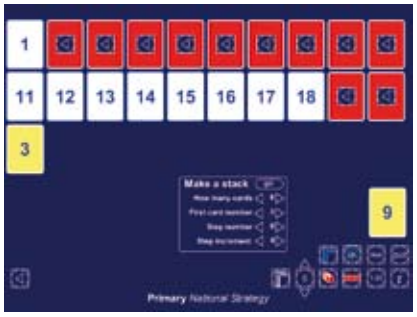
Year 5 – Block A

The models, images and practical resources detailed below will support the teaching of this Block. The text in italics relates directly to the learning overview of each Unit in the Block – this is accessed using the planning tab in the Framework. Select Planning–Year group–Block then click on the Unit tabs.

285	266		228
209		171	152
		95	
	38	19	0

Twenty cards interactive teaching program



-35		-27	-23
-19			-7
13	17		25
29		37	41

42.3	42.8		
44.3		45.3	45.8
	46.8	47.3	47.8
	48.8	49.3	

Children create sequences by counting on and back from any start number in equal steps such as 19 or 25. They record sequences on number lines. They describe and explain the patterns in a sequence.

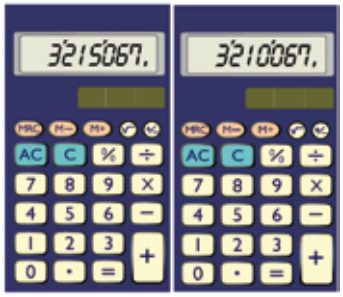
For example, when subtracting 19 to generate the sequence 285, 266, 247, …, they explain that subtracting 19 is equivalent to subtracting 20 then adding 1, so the tens digit gets smaller by 2 each time and the units digit increases by 1. They use patterns to predict the next number (228) and explore what happens when the hundreds boundary is crossed.

They identify the rule for a given sequence. They use this to continue the sequence or identify missing numbers, e.g. they find the missing numbers in the sequence 89, 71, 62, recognising that the rule is 'subtract 9'. They explore sequences involving negative numbers using a number line. For example, they continue the sequence –35, –31, –27, … by recognising that the rule is 'add 4'.

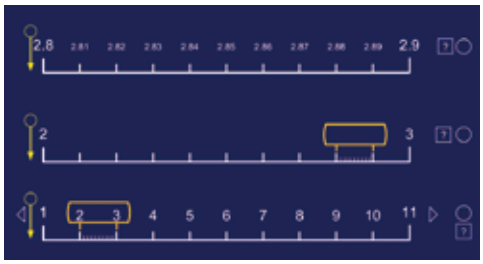
The grids illustrated have been created using the Increasing and decreasing number grid spreadsheets. Start number, column size and step size can be changed. They can be found in the library section of the Primary Framework.

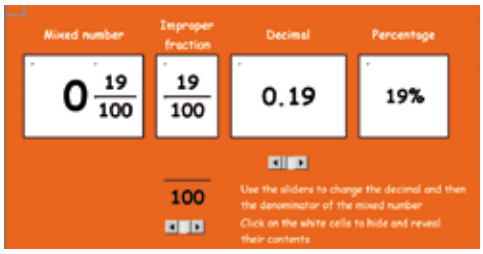
Children count in decimal steps, for example in steps of 0.4 or 0.09. They compare these sequences to those involving whole numbers, comparing, for example, the count 0.4, 0.8, 1.2, … to the count 4, 8, 12, …

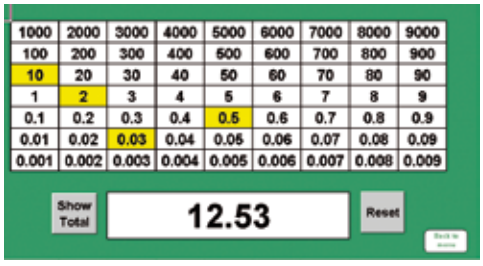
The program illustrated is Twenty cards interactive teaching program. It can be found in the library section of the Primary Framework.



