How to Sparkle at

Beginning Multiplication and Division

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Contents

Introduction

This book contains an abundance of stimulating activity sheets and games that will enable children to develop a thorough understanding of early multiplication and division. Various aspects of multiplication and division are covered, these being outlined with their corresponding pages as indicated.

Repeated addition   Pages 6, 13, 19, 26 and 31 introduce multiplication as the addition of equal groups of objects.

Counting and grouping   Pages 7, 8, 14, 20, 27, 28 and 32 give children experience of working with equivalent sets and partitioning sets using 2s, 3s, 4s, 5s and 10s.

Multiples   Pages 9, 15, 21, 22, 25, 33 and 36 explore patterns of multiples and the relationship between them. For example, doubling multiples of 2 produces multiples of 4; halving multiples of 10 produces multiples of 5.

Sharing   Pages 10, 11, 16, 17, 23, 29 and 34 require children to share out equally between a given number of subsets.

Repeated subtraction   Pages 12, 18, 24, 30 and 35 require children to work out how many subsets there will be if the number in each subset is known.

Multiplication and division facts   Pages 37 to 48 provide opportunities for children to reinforce and consolidate their understanding of the operations of multiplication and division.

Links to the National Curriculum

Close reference has been made to the National Curriculum in the writing of this book. The activities relate to the following programmes of study for Key Stage 1:

Pupils should be given opportunities to:

Using and applying mathematics
2a   select and use the appropriate mathematics;
2b   select and use mathematical equipment and materials;
3d   use a variety of forms of mathematical presentation.

Number
3b   explore and record patterns of multiples, *eg 3, 6, 9, 12,* explaining their patterns and using them to make predictions; progress to exploring further patterns involving multiplication and division, including those within a hundred-square of multiplication facts;
3b   learn multiplication and division facts relating to the 2s, 5s and 10s and use these to learn other facts, *eg double multiples of 2 to produce multiples of 4*, and to develop mental methods for finding new results;
4b   understand the operations of multiplication, and division as sharing and repeated subtraction, and use them to solve problems with whole numbers.

Successful linking of the activities to the programme of study depends to some extent on the way they are presented to the children and subsequent adult input. The page entitled 'How to use this book' explores this in further detail.

How to use this book

The activity sheets in this book form an indispensable bank of ideas that can be used to supplement any core mathematics scheme. Although there is built-in progression, it is not essential that a child should complete every page or that the pages should be used in a certain order. Rather, the book is intended to be a 'dip-in' resource that you can use to give children support, practice or consolidation as and when you feel it is necessary.

Use of terminology 'multiplied by' or 'times'

As far as possible, use of this terminology has been restricted because some schemes favour 'x' to be read as 'multiplied by' whereas others favour it to be read as 'times'. For example, 3 x 5 read as '3 multiplied by 5' would be represented pictorially by 5 sets of 3 objects or 3 + 3 + 3 + 3 + 3. However, 3 x 5 read as '3 times 5' would be represented pictorially by 3 sets of 5 objects or 5 + 5 + 5. The format of the book is such that 'x' has only been used where there is no pictorial representation. Therefore, either kind of terminology can be used.

Use of worksheets

The worksheets should always be preceded by practical work using real objects. For example:

Page 35   To introduce the idea of 'repeated subtraction'

✳   In a group session, ask 4 children to 'act out' the characters on the page and set tasks for the audience. You could give a child in the audience 12 marbles and say, 'Which of these actors can have 4 marbles each?'

✳   Gather together some yoghurt pots and a selection of counting objects. Arrange the children in groups and set them assorted tasks. For example, give them 4 marbles, 8 beads, 12 conkers, 16 pine cones and 20 cubes. Taking each type of object in turn, ask them to work out how many of the yoghurt pots can have 4 objects each.

Page 34   To introduce the idea of 'sharing equally'

✳   In a group session, ask 4 children to be actors again. Set tasks for the audience such as 'Share these 8 conkers equally amongst the 4 actors'.

✳   As for page 35, use counting objects but this time, only 4 yoghurt pots. Ask the children to share 4, 8, 12, 16 and 20 objects amongst the yoghurt pots.

