

Subtracting with objects and on a number line lesson plan

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

Desired Learning Outcomes

To know how to use a number line to assist with subtracting

Key Language:

Subtract, take away, minus, 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 subtract.
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 the first number in the number sentence and then take away the second number of objects

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 subtracting multiples of 10 instead of changing the tens e.g. to calculate $45 - 20$, getting 43

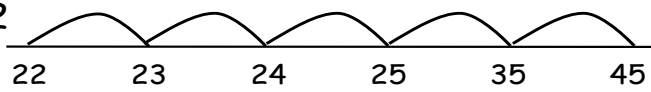
Gifted and talented – using too many jumps e.g. to calculate $72 - 54$, only jumping one ten at a time

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
<p>Introduction</p> <p>TA to take children who are unsure how to use concrete objects e.g. cubes, counters to subtract</p> <p>TA to model how to subtract using such concrete objects e.g. to calculate 4 - 2 get 4 cubes, take two away and count how many there are left</p> <p>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</p> <p>Teacher (with remainder of class)</p> <p>Model how to subtract on a number line by starting on the first number, then doing the number of jumps back for the second number e.g. to calculate 4 - 2, start on number four and do two jumps back</p> <p>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.</p> <p>Emphasise:</p> <ul style="list-style-type: none"> • 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 <p>(You may wish to have middle ability children start their work at this point)</p> <p>Revise how when you subtract multiples of ten, only the tens digit changes e.g. in 45 - 20, only the 4 changes, not the 5.</p> <p>Model how we can use a blank number line to calculate with 2-digit numbers:</p> <ol style="list-style-type: none"> 1. Write the first number in the subtraction sentence at the end of the number line 2. See how many tens there are in the number to be subtracted and carry out this many jumps of 10. 3. Do jumps back of one for however many units there are 4. e.g. for 45 - 23, do two jumps of ten (one from 45 to 35 and another from 35 to 25), then three jumps of one, from 25 to 24, 24 to 23 and 23 to 22) <p>45 - 23 = 22</p>  <p>Encourage children working on subtraction of 2-digit numbers to use larger jumps e.g. to calculate 45 - 23 they may do one jump of 20 and one jump of 3, as using larger jumps is quicker if children can do it accurately</p> <p>(If children prefer to start at the left of the number line, rather than the right, it does not matter as long as they are using and understanding the strategy)</p>	15 mins
<p>Main (including differentiated tasks)</p> <p>Lower ability – use concrete objects to subtract with numbers below 10</p> <p>Middle ability – use a number line with all numbers on it, to do jumps of 1</p> <p>Higher ability – use a blank number line to subtract multiples of 10</p> <p>Gifted and talented – use a blank number line to subtract 2-digit numbers</p> <p>Extension – children to make up their own subtraction sentences to calculate on pupil whiteboards</p>	20 mins
<p>Plenary</p> <p>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 subtract 40 because there are 4 tens in forty.</p>	10 mins