

Year 8 Unit 1 Overview-Number skills:

Test window: 7th November 2019 - 18th November 2019

Target grade for tests:

You will learn about:

- Numbers and the number system.
- Calculating efficiently and problem solving.
- Checking answers by approximating calculations and estimating.



You will be able to:

- Identify and find factors, multiples, primes, HCF and LCM and use them to solve problems.
- Multiply, divide, add and subtract with integers and decimals.
- Round any whole number to a required degree of accuracy (to a specified number of decimal places or significant figures).
- Use estimation to check answers to calculations and determine an appropriate degree of accuracy (in the context of the problem).
- Communicate your methods verbally, using a range of mathematical vocabulary.
- Structure your methods showing clear steps of workings.
- Apply your skills to solve a variety of problems in real-life contexts.

<p>Lesson Overview</p> <p><u>NUMBERS AND THE NUMBER SYSTEM</u></p> <ul style="list-style-type: none">• Use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor and lowest common multiple.• Use positive integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5.• Recognise and use sequences of triangular, square and cube numbers, simple arithmetic progressions. <p><u>COUNTING AND COMPARING</u></p> <ul style="list-style-type: none">• Order positive and negative integers, decimals and fractions.• Use the symbols =, ≠, <, >, ≤, ≥ <p><u>CALCULATING</u></p> <ul style="list-style-type: none">• Understand and use place value (e.g. when working with very large or very small numbers, and when calculating with decimals).• Apply the four operations, including formal written methods, to integers and decimals (add, subtract, multiply and divide including interpreting the remainders)• Use conventional notation for priority of operations, including brackets.• Recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions). <p><u>CHECKING, APPROXIMATING AND ESTIMATING</u></p> <ul style="list-style-type: none">• Round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures).• Estimate answers; check calculations using approximation and estimation, including answers obtained using technology.• Recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions).	<p>Key Words</p> <p>Refer to http://studymaths.co.uk/glossary.php for definitions of the key words</p> <p>Lowest common multiple and LCM Highest common factor and HCF Power Square and cube root Triangular number, Square number, Cube number, Prime number Linear sequence Positive/ negative number Integer Numerator/Denominator Improper fraction (Top-heavy fraction) Mixed number Operation Inverse Long multiplication Short division /Long division Remainder Approximate (noun and verb) Estimate (noun and verb) Round Decimal place Check Solution Order of magnitude Accurate, Accuracy Significant figure Cancel Inverse Operation</p>
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Notation

The approximately equal symbol (\approx)
 Significant figure is abbreviated to 's.f.' or 'sig fig'
 The 'equals' sign: =
 The 'not equal' sign: \neq
 The inequality symbols: < (less than), > (greater than), \leq (less than or equal to), \geq (more than or equal to)
 Index notation: e.g. 5^3 is read as '5 to the power of 3' and means '3 lots of 5 multiplied together'
 Radical notation: e.g. $\sqrt{49}$ is generally read as 'the square root of 49' and means 'the positive square root of 49'; $\sqrt[3]{8}$ means 'the cube root of 8'

Suggested reading or support/ challenge available



Support is available from a Maths teacher in 'MORALE' in M1 daily from 1:30pm -1:45pm

www.mymaths.co.uk
 login: penryn
 password: octagon

www.hegartymaths.com
 Go to student login at the top... find your school, enter your details and then set up your password...

<https://vle.mathswatch.com/vle/>
 login: school username followed by @penryn-college
 password: Penryn2016

Use your revision guide
 Use the code in the front of your guide to access your free online revision

www.justmaths.co.uk/online
 login: PenrynStudent
 password: Penryn

Cross curricular

SMSC:

- 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.

Literacy: Verbal communication of understanding using key words in the correct context. Development of written communication of methods and strategies to problem solve.

NAC:

Science – Estimation. Mental and written calculations with whole numbers and decimals. Round whole numbers and decimals. Understand and use place value.

Technology - Mental and written calculations with whole numbers and decimals.

Creative Arts – Understand and use place value.

MFL – Mental and written calculations with whole numbers and decimals. Understand and use place value.

RE - Read and write numbers in figures and words. Estimation. Understand and use place value.

PE - Round whole numbers and decimals. Know the multiplication tables and associated division facts. Multiplication and division calculations. Understand and use place value.

Geography - Mental and written calculations with whole numbers and decimals. Know the multiplication tables and associated division facts.

History - Mental addition and subtraction.

English - Understand and use place value.

Research	
Note-making	
Group work & discussion	
Memorisation	
Precision & accuracy	
Independence	
Reflection	