You should then read through the instructions on the page and show the children examples of the required activity. When involved in the task, some children will benefit from further practical experience of moving objects into different groupings. It is also important to encourage them to use specific language associated with multiplication and division such as 'equal', 'equally', 'groups', 'lots', 'sets', 'share between' and 'share amongst'.
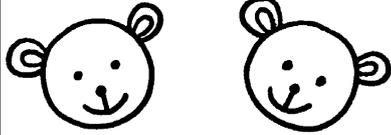
When completed and dated, the pages can be stored in the children's mathematical folders, creating a useful record of work covered.
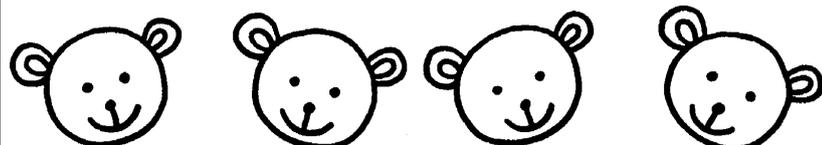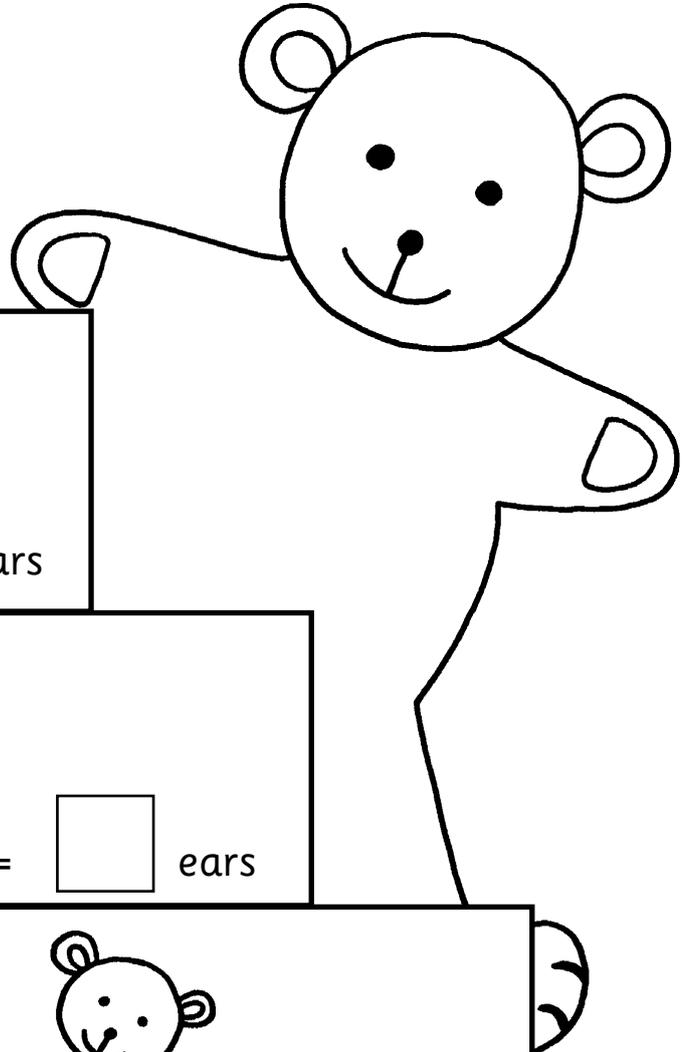
Teddy bears

Count the ears on the teddy bears.

☐ ears

☐ + ☐ = ☐ ears

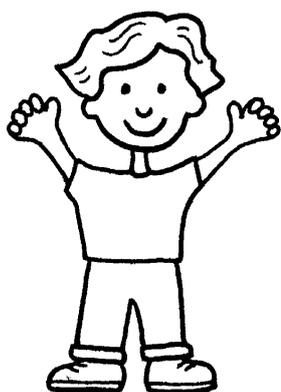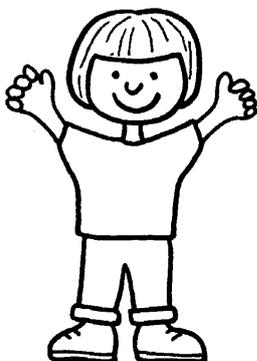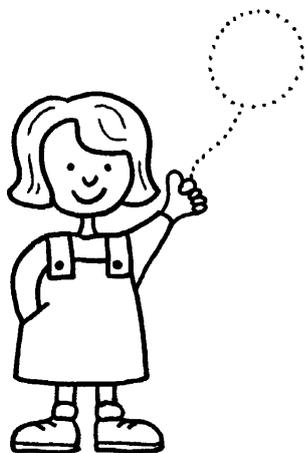☐ + ☐ + ☐ = ☐ ears

☐ + ☐ + ☐ + ☐ = ☐ ears

☐ + ☐ + ☐ + ☐ + ☐ = ☐ ears

Continue this repeated addition pattern for 6, 7, 8, 9 and 10 teddy bears.

