and decimals by 10 • Explicit teaching of Tier 2 and Tier 3 vocabulary • Solve multi-step problems (show your method) • Secure the Year 3 and 4 fractions curriculum	• Subtract numbers with up to 4 digits using the formal column method • Subtract a decimal number from a whole number • Use place value and known facts to multiply mentally • Secure the Year 4 and Year 5 fractions and decimals curricula • Solve a range of problem types • Analyse the significant gender gap in favour of boys in key content domains	• Secure mental calculation strategies • Subtract numbers with up to 3 decimal places • Prioritise Year 5 arithmetic content • Secure understanding of the properties of shape • Work systematically to solve multi-step problems • Secure the Year 3-5 measurement curriculum
OUR SCHOOL						

The process is exactly the same as with English – Reading and GPS. PiXL produce a termly report, based on the upload of the cohort's data. We then look at systemic features across the group – and consider the implications for our own school.

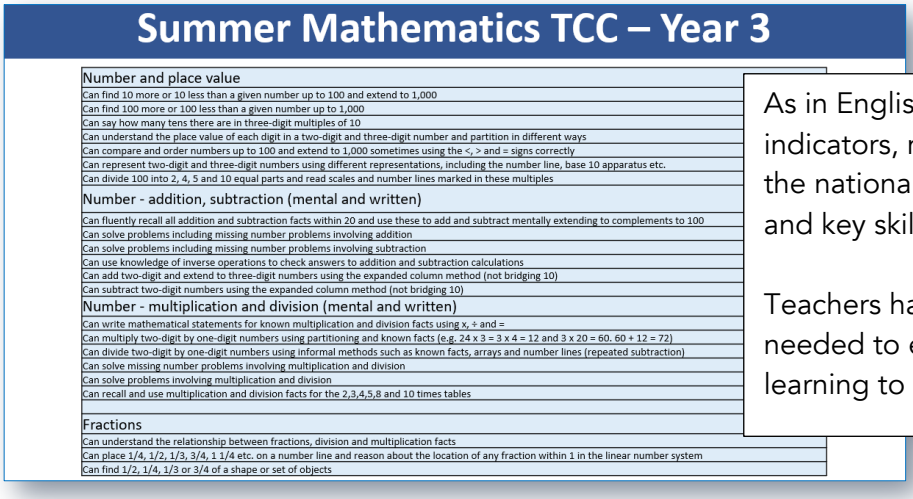
Data is king – always thinking to ourselves 'what is this telling me?'

Question number	NC Ref Code	Topic	Question Confidence
4	4C4/4S2	Calculations/Statistics	87%
3	4C6a	Calculations	87%
9	4F2	Fractions, decimals and percentages	77%
7	4M4c	Measurement	76%
5	4N2b	Number and place value	89%
1a	4S2	Statistics	81%
1b	4S2	Statistics	84%
8	5C4	Calculations	79%
2	5C6b	Calculations	77%
6	5F8	Fractions, decimals and percentages	81%
16	5G4b	Geometry - properties of shapes	39%
13	5M9a	Measurement	65%
21	5M9b/6R3	Measurement/Ratio	48%
15	5N3b	Number and place value	52%
10	5N4	Number and place value	74%
11a	6A2	Algebra	48%
11b	6A2	Algebra	48%
19	6C8/5M9a	Calculations/Measurement	63%
20	6F11	Fractions, decimals and percentages	65%
23	6F4	Fractions, decimals and percentages	21%
12	6G2b	Geometry - properties of shapes	76%
17	6P3	Geometry - position and direction	16%
18	6R2	Ratio and proportion	61%
22	6R3	Ratio and proportion	45%
14	6R4	Ratio and proportion	68%

The QLA can be ordered or ranked by National Curriculum reference types/domains – to help us identify specific issues within a mathematical area that requires re-teaching or attention to support gaps in knowledge.

In the example above – teachers will consider carefully the concepts that may need re-teaching for all children 'Geometry – position and direction' vs those that half the cohort need, or the lowest end – such as 'Ratio and proportion'.

