

Strategies for the Written Method of Calculation for Division

(Strategies indicate end of year expectations)

Year One

Statutory Guidance: solve one-step problems involving division, by calculation the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

Non-Statutory Guidance: make connections between arrays, number patterns and counting in twos, fives and tens.


Division Strategy A

Sharing groups of objects

Practical problem solving activities

$12 \div 4 =$

Twelve bears go for a picnic. Four bears can sit at each table. How many tables do they need?



$12 \div 4 = 3$


Division Strategy B

Grouping

Recording using symbols or pictures

$6 \div 2 =$

There are 6 sweets, how many people can have 2 sweets each?




$6 \div 2 = 3$

Division Strategy C

Grouping

Making connections between arrays, number patterns and counting in 2s, 5s and 10s



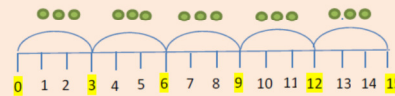
$10 \div 2 = 5$

$10 \div 5 = 2$

Division Strategy D

Jottings: grouping using a number line

$15 \div 3 =$



$15 \div 3 = 5$

Year Two

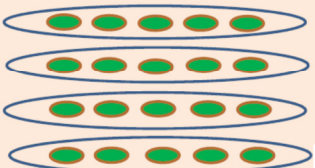
Statutory Guidance: Solve problems involving division, using materials, arrays, repeated addition, mental methods, and division facts, including problems in contexts.

Non-Statutory Guidance: Connect unit fractions to equal sharing and grouping, to numbers when they can be calculated, and to measures, finding fractions of lengths, quantities, sets of objects or shapes.

Division Strategy E

Using arrays for division facts 2, 5 and 10

$20 \div 5 =$



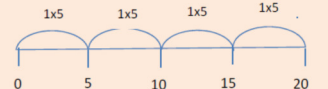
$20 \div 5 = 4$

Division Strategy F

Counting up on a number line

Using division facts: 2, 5 and 10

$20 \div 5 =$



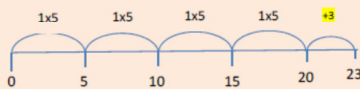
$20 \div 5 = 4$

Division Strategy G

Counting up on a number line with a remainder

Using division facts: 2, 5 and 10

$23 \div 5 =$



So, there are 4 lots of 5 in 20 with 3 left over

$23 \div 5 = 4r3$

Year Three

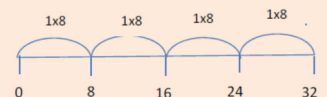
Statutory Guidance: Write and calculate mathematical statements for division using the multiplication tables that they know, progressing to formal written methods. Division facts include: 2, 3, 4, 5, 8 and 10.

Division Strategy H

Counting up on a number line

Using division facts: 2,3,4,5,8 and 10

$32 \div 8 =$



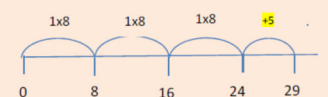
$32 \div 8 = 4$

Division Strategy I

Counting up on a number line with a remainder

Using division facts: 2,3,4,5,8 and 10

$29 \div 8 =$



$29 \div 8 = 3r5$

Year Four

Non-Statutory Guidance: practise to become fluent in the formal written method of short division with exact answers. Division facts up to 12×12 .

Division Strategy J

Counting up on a number line using one '10 chunks of...' then '...chunks of...'

$$98 \div 7 =$$

So, chunks of 7 in 98: $10 + 4 = 14$

$$98 \div 7 = 14$$

Division Strategy K

Counting up on a number line using more than one '10 chunks of...' then '...chunks of...'

$$130 \div 4 =$$

So, chunks of 4 in 130: $10 + 10 + 10 + 2 = 32$ (remainder 2)

$$130 \div 4 = 32r2$$

Division Strategy L

Short division with exact answers (Bus Stop method)

$$98 \div 7 =$$

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

There is **1** lot of 10×7 in 90 with **2** tens left over
There are **4** lots of 7 in 28

$$98 \div 7 = 14$$

Year Five

Statutory Guidance: divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. Divide whole numbers and those involving decimals by 10, 100 and 1000.

Non-Statutory Guidance: interpret non integer answers to division by expressing results in different ways.

Division Strategy M

Short division with remainders (Bus Stop method: up to 3 digits)

$$246 \div 7 =$$

$$\begin{array}{r} 35r1 \\ 7 \overline{)246} \end{array}$$

There are **3** lots of 10×7 in 240 with **3** tens left over
There are **5** lots of 7 in 36 with **1** left over

$$246 \div 7 = 35r1$$

Division Strategy N

Short division with remainders (Bus Stop method: up to 4 digits)

$$8,354 \div 8 =$$

$$\begin{array}{r} 1044r2 \\ 8 \overline{)8354} \end{array}$$

There is **1** lot of $1,000 \times 8$ in 8,000
There are **0** lots of 100×8 in 300
There are **4** lots of 10×8 in 350 with **3** lots of 10 left over
There are **4** lots of 8 in 34 with **2** left over

$$8,354 \div 8 = 1,044r2$$

Division Strategy O

Interpret non integer answers to division by expressing results in different ways

$$98 \div 4 =$$

$$\frac{98}{4} = \frac{24r2}{4 \overline{)98}} = 24\frac{1}{2} = \frac{24.5}{4 \overline{)98.0}}$$

$$98 \div 4 = \frac{98}{4} \text{ or } 24r2 \text{ or } 24\frac{1}{2} \text{ or } 24.5$$

Year Six

Statutory Guidance: divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. Long division and short division are statutory requirements.

Division Strategy P

Short division interpreting remainders according to the context. (Bus Stop method: up to 4 digits)

$$628 \div 12 =$$

$$\begin{array}{r} 52r4 \\ 12 \overline{)628} \end{array}$$

So, $628 \div 12 = 52\frac{1}{3}$

Division Strategy Q

Long Division (Formal Written Method)

$$432 \div 15 =$$

$$\begin{array}{r} 28.8 \\ 15 \overline{)432.0} \\ \underline{30} \\ 132 \\ \underline{120} \\ 120 \\ \underline{120} \\ 0 \end{array}$$

So, $432 \div 15 = 28.8$

