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# Introduction

This series of six photocopiable books provides additional challenges for more able children. The materials enable you to meet the needs of able mathematicians without developing completely separate topics.

**Book 1 will provide challenges for children in Years 1–3.**

## **You can use this book to:**

- **provide alternative and more demanding tasks for more able children during the daily maths lesson;**
- **provide more challenging homework tasks for the more able mathematicians in your class;**
- **broaden the range of mathematical experience for a range of children.**

Many of the tasks in this book are of an investigative or puzzle-solving variety. In addition to mathematical knowledge, some logical thinking will often be required. The children should enjoy the level of challenge the activities provide, and also the opportunity to choose their own ways of working. This is fundamental to development in mathematics, and you should therefore allow children to decide what aids they will use to help them solve the problems. More able children are often comfortable with abstract tasks, but most of them will at some stage want to use practical apparatus, and this should be allowed.

## **The activity sheets**

Photocopiable activity sheets for the children to work on are provided for the lessons and can be used to support group work. It is assumed that all the children will take part in the whole-class introduction to the lesson before tackling the task from this book.

The teacher notes will guide you in introducing the tasks to the children and in effective ways of working, as well as providing the solutions. These notes will help you to support children appropriately as they work.

# Counting and properties of numbers

## Learning objectives

- ◆ Count up and back in ones from different small numbers.
- ◆ Consider the steps between different numbers.

## Resources

'Up the ladder'

## Teacher's notes

Children complete each number ladder by putting in the numbers provided.

Cross out each number in its square as it is entered on the ladder.

Start with A. The numbers are found by counting back from nine.  
**These are 8, 7, 6 and 5.**

In B, count back from nine for the first two numbers.  
**These are 8 and 7.**

Then count up from nine for the other two numbers.  
**These are 10 and 11.**

Children are left with the following numbers:

**10 13 11 9 12**

These five numbers have to be put in order and entered into ladder C as  
**9, 10, 11, 12, 13.**

The smallest number is at the bottom.

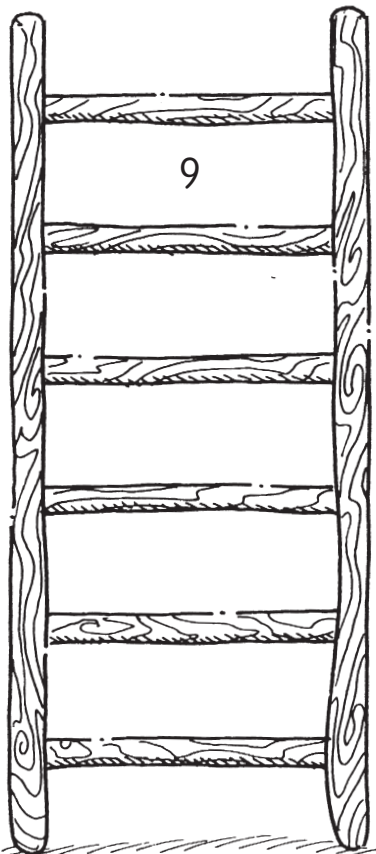
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# Up the ladder

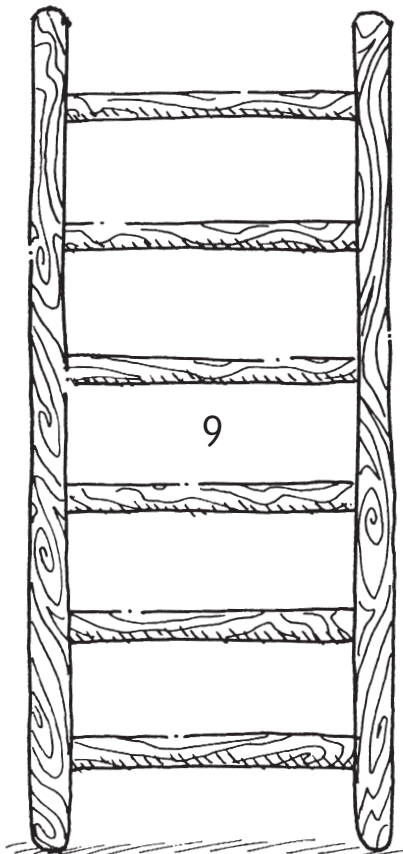
- Count up in ones from the bottom rung. Do this for ladder A, B and C.

