

## **Lesson Plan Chapter 5**

In practice

The following lesson plan was used to draw on a group's current understandings of number bonds to 10 to begin to develop an understanding of place value in decimals. I did this through asking them to find pairs and triples of numbers that total 10 or 100 including decimals. This allowed them to use the knowledge that  $45 + 55 = 100$  to deduce that  $4.5 + 5.5 = 10$ . The plan includes ICT to support the children's learning. The programme described in the case study is available on the companion website which accompanies the book. You may wish to explore the 'Number Boards' program on the companion website before reading the lesson plan. I used the number boards programme as it allows me to differentiate the activity to provide appropriate challenge and later gives the pupils control over their learning. Following the plan is an evaluation of the lesson which explores how successful the plan was in supporting the children to develop their knowledge, skills and understanding.

**Topic: Numbers totaling 10 or 100**

**Age Group: Lower Primary**

Objectives:	
<ul style="list-style-type: none"><li>• Use knowledge of place value and addition and subtraction of two-digit numbers to derive sums and differences, doubles and halves of decimals</li><li>• Explore properties of numbers and propose a general statement involving numbers. Identify examples for which the statement is true or false</li></ul>	
Key vocabulary: Units boundary, tenths boundary, addition, plus, pattern	Context: This is the first lesson in a series of five. This lesson supports children in finding pairs and triples of numbers that total 10 or 100. Future lessons use this understanding to carry out calculations arising from word problems. This lesson should support the children in devising mental strategies so that they can effectively carry out the calculation
Resources: 0–9 digit cards 6 × 4 grid	Starter activity: I will use the interactive whiteboard and the program 'Number Boards'. This provides a 6 × 4 grid of pairs of numbers which add to 10. The first run-through uses whole numbers. I will ask the children to work in mixed ability pairs and give them 1 minute to find as many pairs as possible which add to 10. They will record this on mini whiteboards. After a minute I will ask each pair to come up to the board and select a pair of numbers to check if they are right. I will repeat the activity using numbers to 1 decimal place  Finally I will use the two versions of the program again – this time one of the children will come up and select a number and I will then pick someone to tell them what the 'complement to 10' is.

Main activity	Teacher	Pupil activity
Group activity: Children operating above expected levels	The children will work in pairs. Each member of the pair creates a 'pairs' and 'triples' board so that it contains sets of numbers that add to 10. This should be decimals. They will then give them to a partner who will shade in the pairs	Pupils will list pairs and triples of numbers and decide how to make the board 'challenging'. The TA who is working with this group will ask the children to explain their thinking and to describe the patterns they notice when they are finding pairs and triples of numbers
Group activity: Children operating at expected levels	The children will work in pairs. Each member of the pair creates a 'pairs' board so that it contains 12 pairs of numbers that add to 10. This should include some that are decimals. They will then give them to a partner who will shade in the pairs on the number grid	Pupils will list pairs and triples of numbers and decide how to make the board 'challenging'. I will work with this group and will ask the children to explain their thinking and to describe the patterns they notice when they are finding pairs and triples of numbers
Group activity: Children operating below expected levels	This group will continue to use the program on the laptops. I will use the program which asks the children to find pairs of numbers that sum to 100	The children will record the pairs of numbers that they find sum to 100. They will organise this list so that they can report back on any patterns they have found
<p>Plenary: The group who were summing to 100 will report back on the patterns that they have found. I will ask the other two groups if these patterns are reflected in the patterns that they have found. Hopefully they will notice, for example, <math>45 + 55 = 100</math> and <math>4.5 + 5.5 = 10</math>. We will then revisit the activity from the starter. This time we will only use the decimal grid. As a child finds a pair they will describe to the group the mental process they are using</p>		