

Y9 Unit 3 Overview - Number: Calculations, approximations and patterns

Test window: 16th March 2020 - 27th March 2020

Target grade for tests:

You will learn about:

- Multiplication and division
- Rounding numbers
- Estimating calculations
- Simple sequences (powers of ten)

You will be able to:

- Recall multiplication and division facts for times tables up to 12×12 .
- Recognise and use factor pairs in mental calculations.
- Multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.
- Multiply two-digit and three-digit numbers by a one-digit number using a written layout.
- Solve problems involving multiplying and adding.
- Round any number to the nearest 10, 100 or 1000.
- Round decimals with one decimal place to the nearest whole number.
- Estimate and use inverse operations to check answers to a calculation.
- Solve number and practical problems that involve all of the above and with increasingly large positive numbers.
- Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- Round decimals with two decimal places to the nearest whole number and to one decimal place
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000



Lesson Overview

CALCULATING: MULTIPLICATION AND DIVISION

- Use knowledge of multiplication tables when multiplying and dividing mentally
- Multiply a whole number or decimal by 10, 100 or 1000
- Divide a whole number or decimal by 10, 100 or 1000
- Multiply numbers up to 4-digits by a one-digit number using short multiplication
- Multiply three-digit and four-digit numbers by a two-digit number using long multiplication
- Divide a three-digit number by a one-digit number using short division with and without a remainder
- Divide a four-digit number by a one-digit number using short division with and without a remainder
- Interpret a remainder appropriately for the context when carrying out division
- Identify when knowledge of factors (multiples, squares, cubes) can be used to help solve a problem

CHECKING, APPROXIMATING AND ESTIMATING

- Approximate any number by rounding to the nearest 10 000 or 100 000
- Approximate any number with two decimal place by rounding to the nearest whole number or rounding to one decimal place
- Understand estimating as the process of finding a rough value of an answer or calculation
- Estimate calculations with up to four digits

Key Words

Refer to

<http://studymaths.co.uk/glossary.php>
for definitions of the key words

Multiply, Multiplication, Times, Product
Commutative

Divide, Division

Divisible

Divisor, Dividend, Quotient, Remainder

Factor

Short multiplication

Long multiplication

Short division

Operation

Estimate

Notation

Remainders are often abbreviated to 'r' or
'rem'

Approximate (noun and verb)

Round

Decimal place

Check

Solution

Answer

Estimate (noun and verb)

Accurate

Accuracy

Notation

The approximately equal symbol (\approx)

<p>PATTERNS AND SEQUENCES</p> <ul style="list-style-type: none"> Count forwards in tens, hundreds and thousands from any positive number up to 1 000 000 Count backwards in tens, hundreds and thousands from any positive number up to 1 000 000 					<p>Forwards Backwards Ascending Descending Pattern Sequence</p>	
<p>Suggested reading or support/ challenge available</p>					<p>Cross curricular</p> <p><i>SMSC:</i></p> <p>1.1 Exploring, understanding and respecting cultural diversity e.g. exploration of different methods of multiplication (Chinese, Russian). 3.1 Developing personal qualities and using social skills (regular paired/ group work communication). 3.2 Participating, cooperating and resolving conflicts (paired/group activities). 4.2 Experiencing fascination, awe and wonder of mathematics. 4.4 Using imagination and creativity in learning.</p> <p><i>Literacy:</i> Verbal communication of understanding using key words in the correct context. Development of written communication of methods and strategies to problem solve.</p> <p><i>NAC:</i> Science – Multiply and divide whole numbers by 10 and 100. Short multiplication and division of whole numbers. Round numbers to the nearest 10, 100 or 1000. Multiply and divide decimals by 10, 100, 1000. Estimate and check answers using approximations. Technology- Multiply and divide whole numbers by 10 and 100. Short multiplication and division of whole numbers. RE – Estimate and check answers using approximations. MFL – Short multiplication and division of whole numbers. PE - Round numbers to the nearest 10, 100 or 1000. Short multiplication and division of whole numbers.</p>	
Research	Note-making	Group work & discussion	Memorisation	Precision & accuracy	Independence	Reflection