

Developing place value understanding

Purpose

To develop:

- an understanding of an abstract composite unit of 10
- off-the-decade counting knowledge.

Outcomes

NS1.1: Counts, orders, reads and represents two- and three-digit numbers

NS1.2: Uses a range of mental strategies and informal recording methods for addition and subtraction involving one and two-digit numbers

MA1-4NA, MA1-5NA

Framework reference

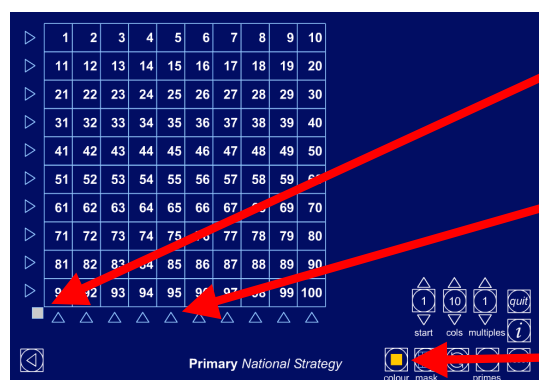
To move students to Place value level 1

Materials

Learning object: 1-100 chart

https://detwww.det.nsw.edu.au/curr_support/beststart/movies/number_grid.swf

Teaching points



- To hide all of the numbers on the 1-100 chart learning object, click on the small square on the bottom left-hand side of the chart.
- Click on the square again to change the colour.
- Click on the triangles at the bottom of each column to hide all of the numbers.
- Clicking on the 1-100 chart will reveal the number in that position.
- Clicking on a revealed number will hide it again.
- To colour in squares, click on the colour tool to select a colour and then click on a square on the chart.




Suggested *Short, focussed, frequent* activity

	Outline	Questions
Introduction	<p>Hide all of the numbers on the 1-100 chart learning object.</p> <p>Reveal the numeral one.</p> <p>Reveal numerals two to four.</p> <p>Hide the numerals again, except for the numeral one.</p> <p>Repeat the process with other numbers to ten,</p>	<p><i>Here is the number one. Where do you think the number four will be? (Do not reveal the number.) How do you know?</i></p> <p><i>How many did we add to the number one to reach the number four?</i></p>



TAKING OFF WITH

	Outline	Questions
	the final time locating the numeral seven. Use the colour tool to colour in squares one to seven.	<i>Here we have the number seven.</i>
Concept development	<p>As the students are discussing the problem, listen to their strategies and select a student who suggests a count-by-one strategy.</p> <p>Have the student demonstrate the strategy by selecting a different colour on the colour tool and then clicking on each numeral from 8 to 17 on the chart.</p> <p>Discuss any other strategies that students had for locating the number 17 on the chart.</p> <p>Select a student to move the cursor to where he or she thinks the numeral 27 is on the chart without revealing it.</p> <p>Reveal the squares suggested by the students until 27 is located.</p> <p>Use the colour tool to colour numerals 18 – 27.</p> <p>Select a student to record the number sentence on the board.</p>	<p> Discuss with a partner how to determine where the number 17 is on the chart. (When using this as a SFF, you may select a different number)</p> <p><i>How many more is 17 than 7? Can you show me on the chart what the seven means when you write the number 17? Can you show me on the chart what the one means when you write the number 17?</i></p> <p><i>Who agrees? Why? Who thinks the 27 will be located in a different place on the chart? Why?</i></p> <p><i>How many more is 27 than 17? What does the 7 mean in the number 27? What does the 2 mean in the number 27?</i></p> <p><i>What do you notice about the numbers 7, 17, 27?</i></p> <p><i>Why is the first digit of each number in this sequence changing? Why does the second digit of each number in the sequence remain the same?</i></p> <p><i>What number sentence could we write to show how we moved from 17 to 27</i></p>



	Outline	Questions
Strengthening the concept	<p>Move the cursor above the numeral 37, without revealing it.</p> <p>Reveal the numeral 37 and draw the students' attention to the column displaying 7, 17, 27.</p> <p>Repeat the steps and questioning for the numbers 47 and 57.</p> <p>Provide pairs of students with a 10 x 10 grid. Have one student in each pair select a number, identify its position on the grid and record it. Have the partner identify and record the numbers above, below and on either side of the selected number.</p> <p>Have the partners take turns to repeat the activity for other numbers.</p>	<p><i>What number do you think is here? How do you know?</i></p> <p><i>Can you see a pattern like this one somewhere else on the chart?</i></p> <p><i>What number sentence could we write to show how we moved from 27 to 37?</i></p>