Diagnosing children's areas of need in mathematics



Summer Mathematics TCC – Year 3

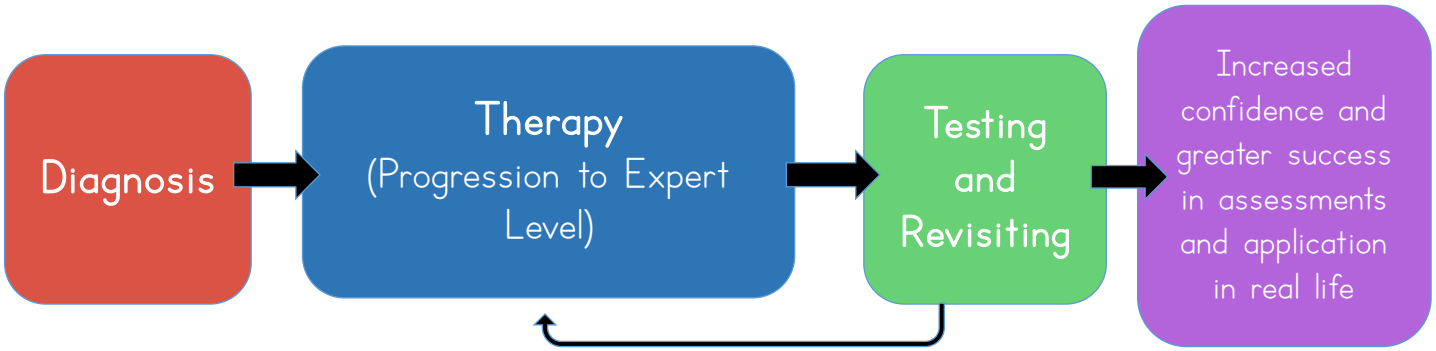
Number and place value
Can find 10 more or 10 less than a given number up to 100 and extend to 1,000
Can find 100 more or 100 less than a given number up to 1,000
Can say how many tens there are in three-digit multiples of 10
Can understand the place value of each digit in a two-digit and three-digit number and partition in different ways
Can compare and order numbers up to 100 and extend to 1,000 sometimes using the <, > and = signs correctly
Can represent two-digit and three-digit numbers using different representations, including the number line, base 10 apparatus etc.
Can divide 100 into 2, 4, 5 and 10 equal parts and read scales and number lines marked in these multiples
Number - addition, subtraction (mental and written)
Can fluently recall all addition and subtraction facts within 20 and use these to add and subtract mentally extending to complements to 100
Can solve problems including missing number problems involving addition
Can solve problems including missing number problems involving subtraction
Can use knowledge of inverse operations to check answers to addition and subtraction calculations
Can add two-digit and extend to three-digit numbers using the expanded column method (not bridging 10)
Can subtract two-digit numbers using the expanded column method (not bridging 10)
Number - multiplication and division (mental and written)
Can write mathematical statements for known multiplication and division facts using x, ÷ and =
Can multiply two-digit by one-digit numbers using partitioning and known facts (e.g. 24 x 3 = 3 x 4 = 12 and 3 x 20 = 60. 60 + 12 = 72)
Can divide two-digit by one-digit numbers using informal methods such as known facts, arrays and number lines (repeated subtraction)
Can solve missing number problems involving multiplication and division
Can solve problems involving multiplication and division
Can recall and use multiplication and division facts for the 2,3,4,5,8 and 10 times tables
Fractions
Can understand the relationship between fractions, division and multiplication facts
Can place 1/4, 1/2, 1/3, 3/4, 1 1/4 etc. on a number line and reason about the location of any fraction within 1 in the linear number system
Can find 1/2, 1/4, 1/3 or 3/4 of a shape or set of objects

As in English, and how we use the writing indicators, maths utilises key objectives from the national curriculum to ensure coverage and key skills are developed.

Teachers have a consistent set of objectives needed to ensure strong foundational learning to enable pupils to flourish in maths.

Multiplication Times Tables

- Multiplication facts are crucial building blocks in pupils' mathematical education.
- Learning them fluently must be seen as non-negotiable and an entitlement of all pupils.
- Pupils can become anxious if they are not taught using a structured approach which breaks down the learning of facts into manageable chunks.
- Consider the impact on pupil outcomes if they are secure and fluent in the recall of multiplication and associated division facts.



Diagnostic tests to forensically identify specific gaps in pupils' knowledge and understanding.

Focus on methods that lead to instant recall of facts rooted in conceptual understanding by:

- Using multiple representations.
- Practising little and often.
- Keeping the stakes low to keep emotional stress and anxiety to a minimum.
- Breaking down the times tables facts into manageable chunks.
- Only moving onto the next times tables when pupils have reached Expert Level.

Used after times table to assess pupils have reached Expert Level, showing they are secure in their knowledge and understanding.

