

Finding the difference

Purpose

To understand and use the strategies of *building up* and *jumping back* to find the difference between two two-digit numbers

Outcomes

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

NS2.2 Uses mental and written strategies for addition and subtraction involving two-, three- and four-digit numbers

MA1-5NA, MA2-5NA

Framework reference

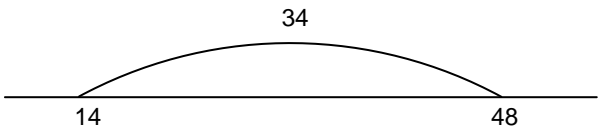
To move students to Place value level 2

Teaching point

- In Stage 1, students encounter two forms of subtraction: *taking away* and *finding the difference*.
- When we model finding the difference between two numbers on the empty number line, we start by recording both numbers on the number line.




Suggested *Short, focussed, frequent* activity

	Outline	Questions
Introduction	<p>Display the following number line on the board:</p>  <p>Organise the students into pairs and provide them with pencils and paper. Have the pairs of students discuss and record the number sentences that could be represented by this diagram.</p> <p>Select some pairs of students to share their findings with the class and record them on the board.</p> <p>If a pair of students identifies the diagram as representing $48 - 14$, ask the students to explain this and record the subtraction above the diagram.</p> <p>If no pair of students identifies the diagram as representing $48 - 14$, discuss the diagram with the class.</p>	<p><i>How does this diagram help you to find the difference between two numbers?</i></p>



Outline	Questions
<p>Record $48 - 14$ above the diagram.</p> <p>If necessary, repeat with other pairs of numbers.</p>	<p><i>The difference between which two numbers is represented by this diagram?</i></p> <p><i>How would this difference be written as a number sentence?</i></p> <p><i>What is the difference between 48 and 14?</i></p>
<p>Ask the students how big a jump would be needed to get from 10 to 40. Select a student to record this on a number line on the board.</p> <p>Ask the students how big a jump would be needed to get from 20 to 40. Select a student to record this on a number line on the board:</p> <div> </div> <p>Have a student record 19 on the diagram. Select a student to demonstrate how to determine the difference between 19 and 40 by building up the count from 19. Select a student to demonstrate determining the difference between 19 and 40 by jumping back from 40.</p> <p>Ask the students to find the difference between the following pairs of numbers, using both the <i>building up</i> strategy and the <i>jumping back</i> strategy:</p> <p style="margin-left: 100px;">75 and 24 64 and 23 87 and 28</p> <p>Have the students work in pairs to share their strategies and confirm their answers.</p>	<p><i>How could you use this diagram to work out the difference between 19 and 40?</i></p> <p><i>Where would 19 be on the diagram?</i></p> <p><i>Do both strategies give the same result?</i></p> <p><i>Which strategy do you prefer? Why?</i></p>



	Outline	Questions
Strengthening the concept	<p>Discuss with the whole class the situations in which the two strategies discussed are useful to find the difference between two numbers.</p> <p> Have each student draw a diagram to find the difference between two numbers. Have the students swap their diagram with a partner.</p> <p>Discuss with the whole class how they identified the subtraction represented by each diagram.</p>	<p><i>Which strategy did you use, building up or jumping back? Why?</i></p>

