Column addition and subtraction lesson plan

Subject: Maths **Lesson Title:** Column addition and subtraction	
Date:	**Time Span:**
Year Group: Year 3	**Group Size:** 30

Desired Learning Outcomes To be able to add and subtract in columns	**NC PoS ref:**

Key Language: Column, horizontal, vertical, units, tens, hundreds, thousands, tenths, carry, borrow, add and subtract	**Use of ICT:** Smartboard for introduction

Assessment (Make reference to each section of the lesson)
Intro – Level of work based on ongoing assessment
Main – Mark children's work as they complete it. Sit with any children who are struggling, bringing them back to the carpet if necessary. If still unsure by end of lesson sit with TA during plenary.
Plenary – Can children explain their working out to a partner, using the correct terminology e.g. column, units, tens etc?

Use of Other Adults
TA to work with lower ability children at the start of the lesson
TA to monitor progress of children once they begin working
TA to sit and continue working with children (of any ability) who struggled in plenary

Anticipated Misconceptions/Difficulties
Children starting on the left
Children not putting numbers in the correct columns e.g. putting units under tens
Children not putting only 1 number in each square and thus getting columns confused
Children forgetting to write the + / - sign to show the operation being calculated
Children forgetting to write the one they carry or borrow / take and / or cross out the number that they took the one from and write the new number above it
Children not concentrating / getting confused with addition and subtraction
Children not knowing when they need to carry / borrow or not

Resources
Number line up to 50 available from http://www.sparklebox.co.uk/2576-2580/sb2579.html#.UFmg1BgQmPo (laminated and cut up)
Squared paper for plenary
Copies of success criteria on children's tables (not for lower ability)

Introduction	**Time**
TA to take children who are unable to add / subtract a 1-digit number from / to a 2-digit number that requires crossing tens barriers (e.g. 48 + 4 or 42 - 4) Practice counting up and down from 100, especially focusing on crossing tens barriers Practice counting up and down from 100 in tens Calculate mentally by putting first number in head and counting on / back, using fingers to keep count Work on setting these questions out in columns and calculating them mentally Go through PowerPoint with the following: • Revise what column and vertical mean • Revise 4 key teaching points (see below) • Explanation of when the two digits in a column add up to 10 or more you need to carry a ten / hundred / thousand to the next column to the left • Explanation of how when the bottom number in a column is greater than the top number, you need to take a ten / hundred / thousand from the next column to the left • Go through examples of how to add and subtract 2-digit and 3-digit numbers e.g.  (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 ➢ Carry / the ten / hundred / thousand or cross out the number you take from and write its replacement above it Middle and higher ability start work go to stick success criteria in books • Model for G+T how to use column addition and subtraction with number with decimal places Remind children to leave space between calculations and not squash them together Have a copy of the success criteria to stick at the top of their page on each child's desk (except for lower ability as they do not need to think about all of the criteria)	10 mins
Main (including differentiated tasks) (At regular intervals have children stop and check their work against the success criteria) Lower ability – add and subtract 1-digit numbers from 2-digit numbers (give number line if really needed) Middle ability – add and subtract 2-digit numbers Higher ability – add and subtract 3-digit numbers Extension – add and subtract 4-digit numbers and numbers with decimal places	25 mins
Plenary Have children self-asses their work against the success criteria In ability partners give children 1 question to do each Children need to talk to their partner, explaining what they are doing e.g. I will put the 6 under the 5 because they are both units. Then I will put the 20 under the 40 because they are both tens. Then I draw my equals line with a ruler. Then I start on the right and subtract the units first, borrowing a ten. I cross out the old tens number and write the new number in the tens, and then I subtract the tens Children swap over and partner who spoke first now listens	10 mins