Pupils are able to apply new knowledge of times table in other areas of mathematics and in test situations.

- We explicitly teach multiplication tables as per the times tables planner.
- We introduce or reinforce the multiplication and division symbols.
- We reinforce all associated vocabulary (see Key Vocabulary sheet and PiXL Unlock strategy and resources).
- We make use of visuals or practical resources to reinforce understanding.
- We explicitly teach associated division and fraction facts.

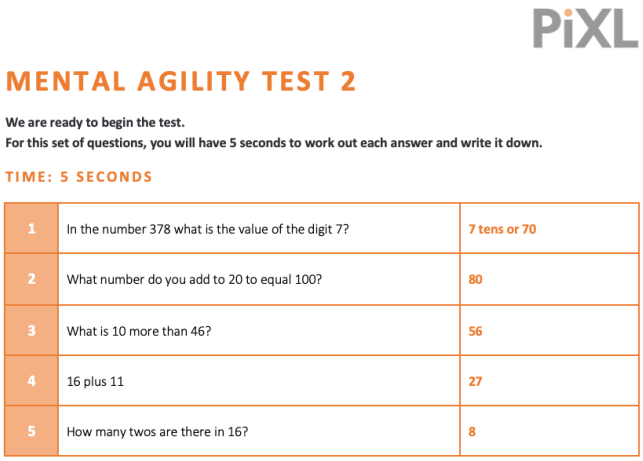
PiXL primary times tables planner

Year group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 2	Count in steps of 2, 3, 5, 10 Double and halve	Multiplication and division facts for 2 and 10	Multiplication and division facts for 5 1 x 5 4 x 5 2 x 5 5 x 5 3 x 5 6 x 5	Multiplication and division facts for 5 7 x 5 10 x 5 8 x 5 11 x 5 9 x 5 12 x 5	Summer 1A Mixed practice multiplication and division facts for 2, 5, 10	Summer 2A Multiplication and division facts 7 x 3 10 x 3 8 x 3 11 x 3 9 x 3 12 x 3
Year 3	Multiplication and division facts 1 x 4 4 x 4 2 x 4 5 x 4 3 x 4 6 x 4	Multiplication and division facts 7 x 4 10 x 4 8 x 4 11 x 4 9 x 4 12 x 4				

Year group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 4	Multiplication and division facts Autumn 1A 1 x 9 4 x 9 2 x 9 5 x 9 3 x 9 6 x 9 Autumn 1B 7 x 9 10 x 9 8 x 9 11x 9 9 x 9 12 x 9	Multiplication and division facts Autumn 2A 1 x 7 4 x 7 2 x 7 5 x 7 3 x 7 6 x 7 Autumn 2B 7 x 7 10 x 7 8 x 7 11x 7 9 x 7 12 x 7	Multiplication and division facts Spring 1A 1 x 12 4 x 12 2 x 12 5 x 12 3 x 12 6 x 12 Spring 1B 7 x 12 10 x 12 8 x 12 11 x 12 9 x 12 12 x 12	Multiplication and division facts Spring 2A 1 x 11 4 x 11 2 x 11 5 x 11 3 x 11 6 x 11 Spring 2B 7 x 11 10 x 11 8 x 11 11 x 11 9 x 11 12 x 11	Mixed practice multiplication and division facts for up to 12 x 12	Mixed practice multiplication and division facts for up to 12 x 12 DfE Multiplication Table Check
Year 5 Year 6	Once pupils are secure in the above, a suggested progression would be: • Consolidation and ongoing practice of all multiplication and division facts up to 12 x 12. • Differentiated programme of support to address gaps in multiplication tables knowledge. • Use of multiplication and division facts to derive associated facts. For example, if 8 x 6 = 48, what other facts can we derive? • Development of multiplicative reasoning – links between Multiplication and Division, and Fractions and Ratio.					

Mental agility tests - Mathematics

Contained in the 'Number and Calculation Fluency' folder is a complete 20-week set of Mental Agility Tests for Years 1 to 6. These tests are designed and aimed to support



PiXL

MENTAL AGILITY TEST 2

We are ready to begin the test.
For this set of questions, you will have 5 seconds to work out each answer and write it down.

