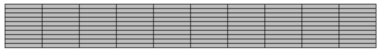
Year 2 Number and calculating planning (Weekly) Term: Summer 1 Week 1

DAY	We Are Learning To (WALT):	MODEL / INTRODUCTION	INDEPENDENT WORK	PLENARY
M	Mental: To be able to count **up** across hundred barriers Main: Understand place value Sum001	Mental: Have children sit in rows opposite each other in pairs. Give them a number to count up from (focusing on crossing over hundreds boundaries). Children take it in turns to say a number Main: TA to take G+T children to work on place value with numbers with 1 decimal place: Show children a stick of ten:  Show children another version of it:  Explain how each unit in the second ten has been split in to tenths Give each child a unit that has been split in to tenths and have them cut it up in to ten strips. Explain that each of these is called a tenth, so a unit is made up of ten tenths Show children some examples of numbers, representing them using these units squares and tenths strips e.g. 3.2 would be 3 unit squares and 2 tenth strips, 8.9 would be 8 unit squares and 9 tenth strips etc Ask the children to show you some examples of their own Show children how 1.0 and 1, 2.0 and 2, 3.0 and 3 (etc) are the same Emphasise how 1.0 is not worth more than 1 even though it has more digits. Same for 2.0 and 2, 3.0 and 3 etc Explain idependent work Teacher (with remainder of class): Revise how we need to look at the position, or place, of a number to know what it is worth i.e. is it in the hundreds, tens or units column. Use place value ITP from http://www.taw.org.uk/lic/itp/place_val.html to model how 4 is worth 4 units, 40 is worth 4 tens and 400 is worth 4 hundreds, so 40 is worth more than 4 and 400 is worth more than 40. Repeat with other similar numbers e.g. 6, 60 and 600. Also explain with base-ten materials Model how we can 'exchange', ten units for one stick of ten and explain how ten units are worth the same as one stick of ten Similarly we can exchange ten sticks of ten for one hundred square Model how we can use drawings to represent each number (like below). Model how to complete independent work On pupil whiteboards ask children to draw a representation of a given number. Tell children not to show their whiteboards until asked (to stop copying). Keep any children who are still unsure	Lower ability – draw representations to show the value of each digit in **2-digit numbers** Middle ability – draw representations to show the value of each digit in **3-digit numbers** e.g. for 123 Higher ability - draw representations to show the value of each digit in **4-digit numbers** e.g. for Gifted and talented – write the value of a representation of **numbers to 1 decimal place** e.g. is 3.2 Extension – think of own numbers to draw representations of, and draw them	In ability partners give children a pupil whiteboard and a pen. Ask children to give their partners a number to draw a representati on of. Discuss if they think their partner drew a suitable representati on. Why / why not? Repeat

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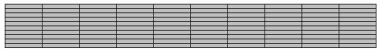
Tu	Mental: To be able to count **back** across from 10 to 100 Main: Partition numbers Sum002	Mental: Have children sit in rows opposite each other in pairs. Give them a number to count back from (focusing on crossing over hundreds boundaries). Children take it in turns to say a number Main: TA to ask G + T children to partition some 4-digit numbers; if confident with this go with TA to work on partitioning numbers with a decimal place; if not stay with the rest of the class Have TA take G+T children to work on partitioning numbers with a decimal place: Show children a stick of ten:  Show children another version of it:  Revise how each unit can be split in to tenths Give each child a unit that has been split in to tenths and have them cut it up in to ten strips. Revise how each of these is called a tenth, so a unit is made up of ten tenths Show children some examples of numbers, representing them using these units squares and tenths strips e.g. 3.2 would be 3 unit squares and 2 tenth strips, 8.9 would be 8 unit squares and 9 tenth strips etc Model how to partition numbers with one decimal place in different ways Ask the children to show you some ways of partitioning numbers with a decimal place (Teacher with remainder of class) Revise how columns in 2-digit numbers are tens and units and columns in 3-digit numbers are hundreds, tens and units Use Place Value ITP at http://www.taw.org.uk/lic/itp/place_val.html (if link does not work, just Google 'Place Value ITP') to show how a number in the tens column is worth ten times as many as a number in the units column e.g. a 1 in the tens column is worth 10, whereas a 1 in the units column is worth only 1. Repeat to show how a number in the hundreds column is worth ten times as many as a number in the tens column e.g. the 1 in 100 is worth ten lots of ten Model how we can partition numbers in different ways e.g. 43 = 40 + 3 or 40 + 2 + 1 or 20 + 20 + 3 etc Repeat above model for 3 and 4-digit numbers as well	Lower ability – partition numbers up to 20 Middle ability – partition 2-digit numbers Higher ability – partition 3-digit numbers G+T – partition 4-digit numbers and numbers with 1 decimal place Extension – make up own numbers to partition in different ways on pupil whiteboards	Ask children to come up with some of their own numbers and partition them **in more than one way** on their pupil whiteboards. Explain what they have done to a partner