Decimal number line interactive teaching program







*Children **read and write large whole numbers**. For example, they work in pairs using a set of cards containing 6 and 7 digit numbers: one child takes a card and reads the number in words; their partner keys the number they hear into a calculator; they check that the calculator display and the number card match. Children recognise the value of each digit and they use this to **compare and order numbers**; for example, they explain which is the greater value, the 5 in 3 215 067 or the 5 in 856 207. They compare two numbers and explain which is bigger and how they know. They solve problems such as:*

- *Use a single subtraction to change 207 070 to 205 070 on your calculator.*

*Children use images such as bead strings or number lines to help them **count in tenths and hundredths** from various start numbers. They **position decimals on number lines**, explaining for example that 2.85 lies halfway between 2.8 and 2.9. They suggest numbers that lie between, say, 13.5 and 13.6.*

*Children **partition decimals** using both decimal and fraction notation, for example, recording 6.38 as 6 + 3/10 + 8/100 and as 6 + 0.3 + 0.08. They write a decimal given its parts: e.g. they record the number that is made from 4 wholes, 2 tenths and 7 hundredths as 4.27. They apply their understanding.*

The programs illustrated are Decimal number line interactive teaching program, Place value and partitioning spreadsheet, Midpoint spreadsheet and FDP convertor spreadsheet. They can be found in the library section of the Primary Framework.

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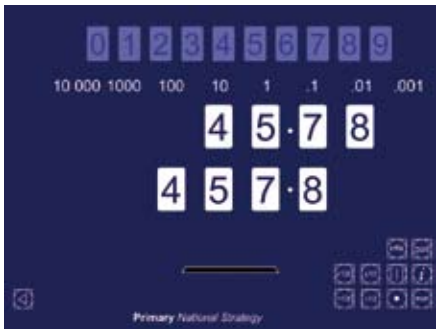
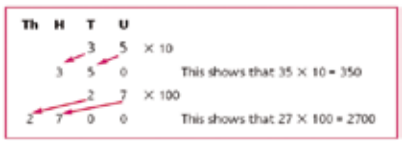
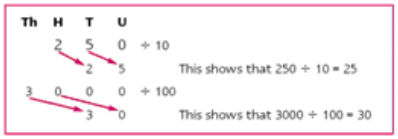
Moving digits interactive teaching program





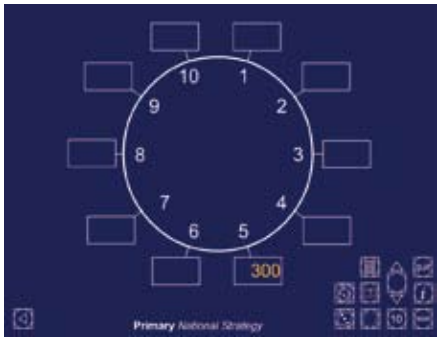


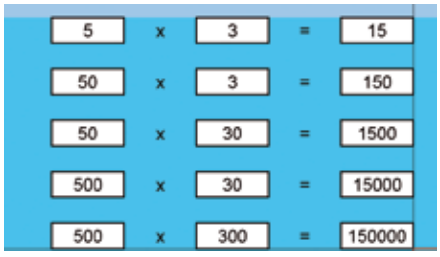
Children use calculators (possibly by setting a constant function) or the ITP 'Moving digits' to explore the effect of repeatedly multiplying and dividing numbers by 10.

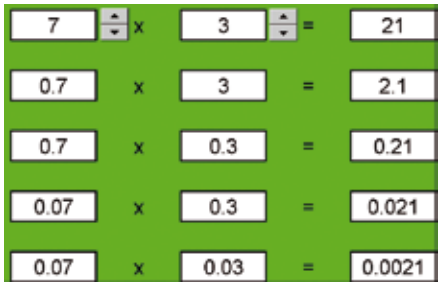
They compare the effect of multiplying a number by 1 000 with that of multiplying the number by 10 then 10 then 10 again (and similarly for division). They use digit cards and a place value grid to practise ***multiplying and dividing whole numbers by 10, 100 or 1000*** *and answer questions such as:*

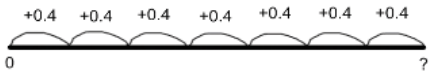
- *32 500 ÷ ☐ = 325*
- *How many £10 notes would you need to make £12 000?*

