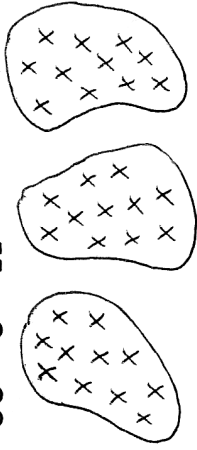


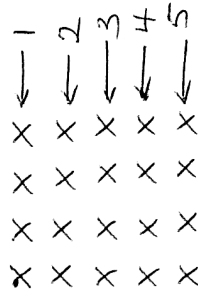
Division Using 'Sharing':

$$33 \div 3 = 11$$



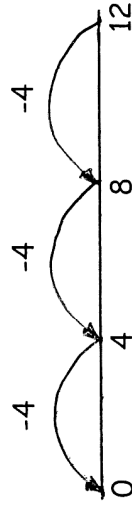
Division Using 'Grouping':

$$20 \div 4 = 5$$



Division Using a Number Line

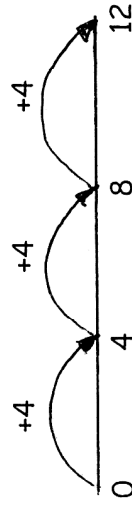
- Repeated subtraction e.g. $12 \div 4$



4 has been taken away 3 times so

$$12 \div 4 = 3$$

- Repeated addition e.g. $12 \div 4$



4 has been added 3 times so

$$12 \div 4 = 3$$

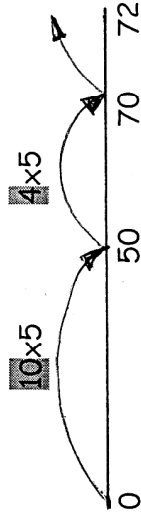
These methods can also be used

for larger numbers and when

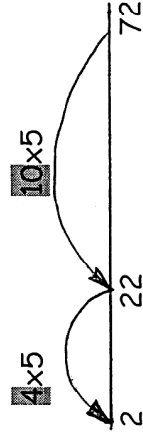
there is a remainder;

e.g. $72 \div 5 = 14$ remainder 2

- Repeated addition



- Repeated subtraction



Chunking

e.g. $72 \div 5 = 14$ remainder 2

$$\begin{array}{r} 72 \\ - 50 \text{ (10 x 5)} \\ \hline 22 \\ - 20 \text{ (4 x 5)} \\ \hline 2 \end{array}$$

Short Method

(How many 5s are there in 72?)

$$\begin{array}{r} 14 \text{ r } 2 \\ 5 \overline{) 72} \end{array}$$



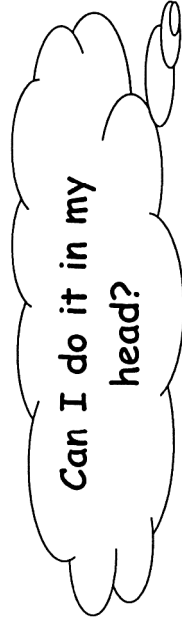
A Parent's Guide to Multiplication and Division

At Harrison Primary School, children are encouraged to:

- use and develop a range of strategies.
- show their understanding by explaining what they are doing.
- use facts they know by heart to figure out new facts.

THE SUCCESS TO THESE METHODS WORKING IS CONFIDENCE IN KNOWLEDGE OF NUMBER FACTS.

The first question your child should ask themselves, when adding or subtracting is:



They need to understand

multiplication as:

- Repeated addition e.g. $3 \times 5 = 5+5+5$
- Scaling (times as big, high etc)
- An array ● ● ● $2 \times 3 = 6$



$$3 \times 2 = 6$$

They need to understand division as:

- Grouping e.g. $16 \div 4 =$ how many groups of 4 in 16?
- Sharing e.g. $16 \div 4 =$ share 16 between 4

They should know the following times tables by heart:

- KeyStage 1: 2, 5 and 10 times tables (3 and 4 if possible!)
- KeyStage 2: **All** times tables up to 12×12

They should know that division is the inverse of multiplication:
 $4 \times 2 = 8$ so $8 \div 4 = 2$ $8 \div 2 = 4$

They should know that the order in which numbers are multiplied makes no difference:

$$3 \times 4 = 12 \quad 4 \times 3 = 12$$

Children are encouraged to use jottings to record their thinking.

They are taught:

- To multiply and divide by 10 and 100.
- To use doubling and halving to work out new facts.
 e.g. double 8×4 to find 16×4
 halve 36×100 to find 36×50
- To partition numbers in order to multiply,
 e.g. $36 \times 4 = 30 \times 4 + 6 \times 4$
 $= 120 + 24$
 $= 144$

Written Methods

These are built on the children's understanding of mental methods. Children should approximate their answers first.

Grid Method of Multiplication

e.g. 18×28 is approximately

$$20 \times 30 = 600$$

	10	8
20	200	160
8	80	64

$$280 + 224 = 504$$

Standard Written Method

e.g. 346×9

(Approximately $346 \times 10 = 3460$)

$$\begin{array}{r} 346 \\ \times \quad 9 \\ \hline 2700 \quad (300 \times 9) \\ 360 \quad (40 \times 9) \\ \underline{54} \quad (6 \times 9) \\ 3114 \end{array}$$

Leading to:

$$\begin{array}{r} 346 \\ \times \quad 9 \\ \hline 3114 \\ 45 \end{array}$$