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W	Mental: To be able to count **up** in tens from any number Main: Understand addition and subtraction as inverses Sum003	Mental: Have the hundred square on the IWB from http://www.taw.org.uk/lic/itp/num_grid.html Highlight a number. Practice counting up in tens from it Main: Briefly revise how to add and subtract on number line. What do children notice about the direction that you move? Briefly revise how to add and subtract multiples of ten on a hundred square. What do children notice about the direction that you move? Explain how addition and subtraction are inverse (opposite) This means that we can use addition to check subtraction and vice versa. Model how to do this with some subtractions that are incorrect e.g. to check 6 - 4 = 3, we can do 4 + 2 = 6 and see that we made a mistake with the subtraction Explain how we can also write two different addition and two different subtraction number sentences using the same numbers, just by swapping the order of the numbers around e.g. 8 – 5 = 3, 8- 3 = 5, 5 + 3 = 8 and 3 + 5 = 8 Emphasise need to check number sentences are correct, not just swap around the numbers in any way Model swapping the numbers around incorrectly e.g. 8 – 5 = 3, 8- 3 = 5, 5 + 3 = 8 and 3 + 8 = 5 (To help you can tell children that addition sentences will always end in the largest number, whereas subtraction sentences always end in the smallest number, although this is not true once children work with negative numbers)	Lower ability – write **one** addition and **one** subtraction sentence as inverses e.g. 8 – 5 = 3 and 5 + 3 = 8 Middle ability – write **two** addition and **two** subtraction sentence as inverses e.g. 8 – 5 = 3, 8- 3 = 5, 5 + 3 = 8 and 3 + 5 = 8 Higher ability – as middle ability, but with multiples of 10 G+T – as middle ability, but with multiples of 100 Extension – make up their own number sentences	Each child to give a partner a number sentence to write an inverse sentence / s to go with. Partners discuss if agree about number sentences that each of them has written

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Th	Mental: To be able to count **back** in tens from any number Main: Use inverses to solve missing number problems Sum004	Mental: Have the hundred square on the IWB from http://www.taw.org.uk/lic/itp/num_grid.html Highlight a number. Practice counting back in tens from it Main: Revise how we learnt yesterday that addition and subtraction were inverse (opposite) This means that we can use addition to check subtraction and vice versa. Model how to do this with some subtractions that are incorrect e.g. to check 6 - 4 = 3, we can do 4 + 2 = 6 and see that we made a mistake with the subtraction It also means that we can use addition to find the missing number in a subtraction number sentence e.g. 7 - __ = 5, we can say 5 + __ = 7 Similarly we can use subtraction to work out the missing number in an addition number sentence e.g. 6 + __ = 9, we can say 9 - __ = 6 We can also use addition to check subtraction and vice versa in the same ways	Lower ability – children to calculate the missing number in addition and subtraction sentences with **numbers up to 10** (children who work slowly to work on worksheet) Middle ability – children to calculate the missing number in addition and subtraction sentences with **1-digit** numbers up to 100 Higher ability – children to calculate the missing number in addition and subtraction sentences with **2-digit** numbers up to 100 Extension – make up their own addition and subtraction number sentences with a missing number for a partner to complete on pupil whiteboards	Each child to give a partner a addition or subtraction number sentence to find the missing number for. Show each other what they think the missing number is. Partners discuss if agree about missing number

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F	Mental:
	To be able to count **up and back** in tens from any number
	
	Main:
	Use column addition (with partitioning)
	
	Sum005
		Mental:
		Have the hundred square on the IWB from http://www.taw.org.uk/lic/itp/num_grid.html Highlight a number. Practice counting up / down in tens from it
		
		Main:
		Go through PowerPoint with the following:
		• Explanation of the difference between horizontal / vertical and what a column is
		• Adding 54 + 32 on a number line (emphasise how long it takes)
		• Adding 54 + 32 on a hundred square (emphasise how long it takes)
		• Adding 54 + 32 in columns (emphasise how this is quicker)
		• Go through examples of how to set out adding single digits and multiples of 10. Explain how horizontal line is like the = sign. Lower ability start work
		• Adding 2-digit and 3-digit numbers e.g.
		  4 0 + 3 2 0 0 + 3 0 + 4
		+ 2 0 + 5 + + 5 0 + 2
		  6 0 + 8 2 0 0 + 8 0 + 6
		(With every example reinforce four main teaching points:
		➢ Start on the right-hand side
		➢ Put only 1 number in a square
		➢ Write the +
		➢ Put units under units and tens under tens and so on
		• Middle and higher ability start work
		• Model for G+T how to use column addition with number to 1 decimal place, including .0 where it is helpful e.g. 5 + 1.4 can be easier as 5**.0** + 1.4
		• Final slide with reminders of the 4 key points above. Print out and enlarge / leave copies on tables of this final slide
		Remind children to leave space between calculations and not squash them together
		Give children a copy of the success criteria to stick at the top of their page
			(At regular intervals have children stop and check their work against the success criteria)
			
			Lower ability – add 1-digit numbers and multiples of 10 (children who work slowly to work on sheet) Give tens sticks if needed
			
			Middle ability – add 2-digit numbers (no carrying)
			
			Higher ability – add 3-digit numbers (no carrying)
			
			Extension – add 4-digit numbers and numbers to 1 decimal place (no carrying)
				Have children self-asses their work against the success criteria
				In ability partners give children 4 questions per pair, two for each partner
				Children need to talk to their partner, explaining what they are doing e.g. I will put the 3 under the other 3 because they are both units, then I draw my equals line with a ruler and use my fingers to calculate the answer
				Children swap over and partner who spoke first now listens