

Barnsley Academy – Curriculum
Scheme of Work – 2023-24
Maths – YEAR 9

Half Term 1 – Week 1 (WC Monday 4 th September)				
		1	2	3
Lesson Focus	<i>Big Picture – success criteria.</i>	INSET / CLIMBING THE MOUNTAIN	INSET / CLIMBING THE MOUNTAIN	Introduction and expectations RECAP of adding and subtracting integers and decimals
Prerequisite Knowledge	<i>What knowledge are they building on (previous units/years)? Informs Do Now/Retrieval.</i>			- Addition and Subtraction – KPI 7.06 - Multiplication and division of integers – KPI 7.08 - Order of operations – KPI 7.02 - Unit of measurements – KPI 8.09
Core Knowledge	<i>Key terms and agreed definitions, any other key information essential to students, succeeding. In practical subjects this can include skills.</i>			Integer = Whole number
Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	<i>Name the steps that student need to take – agreed department approach.</i>			Use the column method for addition and subtraction, ensuring decimal places are correctly lined up Use of a number line for addition and subtraction involving negatives
Independent Practice	<i>The task and reference back to the Big Picture Slide</i>			1. Addition and subtraction of positive integers and decimals 2. Addition and subtraction of positive and negative integers and decimals 3. Addition and subtraction in context
Assessment (Informal/Formal)	<i>Circulation/live feedback/self-assessment/class assessment/whole class feedback (marking cycle)/quiz.</i>			Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment
Calculator Usage	<i>Use of calculator functions</i>			N/A
Resources	<i>(Hyperlink)</i>			
Specific SEN(D)/EAL support	<i>Overview for the lesson – can be repeated strategies</i>			Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed
Class considerations	<i>Specific set direction where applicable</i>	9X will miss their lessons on Monday and Tuesday due to INSET	9Y will miss their lesson on Tuesday due to INSET	Numeracy focus – Adding and subtracting positive integers

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Scheme of Work – 2023-24

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Half Term 1 – Week 2 (WC Monday 11 th September)				
		1	2	3
Lesson Focus	<i>Big Picture – success criteria.</i>	RECAP of multiplying and dividing integers and decimals	RECAP of money calculations Bank statements	RECAP of BIDMAS
Prerequisite Knowledge	<i>What knowledge are they building on (previous units/years)? Informs Do Now/Retrieval.</i>	- Addition and Subtraction – KPI 7.06 - Multiplication and division of integers – KPI 7.08 - Order of operations – KPI 7.02 - Unit of measurements – KPI 8.09	- Addition and Subtraction – KPI 7.06 - Multiplication and division of integers – KPI 7.08 - Order of operations – KPI 7.02 - Unit of measurements – KPI 8.09	- Addition and Subtraction – KPI 7.06 - Multiplication and division of integers – KPI 7.08 - Order of operations – KPI 7.02 - Unit of measurements – KPI 8.09
Core Knowledge	<i>Key terms and agreed definitions, any other key information essential to students, succeeding. In practical subjects this can include skills.</i>	Integer = Whole number	Money must always be written to 2 decimal places Credit = Money going into an account Debit = Money going out of an account Balance = Current total amount in an account	Brackets Indices (including powers and roots) Division / Multiplication Addition / Subtraction
Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	<i>Name the steps that student need to take – agreed department approach.</i>	Use of the column method for multiplication Use of the ‘bus stop method’ (short division) for division Adjusting place value when required to multiply and divide with decimals	Calculator multiplier method used to find percentages Column method for addition and subtraction Money must always be written to 2 decimal places	Order of operations to follow Brackets Indices (including powers and roots) Division / Multiplication Addition / Subtraction Next step to be underlined / highlighted and each calculation written clearly
Independent Practice	<i>The task and reference back to the Big Picture Slide</i>	1. Multiplication of integers 2. Multiplication of decimals 3. Division of integers (integer answers) 4. Division of integers (decimal answers) 5. Division of decimals	1. Calculations with units of money (pound / pence) 2. Completing bank statements	1. DM before AS 2. Working from left to right 3. Using the order of BIDMAS operations
Assessment (Informal/Formal)	<i>Circulation/live feedback/self-assessment/class assessment/whole class feedback (marking cycle)/quiz.</i>	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment
Calculator Usage	<i>Use of calculator functions</i>	N/A	Using a calculator to find basic percentages (multiplier method) Using the S-D button	N/A
Resources	<i>(Hyperlink)</i>			
Specific SEN(D)/EAL support	<i>Overview for the lesson – can be repeated strategies</i>	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed
Class considerations	<i>Specific set direction where applicable</i>	Numeracy focus – Multiplying and dividing positive integers	Numeracy focus – Understanding terminology (credit, debit, balance), using a calculator to complete bank statements	Numeracy focus – DM before AS Completing powers, roots, and brackets first