A



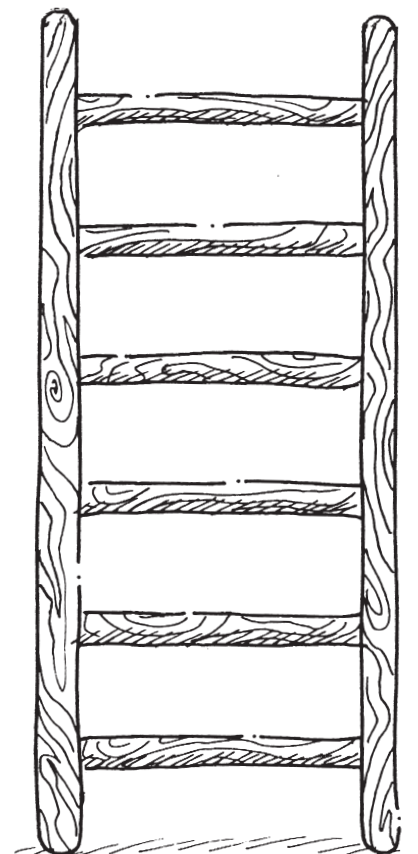
start

B



start

C



start

- Use all these numbers to fill in the spaces.

5	10	13	8	11	7	11
9	6	12	10	7	8	

# Understanding addition and subtraction

## Learning objectives

- ◆ Develop the concept of addition by combining two quantities.
- ◆ Use related vocabulary.

## Resources

'How many shapes?'

## Teacher's notes

In the first part children have to count the squares and circles separately.

There are **six squares** and **four circles**. The **total number of shapes is ten**.

In the next part children need to count the number of shapes in the basket. There are five.

This means that three more squares must be added to make the new total of eight.

There are now **five squares** and **three circles** in the basket.

In the final part there are six squares and two circles in the basket. Four more circles need to be added to make the numbers the same.

There are now **twelve shapes** in the basket.

Children could be challenged to write addition sentences for the different problems.

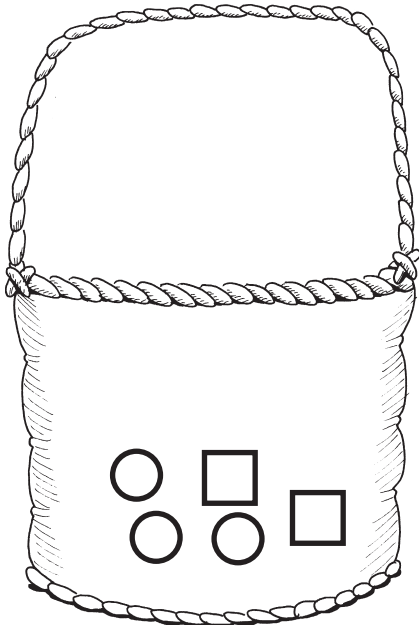
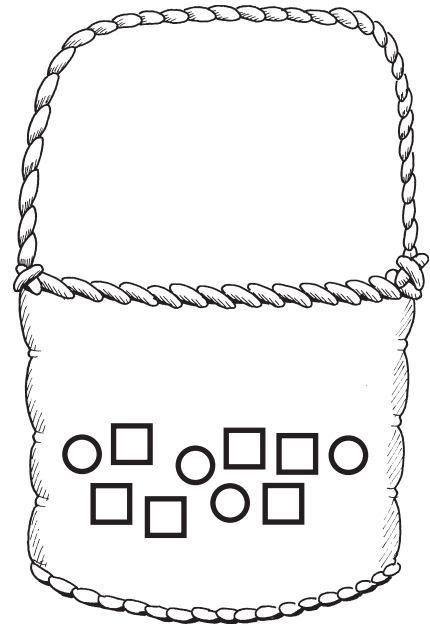
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# How many shapes?

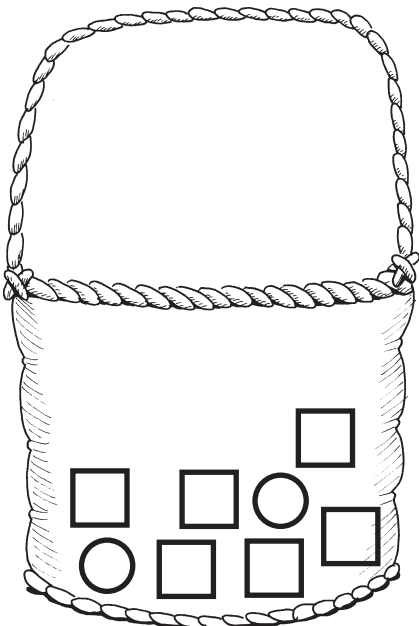
Count the shapes in the basket.

- How many squares? \_\_\_\_\_
- How many circles? \_\_\_\_\_
- How many shapes in the basket? \_\_\_\_\_



Add more squares to make a total of eight shapes in the basket.

- How many squares? \_\_\_\_\_
- How many circles? \_\_\_\_\_



Add more circles to make the numbers of each shape the same.

- How many shapes are there now?

\_\_\_\_\_