

Division

Reception

Early Learning Goals

Solve problems involving halving and sharing.

Strategy

Sharing real objects into 2 groups

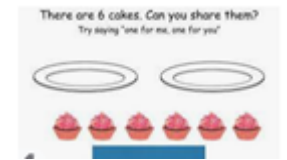
Cut a group in half

Examples/representations

Concrete



Pictorial



Abstract

4 shared by 2

Half of 4 is 2

Year 1

National Curriculum Objectives

Solve one step problems involving division, by calculating the answer by using concrete objects, pictorial representations and arrays with the support of the teacher.

Strategy

Examples/representations

Sharing

Concrete



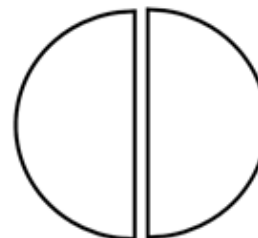
Pictorial



Abstract

$$6 \div 2 = 3$$

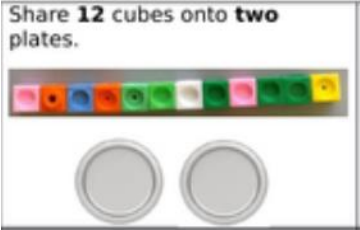
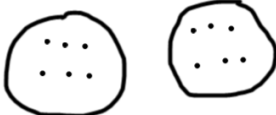
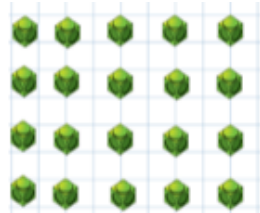
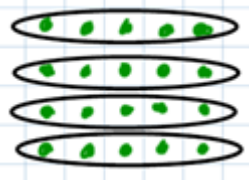
Fractions



$$= 1/2$$

National Curriculum Objectives

Solve problems involving division, using materials, arrays, repeated addition and division facts.

| Strategy | Examples/representations | | |
|-----------------------------|--|---|--|
| Sharing (into equal groups) | <p>Concrete</p> <p>Share 12 cubes onto two plates.</p>  | <p>Pictorial</p>  | <p>Abstract</p> $12 \div 2 = 6$ |
| Grouping |  | <p>Pictorial</p>  | $20 \div 5 = 4$ |

Year 3

National Curriculum Objectives

Divide 2 digits by 1 digit, using the multiplication tables that they know, progressing to formal written methods.

Strategy

Short division - formal written method (base ten and place value counters)

Examples/representations

Concrete

The concrete representation shows two methods. The first uses place value counters: a grid with 'Tens' and 'Ones' columns. 52 is represented by 5 tens rods and 2 ones units. These are divided into 4 groups, resulting in 1 ten rod and 2 ones units in each group, which is 12. The second method uses base ten blocks: 52 is represented by 5 tens blocks and 2 ones blocks. These are divided into 4 groups, resulting in 1 ten block and 2 ones blocks in each group, which is 12.

Pictorial

The pictorial representation shows a tree diagram for 52 divided by 4. 52 is split into 40 and 12. 40 divided by 4 is 10, and 12 divided by 4 is 3. The final result is 10 + 3 = 13. Below this is a place value chart for 52 divided by 4, with a bracket over the 52 and four question marks in the boxes below.

Abstract

The abstract representation shows the formal written method for 52 divided by 4. The equation $52 \div 4 = 13$ is shown in a rounded box. Below it is a formal written method: a grid with 4 on the left, 52 in the middle, and 13 on the right. The grid is divided into four columns, with 13 written above the 52.

Year 4

National Curriculum Objectives

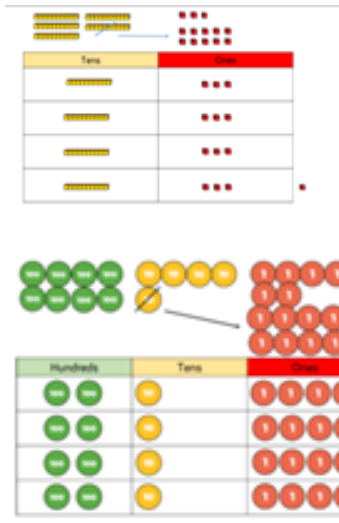
Divide 2 digits by 1 digit and 3 digits by 1 digit becoming fluent with the formal written method of short division.

Strategy

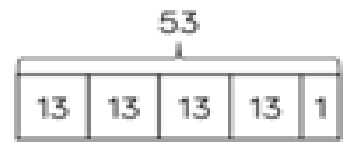
Short division - formal written method (base ten and place value counters)

Examples/representations

Concrete



Pictorial



Abstract

$$53 \div 4 = 13 \text{ r}1$$

$$4 \overline{) 53} \begin{array}{l} 13 \text{ r}1 \\ \underline{40} \\ 13 \\ \underline{12} \\ 1 \end{array}$$

Year 5

National Curriculum Objectives

Divide numbers up to 4 digits by a 1-digit number using the formal written method of short division.

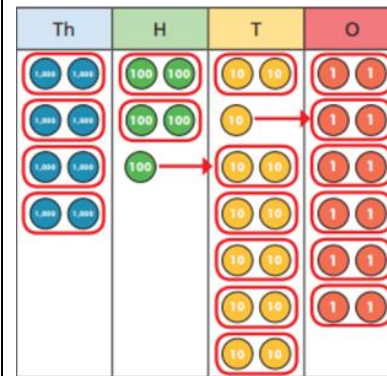
Interpret remainders appropriately for the context.

Strategy

Short division- formal written method

Examples/representations

Concrete



Pictorial

Abstract



Year 6

National Curriculum Objectives

Divide numbers up to 4 digits by a 2 digit number using the formal written method of short division where appropriate.

Divide up to 4 digits by a 2 digits whole number using the formal written method of long division.

Interpret remainders according to the context.

Strategy

Short division- formal written method

Long division - formal written method

Examples/representations

Concrete

Pictorial

Abstract

98 ÷ 7 becomes

$$\begin{array}{r} 14 \\ 7 \overline{) 98} \\ \underline{7} \\ 28 \\ \underline{21} \\ 7 \end{array}$$

Answer: 14

432 ÷ 5 becomes

$$\begin{array}{r} 86 \text{ r}2 \\ 5 \overline{) 432} \\ \underline{40} \\ 32 \\ \underline{30} \\ 2 \end{array}$$

Answer: 86 remainder 2

496 ÷ 11 becomes

$$\begin{array}{r} 45 \text{ r}1 \\ 11 \overline{) 496} \\ \underline{44} \\ 56 \\ \underline{55} \\ 1 \end{array}$$

Answer: 45 $\frac{1}{11}$

432 ÷ 15 becomes

$$\begin{array}{r} 28 \text{ r}12 \\ 15 \overline{) 432} \\ \underline{30} \\ 132 \\ \underline{150} \\ 12 \end{array}$$

Answer: 28 remainder 12

432 ÷ 15 becomes

$$\begin{array}{r} 28 \\ 15 \overline{) 432} \\ \underline{30} \\ 132 \\ \underline{150} \\ 12 \end{array}$$

$$\frac{12}{15} = \frac{4}{5}$$

Answer: 28 $\frac{4}{5}$

432 ÷ 15 becomes

$$\begin{array}{r} 28 \cdot 8 \\ 15 \overline{) 432 \cdot 0} \\ \underline{30} \downarrow \\ 132 \\ \underline{150} \downarrow \\ 120 \\ \underline{150} \\ 0 \end{array}$$

Answer: 28.8