TIME: 5 SECONDS

1	In the number 378 what is the value of the digit 7?	7 tens or 70
2	What number do you add to 20 to equal 100?	80
3	What is 10 more than 46?	56
4	16 plus 11	27
5	How many twos are there in 16?	8

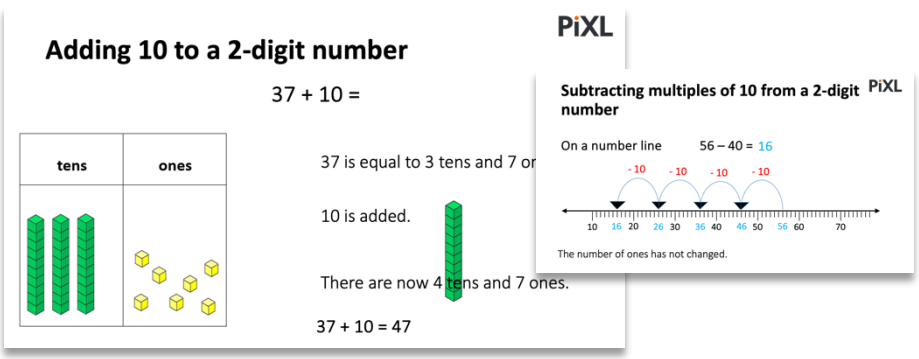
The mental agility tests include audio files and answer booklets. Children are given limited response times in relation to mental math calculations – to help teachers to measure and understand how well (and with automaticity) recall known facts and apply these in problem solving situations.

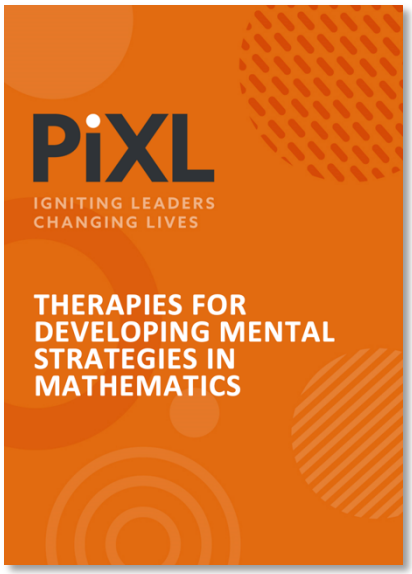
The mental agility tests are planned and shared on the Rhythm of the Year – ensuring coverage that enables leaders to see how well children are progressing in their mathematical fluency.

Therapies for children who require additional support

Where data collection demonstrates that children are not developing competence around mental maths – therapies are employed to support plugging gaps to improve outcomes for all pupils.

Teaching sequences are planned with visuals to support mental calculation through representation.





Therapies to support and target children who are not on track to achieve EXS in Maths

Within the 'Resources' box is the 'DTT' folder – here you will find 'B2' packages (these are designed for children not currently on track to achieve age-related expectation). These are planned units to break down concepts across the different domains.

These could be delivered in different ways:

- Teaching Assistant planned sessions that can be delivered to small groups
- Sessions planned within Mathematics lessons as starter/Do now activities.
- Opportunities to pre-teach or re-teach within the term – e.g. Week 1 or 7/8.

In the example below, a small-group teaching unit is designed to support fraction recognition as well as reasoning and problem-solving activities to support learners.