Balloons

Draw 2 balloons for each child.

Write the number of balloons in the boxes.

1 child has ☐ balloons.

2 children have ☐ balloons.

3 children have ☐ balloons.

4 children have ☐ balloons.
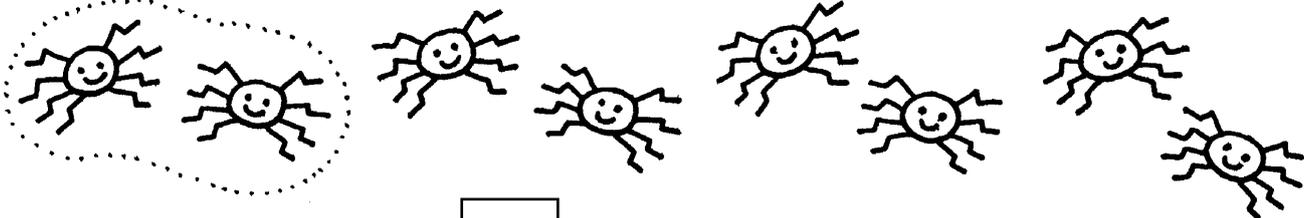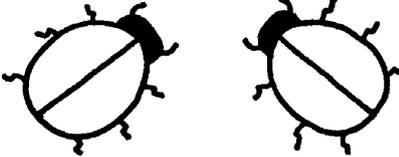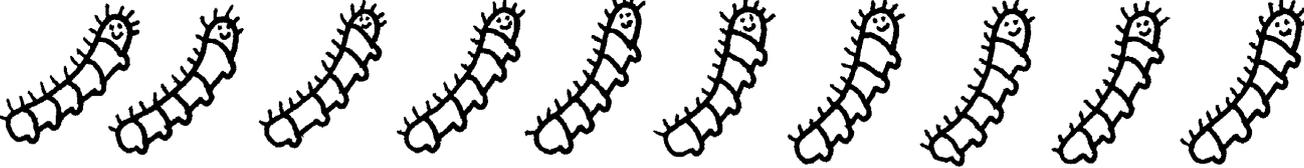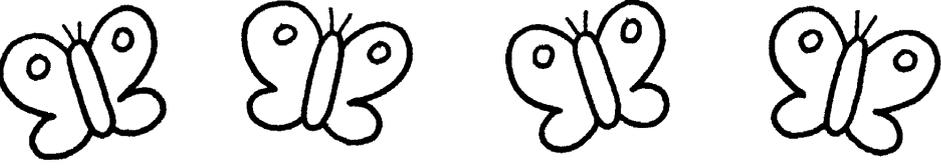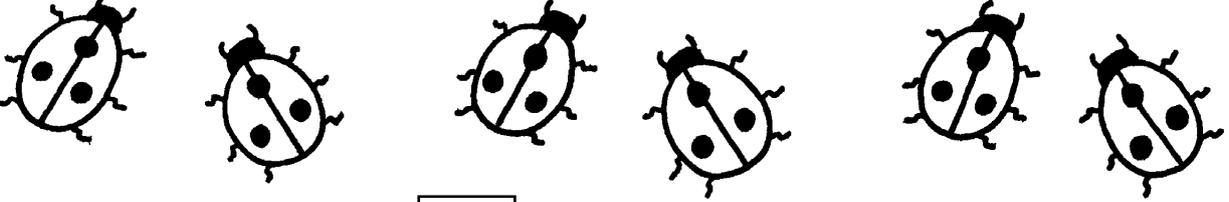
5 children have ☐ balloons.

Draw 5 more children, each with 2 balloons.

Write number sentences for 6, 7, 8, 9 and 10 children.

Mini-beasts

Draw a ring round each group of 2 mini-beasts.

☐ groups of 2

☐ group of 2

☐ groups of 2

☐ groups of 2

☐ groups of 2