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Half Term 1 – Week 3 (WC Monday 18 th September)				
		1	2	3
Lesson Focus	<i>Big Picture – success criteria.</i>	Contingency time KPI 9.01 Decimal manipulation Closing the Gap	RECAP of rounding to the nearest 10, 100, 1000, integers and decimal places	RECAP of rounding to significant figures
Prerequisite Knowledge	<i>What knowledge are they building on (previous units/years)? Informs Do Now/Retrieval.</i>	- Addition and Subtraction – KPI 7.06 - Multiplication and division of integers – KPI 7.08 - Order of operations – KPI 7.02 - Unit of measurements – KPI 8.09	Rounding – 8.03	Rounding – 8.03
Core Knowledge	<i>Key terms and agreed definitions, any other key information essential to students, succeeding. In practical subjects this can include skills.</i>	N/A	Nearest = Closest	Significant zeros = Zero digits within a number that are necessary to indicate the quantity of something
Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	<i>Name the steps that student need to take – agreed department approach.</i>	N/A	Underline / highlight the digit that influences the rounding before changing any values	Count significant figures from left to right, circle any significant zeros Underline / highlight the digit that influences the rounding before changing any values
Independent Practice	<i>The task and reference back to the Big Picture Slide</i>	KPI test to be completed independently	1. Rounding to the nearest 10, 100, 1000 2. Rounding to the nearest integer and decimal place 3. Mixed rounding	1. Rounding integers to 1, 2 and 3 significant figures 2. Rounding decimals to 1, 2 and 3 significant figures 3. Mixed rounding to significant figures
Assessment (Informal/Formal)	<i>Circulation/live feedback/self-assessment/class assessment/whole class feedback (marking cycle)/quiz.</i>	KPI test	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment
Calculator Usage	<i>Use of calculator functions</i>	Using a calculator to find basic percentages (multiplier method) Using the S-D button	N/A	N/A
Resources	<i>(Hyperlink)</i>			
Specific SEN(D)/EAL support	<i>Overview for the lesson – can be repeated strategies</i>	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed
Class considerations	<i>Specific set direction where applicable</i>	Core or Extend KPI to be completed based on class focus	Numeracy focus – Identifying the digit that influences the rounding	Numeracy focus – Rounding integers to significant figures Recognising significant and non-significant zeros

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Half Term 1 – Week 4 (WC Monday 25 th September)				
		1	2	3
Lesson Focus	<i>Big Picture – success criteria.</i>	Estimation	Bounds Error intervals	Contingency time KPI 9.02 Estimation and limits of accuracy Closing the Gap
Prerequisite Knowledge	<i>What knowledge are they building on (previous units/years)? Informs Do Now/Retrieval.</i>	Rounding – 8.03	Rounding – 8.03	Rounding – 8.03
Core Knowledge	<i>Key terms and agreed definitions, any other key information essential to students, succeeding. In practical subjects this can include skills.</i>	Estimate = Roughly calculate or judge the value of something	Lower bound = The smallest value that would round to a given number Upper bound = The largest value that would round to a given number	N/A
Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	<i>Name the steps that student need to take – agreed department approach.</i>	Round to 1 significant figure Estimate the given calculation	Think about what place value the number has been rounded to Half the place value and add / subtract this from the given bound	N/A
Independent Practice	<i>The task and reference back to the Big Picture Slide</i>	- Basic estimation - Further / more complex estimation	- Bounds for rounding to the nearest 10, 100 and 1000 - Bounds for rounding to the nearest significant figure - Bounds for truncation - Mixed bounds problem solving	KPI test to be competed independently
Assessment (Informal/Formal)	<i>Circulation/live feedback/self-assessment/class assessment/whole class feedback (marking cycle)/quiz.</i>	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment	KPI test
Calculator Usage	<i>Use of calculator functions</i>	N/A	N/A	N/A
Resources	<i>(Hyperlink)</i>			
Specific SEN(D)/EAL support	<i>Overview for the lesson – can be repeated strategies</i>	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed
Class considerations	<i>Specific set direction where applicable</i>	Numeracy focus – Recognising that the command word ‘estimate’ means we need to round first	Numeracy focus – Listing values that would round to a given number	Core or Extend KPI to be completed based on class focus

