

Subject: Maths **Year** 7 **Ability** Mixed

Half Term 2 / weeks	Half-term 2 (Week 9)	Half-term 2 (Weeks 10-11)	Half-term 2 (Week 12-13)	Half-term 2 (Week 14)	Half-term 2 (Week 15)
Topic	Understanding decimals	Rounding and estimation	Coordinates	Retention and Re-teach	Fractions
Topic overview	To perform basic arithmetic with calculations that include decimals	Develop the ability to round values to specific degrees of accuracy, and use this to sense check their answers when doing calculations	To understand what coordinates are, how to plot them, and how the relationship between them is used to describe graphs.	Focus on the process of reteach and retention, knitting together the learning in reaction to the assessments completed	An introduction to fraction notation and converting between fractions, decimals and percentages. Using fraction notation to help calculate quantities of amount.
Pupils will learn...					
Components	<ul style="list-style-type: none"> a) Students to be able to identify the value of digits in decimals and know to state the value as 9 tenths (or 0.9). Students to also be able to increase decrease the decimals in place value position. b) Students to be able use the correct symbols less than or greater than to order decimals. Students to be able use the correct language of what holds the greater value, not which is biggest c) Students to be able to add and subtract decimals by placing in correct place value columns and using column method. d) Students to be able to multiply decimals together. a) Students to be able to divide decimals. Start with a decimal by an integer and then build to decimal by decimal. 	<ul style="list-style-type: none"> a) Students to be able to round to whole numbers, tens, hundreds. b) Students to be able to round to a given number of decimal places. c) Students to be able to round to a given number of significant numbers. d) Students to be able to estimate by rounding values to 1.s.f. e) Student to be able to state maximum and minimum values from basic rounding and complete error intervals using greater than less than symbols. f) Students be able to perform calculations with error intervals greatest/least possible. 	<ul style="list-style-type: none"> a) Students be able to plot a coordinate on 4 quadrants. b) Students be able to find the midpoint of a line segment, using diagrams and the formula. c) Students be able to represent $x = a$ and $y = c$. d) Introduction to gradients Students be able to use diagrams and a set of axis. Show drawing a triangle and $m = (y_2 - y_1)/(x_2 - x_1)$. 	Staff complete a program of adaptive reteaching on specific topics based on the individual/class needs within their groups. Regular assessments are used to identify gaps in learning. Any gaps found are then addressed in lessons to help support learning and retention. Clear areas for improvement are monitored by individual staff and at a departmental level.	<ul style="list-style-type: none"> a) Students be able to understand what a fraction is and represent them numerically, and with diagrams b) Students be able to understand, represent, and use equivalent fraction Represent equivalent fractions on a number line and fraction wall. c) Students be able to simplify fractions and identify fractions in their simplest form d) Students be able to write one quantity as a fraction of another. e) Students be able to compare fractions with different denominators. f) Students be able to convert between and compare mixed numbers and improper fractions. g) Students be able to add and subtract fractions and mixed numbers h) Students be able to and divide fractions and mixed numbers i) Students be able to convert between fractions, percentages and decimals j) Students be able to convert recurring decimals into fractions. k) Students be able to attempt capture recapture questions to students and show them how to do this using equivalent fractions.

What pupils should already know (prior learning components)	Place value number system, including negative numbers. Base ten number system.	Students should be able to: <ul style="list-style-type: none"> Understand the basic concept of rounding and past the midway rounds up to the next number. Understand place value	The structure of a set of axes. Positive and negative numbers. How to plot in the first quadrant.	All the half term content will have been covered by this point. Staff will use departmental tracking documents to analyse the gaps in learning from the most recent assessments and all previous assessments. The ability to structure and breakdown a problem-solving question as exemplified in the TFI questions throughout the course.	Students should be able to give examples of fractions and may be able to recall key terminology (numerator and denominator), recall the formation of a fraction and understand it is a part of a whole.
Transferrable knowledge (skills)	This unit explores calculations with decimals and builds students confidence in working with calculations that include decimals. Links to decimals, fractions and percentage equivalence will be introduced later to develop pupils' fluency with converting between the different forms a value can take. This versatility will be a thread developed throughout the maths learning journey as pupils will need to be able to express surds, indices and FDP in other formats understanding equivalence throughout.	This unit develops the critical thinking skills required to check answers 'make sense'. Application for estimation, upper and lower limits, error intervals and tolerances play a large role in industry. Along with multiplication there are more marks for rounding to decimal places/significant figures than any other topic in maths due to it being a feature at the end of many questions.	This unit develops the understanding of what a coordinate is. This allows students to understand how to create and plot a coordinate using a table of values. Once this is grasped move to understanding the role of these in terms of $y=mx+C$. This then moves to finding the gradient from points and using this with $m = (y_2 - y_1)/(x_2 - x_1)$ to find gradient. A strong understanding of coordinates also links to vectors and transformations.	This activity should serve to highlight and address areas of weakness in teaching and learning or retention. This early intervention to understand specific key areas for improvement or development. This should help to build confidence and improve students' ability to answer these and directly sequential problems.	This unit supports students' ability to represent number in a variety of different way and their ability to use fraction notation to calculate amounts of larger quantities, including working in reverse to work out the total. This explores different ways of representing a problem developing our students' ability to interpret fraction questions. Students' skills in fraction will be develop further in the learning journey and applied in ratio contexts and well as KS4 when gradients are explored These fraction skills underpin almost all of subsequent mathematics.
Key vocabulary pupil will know and learn	Place value, hundreds, tens, ones, tenths, hundredths, decimal, negative, grid, bus stop, integer, zero pair, cancel, divide, multiply, column, addition, subtraction, power of 10	Round, decimal place, significant figure, error interval, limit of accuracy, bounds, estimate, truncate	coordinates, quadrants, Line segment, plot, draw, straight line, linear, Interpreting, gradient, Y-intercept, axes		Fraction, Numerator, denominator, unit, equivalent, express, quantity, multiply, divide, percentage, simplify, convert, order, mixed number, improper, proportion
Assessment activities	Weekly Sparx homework linked to the curriculum. End of unit reflection. Summative assessment 2	Weekly Sparx homework linked to the curriculum. End of unit reflection. Summative assessment 2	Weekly Sparx homework linked to the curriculum. End of unit reflection. Summative assessment 2	AFL and adaptive teaching will continue to support staff to assess the address areas.	Weekly Sparx homework linked to the curriculum. End of unit reflection. Summative assessment 3
Resources available	Sparx codes a) Q127 b) Q509 c) Q986 d) M803 a) M491	Sparx codes a) M111 M431 b) M431 c) M131 d) M878 e) M730 f) U587	Sparx codes a) M616 M230 b) M622 c) M797	Before any assessments are completed, revision and guidance materials are provided for students to assist in independent study.	Sparx codes a) b) M410 c) M671 d) M157 e) M335 f) M601 g) M835 h) M157 M110 i) M264 j) M922 k) U328
Notes		The ability to round (especially significant figures) is a key skill that is needed in many topics that are covered later in the curriculum. Many answers that use a calculator to find them e.g., trigonometry will use these skills. The ability to round		This is an important point in the curriculum plan that enables individual teachers to review the gaps in learning for the classes they teach. The half-termly assessments are used to track students' progress and enable teachers to react quickly to any gaps in knowledge and prepare students for the next assessment. The feedback and modelling	

		also helps student estimate answers to use logic and see if their answers make sense. An appreciation of the accuracy of an answer is important and the use of bounds shows this that should be shown to students in a context of possibly misleading information in real life.		of the exam answers enables students to pick up exam techniques and the ability to communicate effectively.	
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