Number dials interactive teaching program





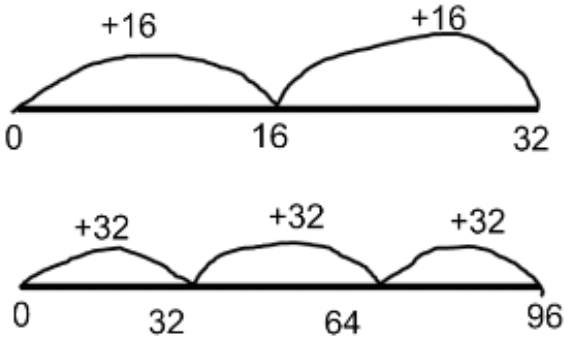
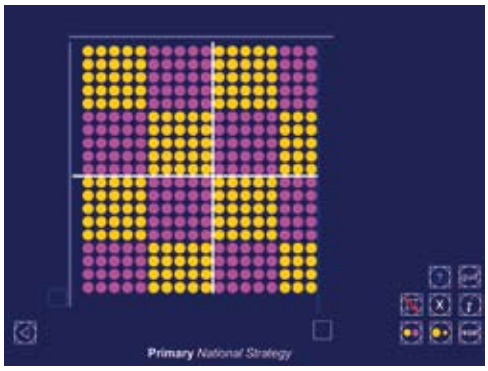
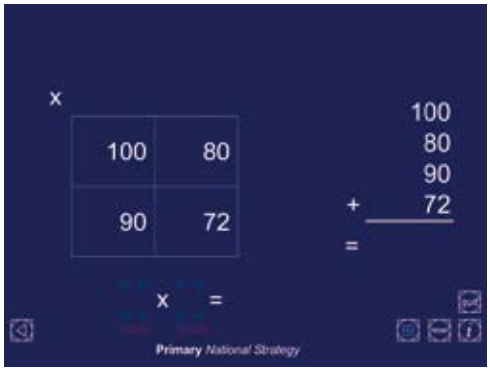
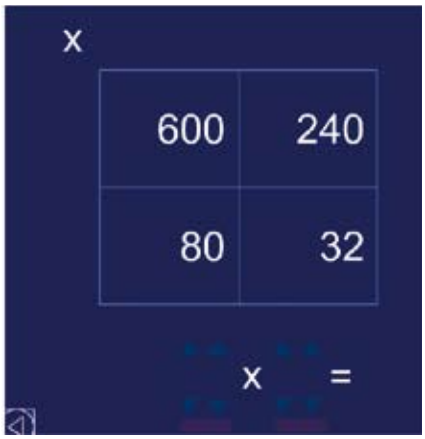




Children rehearse multiplication facts and use these to derive division facts, to find factors of 2-digit numbers and to multiply multiples of 10 and 100, e.g. 40 × 50.

They use this relationship to answer related questions such as 0.4 × 7 (Where do we land after 7 hops of 0.4?) or 3.2 ÷ 0.4 (How many hops of 0.4 are needed to reach 3.2?). They count using measures, for example in steps of 0.2 kg.

The program illustrated is Number dials interactive teaching program. It can be found in the library section of the Primary Framework.

16 x 6 = 16 x 2 x 3  	*Children **use and discuss mental strategies** for special cases of harder types of calculations, for example to work out 274 + 96, 8006 – 2993, 35 × 11, 72 ÷ 3, 50 × 900. They use factors to work out a calculation such as 16 × 6 by thinking of it as 16 × 2 × 3. They record their methods using diagrams (such as number lines) or jottings and explain their methods to each other. They compare alternative methods for the same calculation and discuss any merits and disadvantages.*
Multi-array interactive teaching program  Multiplication grid interactive teaching program  	*Children use their understanding of whole-number and decimal place value to **extend written methods for multiplication and division** (including TU × TU, U.t × U and HTU ÷ U).* The programs illustrated are Multi-array interactive teaching program and Multiplication grid interactive teaching program. They can be found in the library section of the Primary Framework. Alternatively use dotty wrapping paper to support arrays.

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