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Half Term 1 – Week 5 (WC Monday 2 nd October)				
		1	2	3
Lesson Focus	<i>Big Picture – success criteria.</i>	Using one calculation to perform another	Contingency time KPI 9.03 Related calculations Closing the Gap	RECAP of prime numbers, HCF, LCM and prime factorisation
Prerequisite Knowledge	<i>What knowledge are they building on (previous units/years)? Informs Do Now/Retrieval.</i>	Multiplication and division of integers – KPI 7.08	Multiplication and division of integers – KPI 7.08	- Factors and multiples – KPI 7.04 - Two-way tables and Venn diagrams – KPI 7.20 - Primes, HCF and LCM – KPI 8.02
Core Knowledge	<i>Key terms and agreed definitions, any other key information essential to students, succeeding. In practical subjects this can include skills.</i>	Inverse = Opposite	N/A	Prime number = A number with exactly two factors Factors = A number that divides another number, leaving no remainder Multiples = The product result of one number multiplied by another number Common = The same
Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	<i>Name the steps that student need to take – agreed department approach.</i>	Recognise and use relationships between operations Multiplication and division are inverse operations	N/A	Divisibility tests for multiples of 2, 10, 5, 3, 9 and 6 Listing factors and circling the Highest Common Factor Listing multiples and circling the Lowest Common Multiple Using a prime factor tree to express a number as a product of prime factors (and simplifying this into index form)
Independent Practice	<i>The task and reference back to the Big Picture Slide</i>	1. Using powers of 10 to change calculations 2. Reversing multiplication and division calculations 3. Given one calculation, using operation facts to find another	KPI test to be completed independently	1. Factors and HCF 2. Multiples and LCM 3. Prime factorisation
Assessment (Informal/Formal)	<i>Circulation/live feedback/self-assessment/class assessment/whole class feedback (marking cycle)/quiz.</i>	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment	KPI test	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment
Calculator Usage	<i>Use of calculator functions</i>	N/A	N/A	Use of the FACT button
Resources	<i>(Hyperlink)</i>			
Specific SEN(D)/EAL support	<i>Overview for the lesson – can be repeated strategies</i>	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed
Class considerations	<i>Specific set direction where applicable</i>	Numeracy focus – Knowing that multiplication and division are the inverse of each other, using this to write calculations forwards and backwards	Core or Extend KPI to be completed based on class focus	Numeracy focus – Listing factors of a number Listing multiples of a number

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Half Term 1 – Week 6 (WC Monday 9 th October)				
		1	2	3
Lesson Focus	<i>Big Picture – success criteria.</i>	Finding the HCF and LCM from prime factorisation	Contingency time KPI 9.04 HCF and LCM of large numbers Closing the Gap	RECAP of adding and subtracting fractions and mixed numbers
Prerequisite Knowledge	<i>What knowledge are they building on (previous units/years)? Informs Do Now/Retrieval.</i>	- Factors and multiples – KPI 7.04 - Two-way tables and Venn diagrams – KPI 7.20 - Primes, HCF and LCM – KPI 8.02	- Factors and multiples – KPI 7.04 - Two-way tables and Venn diagrams – KPI 7.20 - Primes, HCF and LCM – KPI 8.02	- Fraction manipulation – KPI 7.10 - Basic operations with fractions – KPI 8.04
Core Knowledge	<i>Key terms and agreed definitions, any other key information essential to students, succeeding. In practical subjects this can include skills.</i>	Common = The same Product = Multiply	N/A	Numerator = The top of the fraction Denominator = The bottom of the fraction Common = The same
Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	<i>Name the steps that student need to take – agreed department approach.</i>	Using a prime factor tree to express a number as a product of prime factors (and simplifying this into index form) Using a Venn diagram to highlight common factors and using remaining factors to calculate the lowest common multiple	N/A	List multiples to find the LCM and multiply both fractions to make a common denominator
Independent Practice	<i>The task and reference back to the Big Picture Slide</i>	- Prime factorisation - HCF from prime factorisation - LCM from prime factorisation	KPI test to be completed independently	- Adding and subtracting proper fractions with the same denominator (and simplifying answers) - Adding and subtracting proper fractions with different denominators (and simplifying answers) - Adding and subtracting mixed numbers
Assessment (Informal/Formal)	<i>Circulation/live feedback/self-assessment/class assessment/whole class feedback (marking cycle)/quiz.</i>	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment	KPI test	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment
Calculator Usage	<i>Use of calculator functions</i>	Use of the FACT button	Use of the FACT button	Converting between improper fractions and mixed numbers on a calculator Using a calculator to simplify fractions
Resources	<i>(Hyperlink)</i>			
Specific SEN(D)/EAL support	<i>Overview for the lesson – can be repeated strategies</i>	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed
Class considerations	<i>Specific set direction where applicable</i>	Numeracy focus – Writing numbers as a product of prime factors	Core or Extend KPI to be completed based on class focus	Numeracy focus – Simplifying fractions Adding and subtracting proper fractions with the same denominator Adding and subtracting proper fractions with different denominators