PiXL

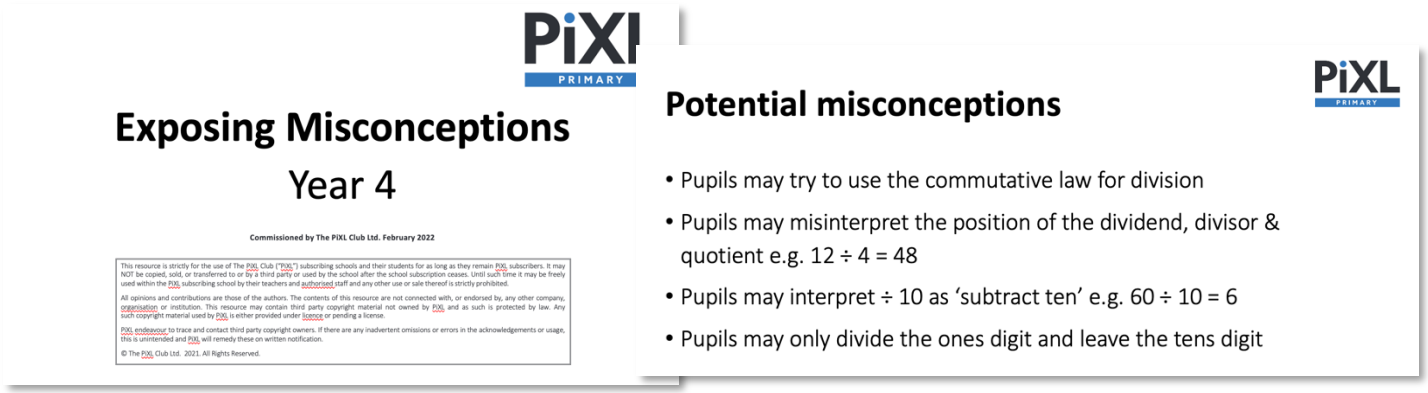
FRACTIONS

4a. Recognises, finds, names and writes fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity and know that all parts must be equal parts of the whole. The guidance is linked to the Year 3 B2 Mathematics PLC and is aimed at B2 pupils who are not expected to achieve Expected Standard this academic year but who are working above the standard of pre-key stage. The guidance gives teaching ideas for supporting B2 pupils both within whole class and within small groups. These small group work teaching ideas can also be shared with parents to support at home.

Quality First Teaching	Small group work teaching
Ensure you create an ethos that encourages pupils to ask for help and support when they need it. **Ensure pupils have access to:** • concrete objects and manipulatives for pupils to use independently. • models and images visible that relate to the concept being taught. • displays of explanations and modelling of methods or processes. **When teaching:** • Use direct instruction and simple language until the concept is secure. • Break down concepts or problems into chunks to allow for scaffolding – you may need to check for understanding at a very basic level as there may be gaps! • Ensure pupils are practising new skills in a variety of ways including practical and applying them in problem-solving activities. • Build in time to meet with pupils who are finding new concepts difficult, talk about their learning and check for misconceptions. • Minimise copying from the board. • Allow additional time to complete tasks if necessary and model memory techniques – consolidate and 'overlearn' key concepts. • Modify instructions based on data from formative assessment of students (such as classroom discussions or quizzes). • Provide opportunities for students to think aloud while they work.	Possible gaps in pupil knowledge to watch out for: pupils are unsure of the value of denominators and numerators, only see a fraction as part of a circle or strip – doesn't understand that a fraction can relate to a group of objects or number, does not understand that fractions need to have equal parts, gaps around equivalence. Show pupils the fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$. What do these numbers mean? Recap that the top number is the numerator and the bottom number is the denominator. The denominator is how many 'pieces' we are splitting an amount or shape in to. The numerator is how many of the 'pieces'. Ensure pupils are confident with what a third and a quarter looks like on a bar model. Practise drawing bar models to represent thirds and quarters of amounts. 20 → 5 5 5 5 (÷4) What is $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of 20? How do you know? Explain that to halve a number, we divide by 2. To find a quarter of a number, we halve and halve again or divide by 4. To find a third of a number, we divide or share by 3. Relate to multiplication knowledge. 60 → 30 30 → 15 15 15 15 → 20 20 20 **Reasoning and problem-solving activities** A B C D Have a look at these squares – which is the odd one out? D is not split equally. What fraction do they represent? Can you show $\frac{3}{4}$? Explain that we can see fractions of amounts all around us in everyday life: shops use offers such as "1/3 extra free" or "1/2 price", which means we have to sometimes calculate the new price or amount in our heads. Practise finding 'half price' of amounts using coins as concrete apparatus. Make explicit the relationship between multiplying by 2. Can we now find a quarter? What relationship does a quarter have to a half? "The shop now has a third off all items!" What do we need to do to calculate a third of an amount? We need to share it by three or use our 3 times table knowledge. Practice finding thirds by sharing with three groups and relating this to times table knowledge. Use these concepts to find quarters or thirds of lengths e.g. the shop is giving us a third extra on a carpet roll today, how can we calculate how much more that is? Continue to relate to bar models and multiplication knowledge.

