



Algebra: Pattern Sniffing

Number of lessons (between 6&8)	Content of the unit	Assumed prior learning (tested at the beginning of the unit)
1 week	Key concepts: <ul style="list-style-type: none"> • Generate terms of a sequence from either a term-to-term or a position-to-term rule deduce expressions to calculate the nth term of linear sequences 	<ul style="list-style-type: none"> • Use a term-to-term rule to generate a sequence • Find the term-to-term rule for a sequence • Describe a sequence using the term-to-term rule
Assessment points and tasks	Written feedback points	Learning Outcomes (tested at the end and related to subject competences)
Pre test Post-test (Half term exams/ mock exams)	Diagnostic marking (TF)-(green sticker)-(PF)/(SF) yellow and orange stickers Traffic lighting of exam papers <ul style="list-style-type: none"> • Some pupils will think that the nth term of the sequence 2, 5, 8, 11 ... is $n + 3$. • Some pupils may think that the $(2n)$th term is double the nth term of a linear sequence. • Some pupils may think that sequences with nth term of the form '$ax \pm b$' must start with 'a'. Notation $T(n)$ is often used when finding the nth term of sequence	<ul style="list-style-type: none"> • Represent problems and synthesise information in algebraic, geometrical or graphical form • Recognise the impact of constraints or assumptions • Generate terms of a sequence using term-to-term and position-to-term rules, on paper and using ICT Generate sequences from practical contexts and write and justify an expression to describe the n^{th} term of an arithmetic sequence



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Lesson	Clear learning intentions	Clear success criteria	Hook	Presentation of content	Guided practice	Independent practice (homework)	Closure
1& 2	Generate terms of a sequence using term-to-term and position-to-term rules , on paper	<ul style="list-style-type: none"> • Generate a sequence from a term-to-term rule • Use algebra to describe the position-to-term rule of a linear sequence (the nth term) Understand the meaning of a position-to-term rule	<ul style="list-style-type: none"> • Fluency Task : page 135 • Warm up page 135 & 137 Active: FOUNDATION	<ul style="list-style-type: none"> • Video & key point 11 : page 135 • Video x 2 & key point 12 : page 137 Example 7: scaffold Active: Foundation	<ul style="list-style-type: none"> • Q1-10 P135-6 Exam style Question <ul style="list-style-type: none"> • Q3-5 & Q 7-9,11 P137-8 		Write down the definitions of Sequence Linear Term Difference Term-to-term rule Position-to-term rule Ascending Descending nth term of sequence
3	Generate terms of a sequence using term-to-term and position-to-term rules, on paper and using ICT	<ul style="list-style-type: none"> • Generate a sequence using a spreadsheet • Use a position-to-term rule to generate a sequence • Find the position-to-term rule for a given sequence 	https://m.youtube.com/watch?v=S3KUzfCW17g ARITHMETIC SEQUENCES USING EXCEL	Excel : example worksheet KM: Spreadsheet sequences http://www.teachmathematics.net 'explore sequences with Excel TN'	Excel worksheet KM: Spreadsheet sequences http://www.teachmathematics.net		What are the advantages of using ICT to explore sequences?



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4 & 5	Generate sequences from practical contexts and write and justify an expression to describe the n^{th} term of an arithmetic sequence	Use the n^{th} term of a sequence to deduce if a given number is in a sequence• Represent problems and synthesise information in algebraic, geometrical or graphical form • Recognise the impact of constraints or assumptions	video 5.8 p137 Q16/17 AND SELF REFLECTION TASK	<ul style="list-style-type: none"> • Example 7: p137 • Modelling & problem solving q13 Active: Foundation p138	<ul style="list-style-type: none"> • Q6, 10 p137-8 • Modelling & problem solving Q14 p138 Active: Foundation p139	My maths	<ul style="list-style-type: none"> • Exam Q12: Reasoning and discussion NEXT STEPS (STRENGTHEN OR EXTEND NEXT LESSON)? BASED ON SELF REFLECTION AND OUTCOME OF Q14
6. Revision of objectives learnt throughout the topic.	Formative assessment on the core objectives, grouped by topic.	SEE: learning outcomes	GCSE Foundation book (S) DEEP LEARNING TASK ICON(S) PG 144	GCSE Foundation book (E) DEEP LEARNING TASK ICON P145:	Strengthen or Extend. (S)PAGE 144 Q1-4 (E)PAGE 145 Q3-7, 15		SELF MARKING Sf STICKER USING KNOWLEDGE CHECK BULLET POINTS P147 ACTIVE: FOUNDATION
7 Homework Lesson	Mymaths: n^{th} term task						