Adding with objects and on a number line lesson plan

Subject: Maths	**Lesson Title:** Adding with objects and on a number line	
Date:		**Time Span:**
Year Group: Year 2		**Group Size:** 30

Desired Learning Outcomes	**NC PoS ref:**
To know how to use a number line to assist with adding	

Key Language: Add, plus, more, jump, tens	**Use of ICT:** Smartboard for introduction

Assessment (Make reference to each section of the lesson)
Intro – TA to check children who may / may not be able to use objects to add. Can children explain why teacher's deliberate mistakes are incorrect?
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 calculate the answer and explain what they are doing?

Use of Other Adults
TA to work with lower ability children during main part of lesson
TA to sit and continue working with children (of any ability) who struggled in plenary

Anticipated Misconceptions/Difficulties
Lower ability – not understanding that they need to find the number of objects in both numbers in the number sentence and add them together
Middle ability – when jumping skipping numbers, not landing on a number or counting the first number as a jump, not starting to count after the first jump
Higher ability – changing the units when adding multiples of 10 instead of changing the tens e.g. to calculate 45 + 20, getting 47
Gifted and talented – using too many jumps e.g. to calculate 43 + 68, only jumping one ten at a time

Resources
Number lines for extension and model available from
http://www.sparklebox.co.uk/2576-2580/sb2579.html#.UFmg1BgQmPo (laminated and cut up)
Pupil whiteboards and pens

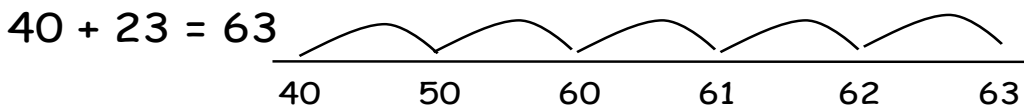|	Time
Introduction TA to take children who are unsure how to use concrete objects e.g. cubes, counters to add TA to model how to add using such concrete objects e.g. to do 4 + 2 get 4 cubes, get two more and count how many there are Ask each child to do an example. Children who are confident can get started on their independent work and children who are unsure can go through more examples with TA Teacher (with remainder of class) Model how to add on a number line by starting on the first number, then doing the number of jumps for the second number e.g. to calculate 4 + 2, start on number four and do two jumps. Do another example making deliberate mistakes of missing out numbers when jumping or landing in between numbers. Ask children to explain why these are mistakes. Emphasise: - need to land on a number (not between numbers) - not skip a number - make sure not to count the first number, only count after the first jump (You may wish to have middle ability children start their work at this point) Revise how when you add multiples of ten, only the tens number changes e.g. in 45 + 20, only the 4 changes, not the 5. Model how we can use a blank number line to calculate with 2-digit numbers: 1. Write the first number in the addition sentence at the start of the number line 2. See how many tens there are in the number to be added and carry out this many jumps of 10. 3. Do jumps of one for however many units there are 4. e.g. for 40 + 23, do two jumps of ten (one from 40 to 50 and another from 50 to 60, then three jumps of one, from 60 to 61, 61 to 62 and 62 to 63) $40 + 23 = 63$ 40 50 60 61 62 63 Encourage children working on addition of 2-digit numbers to use larger jumps e.g. to calculate 40 + 23 they may do one jump of 20 and one jump of 20 and one jump of 3, as using larger jumps is quicker if children can do it accurately	15 mins
Main (including differentiated tasks) Lower ability – use concrete objects to add with numbers below 10 Middle ability – use a number line with all numbers on it, to do jumps of 1 Higher ability – use a blank number line to add multiples of 10 Gifted and talented – use a blank number line to add 2-digit numbers Extension – children to make up their own addition sentences to calculate on pupil whiteboards	20 mins
Plenary In ability partners give children 2 questions per pair, one for each partner (lower ability children to use cubes and middle ability children to use laminated number lines). Children need to talk to their partner, explaining why they are using the method that they are using e.g. using four jumps of ten to add 40 because there are 4 tens in forty.	10 mins