Year 2 Unit 12: Numbers within 1000 (1 week)

This unit includes some work that lends its objectives from Year 3. If moving onto four digits seems daunting for some pupils, focus this unit on pupils being able to compare, order, read and write numbers regardless of the magnitude of the numbers invovled.

SKEW: Integer and Place Value

The above SKEW examines how a number can look very different when represented in another way, for example, 313 in ones looks very different in tens or hundreds.

**Before you start…**

This unit builds on the understanding from Unit 1. It is well worth using Maths Meetings or a consolidation lesson to ensure that pupils have the pre-requisite knowledge from the previous unit to access this unit.

- Can pupils accurately represent numbers up to 100 in several ways, making connections between them?
- How confident are pupils in ordering numbers up to 100 with clear reasoning to justify their decisions?
- How familiar are pupils with < > = symbols to compare numbers up to 100?
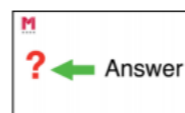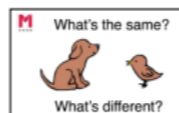
Consider how pupils can create more depth in their knowledge of place value of 3-digit numbers. Use of the Ideas for Depth such as 'What's the same? What's different?' and 'If this is the answer, what's the question?' can prompt pupils to compare and contrast. The value of a 'zero' within a 3-digit number can be a common misconception to look out for.
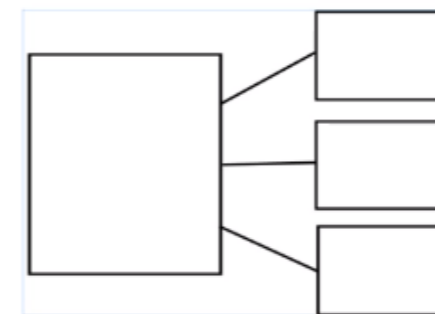
Hundreds	Tens	Ones

Recognising and explaining place value

L1 Recognising the place value of each digit in a 3-digit number

Pupils represent number primarily using Dienes. For each number, pupils should explain and make connections between the numbers and their Dienes equivalent. Place value charts help pupils to structure their use of abstract numbers and Dienes.

? What does each representation stress and ignore about place value? How can you continue to embed this as the unit progresses?
? For those pupils confident in this, can pupils make connections to other possible representations?

Exploring 3-digit numbers

L2 Exploring 3-digit numbers using the part-whole model
L3 Showing the value of a 3-digit number in more than one way

Pupils deepen their understanding of number through partitioning on a part-whole model into more than two parts. They then make connections from the abstract numbers to Dienes. By creating the whole in Dienes, they can demonstrate how a number can be partitioned in several ways. Pupils then go on to explore how 3-digit numbers can appear different when physically represented in different ways.

? Is there a way to best support pupils who struggle with partitioning with or without manipulatives?

Representing and reinforcing

It is important to think about how manipulatives and representations are introduced and reinforced within the classroom. The two articles below explore how we can reinforce calculations.
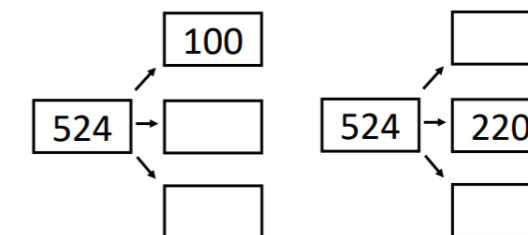
'Manipulatives in the Primary Classroom'
'From Objects and Images to Mathematical Ideas'

As a tweak on Lesson 2, you may wish to get partners to work using a 'magic pen', where one partner directs the other giving instructions while the other partner only moves manipulatives. This can add complexity in the Talk Task to encourage precise language.

Hundreds **2**	Tens **4**	Ones **7**

Beyond this, consider opportunities for pupils to regularly practice calculating intervals and scales, comparing and contrasting the effectiveness of strategies (trial and improvement, division).

How can some pupils be encouraged to generalise about what happens to the parts when they partition in different ways (if one part is 100 more, the other parts must be 100 fewer)? This is also a great opportunity to reinforce understanding of regrouping.

Using sentence stems as scaffolds for pupils to think deeply about the underlying structure of the maths can support this skill.

Applying knowledge of scales

L5 Accurately reading scales within 1000 units

Pupils now apply their learning over the unit and apply to reading scales. Although pictorial representations are provided, supplementing with concrete examples of scales is important for pupils to contextualise their use.

? How can pupils be encouraged to make links to the learning earlier in the week to support them in reading scales?
? What strategies can support pupils in calculating intervals?

When given groups of digits, can pupils find all the possibilities of 3-digit numbers? How do they know they have found them all?

Comparing numbers

L4 Comparing numbers within 1000

Pupils began to compare numbers within 1000, considering how they can justify the order. Where possible when ordering numbers, pupils use Dienes to show their understanding. They compare numbers with similar digits – pupils use written explanations (remembering this should be rehearsed orally before being written).

? What language and modelling will you use to support pupils' in their talk and reasoning?
? Working backwards, can pupils identify clues in the written words that might support them in ordering numbers?