MATHEMATICS Unit 3: Calculating - division	Year Group: 7 set 4-5

Key Vocabulary

Divide (Division)	To divide is to split into equal parts or groups
Divisible 12 is divisible by 3, 12÷3 = 4 12 is not divisible by 5, 12÷5 is not a whole number	A number is divisible by another number if it divides exactly without a remainder
Factor Factors of 8: 1, 2, 4, 8	Divides exactly into the given number
Short division (Long division)	An efficient method for dividing a large number by another number
Remainder	A part, number or quantity that is leftover after a division
Operation	There are four main mathematical operations
	Addition + Subtraction – Multiplication x Division ÷
Divisor 12÷3 = 4 3 is the divisor here	A number by which another number is to be divided
Dividend 12÷3 = 4 12 is the dividend here	A number to be divided by another number

Key facts / Diagrams

Short division giving the answer with a remainder

$$0\ 6\ 8\ 2 \text{ remainder 3}$$
$$8\ \overline{|\ 5\ ^54\ ^65\ ^19}$$

There are 3 left over and no 8s go into 3.

The answer is 682 r 3

Short division giving the answer with a fraction

$$0\ 6\ 8\ 2$$
$$8\ \overline{|\ 5\ ^54\ ^65\ ^19}$$

remainder 3, which means 3/8 is left over

The remainder can be turned into a fraction using what you are diving by, in this case 8.

The answer is $682\frac{3}{8}$

Short division giving the answer with a decimal

$$0\ 6\ 8\ 2\ .\ 3\ 7\ 5$$
$$8\ \overline{|\ 5\ ^54\ ^65\ ^19\ .\ ^30\ ^60\ ^40}$$

Add the decimal points (they must line up) and several zeroes. Continue the division until you cannot go any further or you have the required degree of accuracy.

The answer is 682.375

We can round the answer 1dp, which is 682.4

Common misconceptions

- Some pupils may write statements such as 12 ÷ 132 = 11

- Formal written methods of addition, subtraction and multiplication work from right to left. Formal division works from left to right.

- When using short division many pupils will at first struggle to deal correctly with any division where the divisor is greater than the first digit of the dividend; for example:

$$0\quad 10\quad 7\quad \text{r 5}$$
$$8\ \overline{|\ 3\quad ^86\quad ^61}$$

3 ÷ 8 = 0 remainder 3, and so the 3 should be moved across. Instead, the 8 has been 'moved across' and therefore everything that follows has been correctly carried out based on an early misunderstanding.

Worked examples

1. £378 is shared equally between 7 friends, how much does each person get?

$$0\ 5\ 4$$
$$7\ \overline{|\ 3\ ^37\ ^28}$$

$378 ÷ 7 = $ **£54**

2. There are 248 students in year 7. In assembly each row has 9 chairs in it. What is the smallest number of rows needed to seat all students for assembly?

$$0\ 2\ 7 \text{ remainder 5}$$
$$9\ \overline{|\ 2\ ^24\ ^68}$$

27 remainder 5, this means **28** rows are needed to seat all students for assembly.