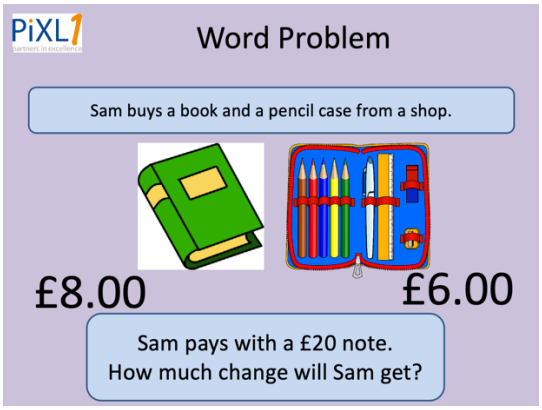
Exposing misconceptions in Maths

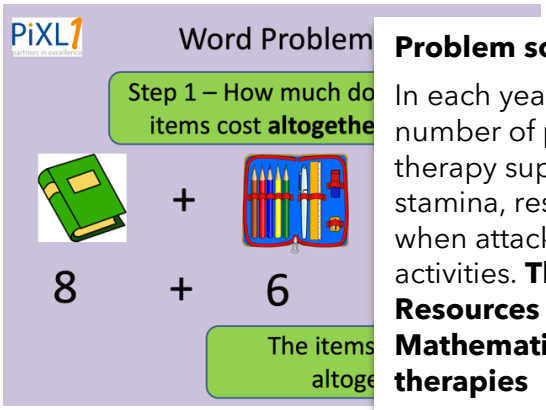
The PiXL programme presents us with year-group-specific misconceptions that we can utilise to support widening knowledge gaps in the subject.



These are available: Resources > Whole School Materials > Mathematics > Exposing misconceptions in Mathematics

Developing problem solving





Problem solving therapies

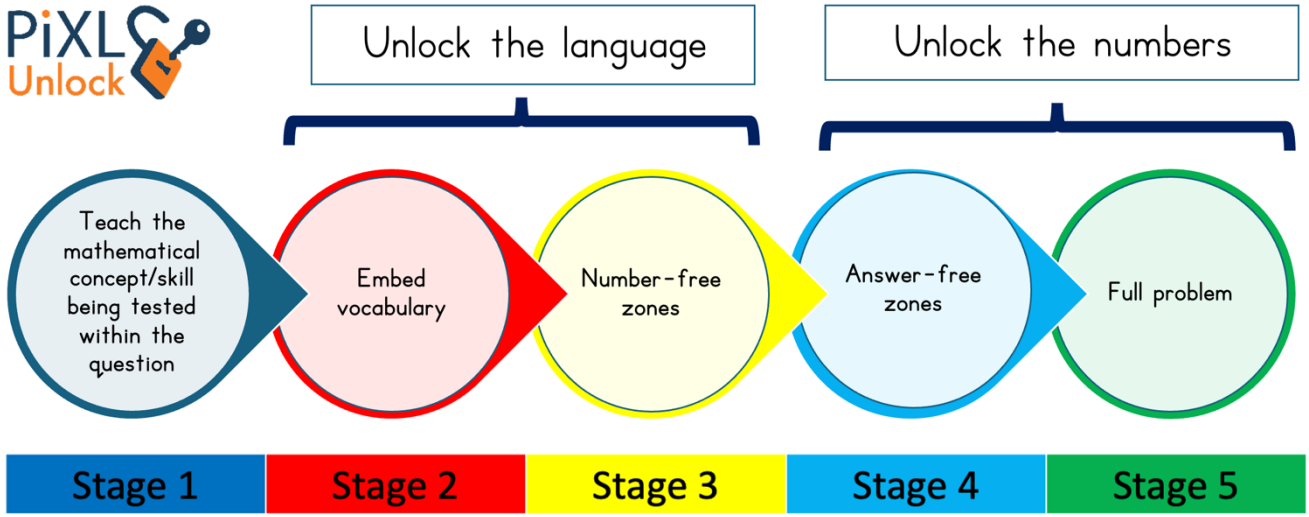
In each year group, there are a number of problem-solving therapy support tools to build stamina, resilience and focus when attacking problem solving activities. **These are located in Resources > Year Group > Mathematics > Problem solving therapies**

Unlocking word-problems

Typically, pupils lack confidence tackling word problems, mainly because they involve several steps and a large amount of information to process. Barriers to successfully answering these may, of course, be the mathematical concepts being assessed, but the amount of reading, the challenging vocabulary, as well as identifying the correct operation/s to perform, is not to be underestimated.

This therapy begins by explaining a suggested teaching strategy for these question types. The intention of this strategy is to **develop pupil confidence** in tackling such questions through high-quality modelling. Using the teach, model and apply format, it will take pupils through this strategy with two modelled questions. Pupils will then have the opportunity to apply this independently.

A step-by-step method



The therapies within the programme provide step-by-step process to support children through the stages.

This enables you to break down the concept with children, incrementally, to access problems of any variety.