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Half Term 1 – Week 7 (WC Monday 16 th October)				
		1	2	3
Lesson Focus	<i>Big Picture – success criteria.</i>	Find the reciprocal of an integer, decimal or fraction	RECAP of multiplying and dividing fractions and mixed numbers	RECAP of fraction of an amount and reverse fraction of an amount
Prerequisite Knowledge	<i>What knowledge are they building on (previous units/years)? Informs Do Now/Retrieval.</i>	- Fraction manipulation – KPI 7.10 - Basic operations with fractions – KPI 8.04	- Fraction manipulation – KPI 7.10 - Basic operations with fractions – KPI 8.04	- Fraction manipulation – KPI 7.10 - Basic operations with fractions – KPI 8.04
Core Knowledge	<i>Key terms and agreed definitions, any other key information essential to students, succeeding. In practical subjects this can include skills.</i>	Reciprocal = The value needed to multiply with a given number to make 1	Improper fraction = A fraction where the numerator is larger than the denominator Proper fraction = A fraction where the numerator is smaller than the denominator	Numerator = The top of the fraction Denominator = The bottom of the fraction
Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	<i>Name the steps that student need to take – agreed department approach.</i>	Convert the integer / decimal into a fraction Invert the fraction to find the reciprocal	To multiply fractions, multiply across the numerators and across the denominators To divide fractions, multiply by the reciprocal	Use a bar model to represent fraction of an amount problems Divide by the denominator to find a unit fraction of an amount
Independent Practice	<i>The task and reference back to the Big Picture Slide</i>	- Finding the reciprocals of fractions - Finding the reciprocals of integers - Finding the reciprocals of decimals	- Multiplying fractions - Dividing fractions - Multiplying mixed numbers - Dividing mixed numbers	- Unit fractions of amounts - Non-unit fractions of amounts - Reverse fractions of amounts
Assessment (Informal/Formal)	<i>Circulation/live feedback/self-assessment/class assessment/whole class feedback (marking cycle)/quiz.</i>	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment
Calculator Usage	<i>Use of calculator functions</i>	Using the S-D button	Converting between improper fractions and mixed numbers on a calculator Using a calculator to simplify fractions	N/A
Resources	<i>(Hyperlink)</i>			
Specific SEN(D)/EAL support	<i>Overview for the lesson – can be repeated strategies</i>	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed
Class considerations	<i>Specific set direction where applicable</i>	Numeracy focus – Finding the reciprocals of integers and fractions	Numeracy focus – Multiplying and dividing proper fractions	Numeracy focus – Using a bar model to find a fraction of an amount Using a bar model to represent reverse fraction of an amount questions

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Half Term 1 – Week 8 (WC Monday 23 rd October)				
		1	2	3
Lesson Focus	<i>Big Picture – success criteria.</i>	Express one quantity as a fraction of another Work with fractions in ratio problems	Contingency time KPI 9.05 Fraction calculations Closing the Gap	RECAP Closing the Gap
Prerequisite Knowledge	<i>What knowledge are they building on (previous units/years)? Informs Do Now/Retrieval.</i>	- Fraction manipulation – KPI 7.10 - Basic operations with fractions – KPI 8.04 - Units of measurements – KPI 8.09	- Fraction manipulation – KPI 7.10 - Basic operations with fractions – KPI 8.04	
Core Knowledge	<i>Key terms and agreed definitions, any other key information essential to students, succeeding. In practical subjects this can include skills.</i>	Units = Units describe length, weight, area, volume, density, and other values. Units can be imperial or metric and can be converted using conversion factors	N/A	
Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	<i>Name the steps that student need to take – agreed department approach.</i>	Ensure units are the same before writing one quantity as a fraction of another Use a bar model to represent ratio problems and use these to express parts as fractions	N/A	
Independent Practice	<i>The task and reference back to the Big Picture Slide</i>	1. Express one quantity as a fraction of another (same units) 2. Express one quantity as a fraction of another (different units) 3. Work with fractions in ratio problems	KPI test completed independently	
Assessment (Informal/Formal)	<i>Circulation/live feedback/self-assessment/class assessment/whole class feedback (marking cycle)/quiz.</i>	Circulation Live book marking Do Now self-assessment Whole class AFL Independent practice self-assessment	KPI test	
Calculator Usage	<i>Use of calculator functions</i>	N/A	Converting between improper fractions and mixed numbers on a calculator Using a calculator to simplify fractions Using the S-D button	
Resources	<i>(Hyperlink)</i>			
Specific SEN(D)/EAL support	<i>Overview for the lesson – can be repeated strategies</i>	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	Clear Expert Model printed or copied down for students to refer to New information broken down into small chunks Clear steps named for students to follow independently Student specific passport / ILP strategies followed	
Class considerations	<i>Specific set direction where applicable</i>	Numeracy focus – Expressing one quantity as a fraction of another Writing each part of a ratio as a fraction of the total	Core or Extend KPI to be completed based on class focus	Teacher to select most appropriate topic to teach based on class data (Do Now / Fluency / KPI tests / Live marking)