

WAUCONDA SCHOOL DISTRICT 118

UNIT PLANNING ORGANIZER

Subject: Algebra IIB

Unit : 5 Sequences and Series

Pacing: 15-17days

STAGE 1 – DESIRED RESULTS

Essential Questions:

- Why is it sometimes desirable to describe a pattern mathematically?
- What is the difference between an arithmetic sequence and a geometric sequence?

Big Ideas:

- Patterns provide insight into potential relationships
- Logical patterns exist and are a real occurrence around us.

CCSS (Priority Standards):

- A.SSE.4 Derive the formula for the sum of a finite geometric series (when the common ratio is not 1) and use the formula to solve problems.
- F.BF.1 Write a function that describes a relationship between two quantities
 - a. Determine an explicit expression, a recursive process, or steps for calculations
- F.BF.2 Write arithmetic and geometric sequences both recursively and with explicit formula; use them to model situations, and translate between the two forms.

STAGE 2 – EVIDENCE

Concepts (What students need to know)	Performance Tasks (What students will be able to do)	21st Century Skills
• General Sequences and Series • Arithmetic Sequences and Series • Geometric Sequence and Series • Infinite Geometric	Use and write Sequences Use summation notation to write series and find sum of series Write rules for arithmetic sequences and find sums of arithmetic series. Write rules for geometric	

Sequences and Series • Recursive Rules for Sequences	sequences Find sums of infinite series Evaluate and write recursive rules for sequences	
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Common Formative/Summative Assessments:

- Unit 5 Test
- Unit 5 Journal

Interim Assessments (Informal Progress Monitoring checks):

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Modified Common Assessments:

Modified Interim Assessments:

STAGE 3 – LEARNING PLAN (INSTRUCTIONAL PLANNING)

Suggested Resources/Materials/Informational Texts

Suggested Research-based Effective Instructional Strategies

Identifying Similarities and Differences - The ability to break a concept into its similar and dissimilar characteristics allows students to understand (and often solve) complex problems by analyzing them in a more simple way. Teachers can either directly present similarities and differences, accompanied by deep discussion and inquiry, or simply ask students to identify similarities and differences on their own. While teacher-directed activities focus on identifying specific items, student-directed activities encourage variation and broaden understanding, research shows.

Summarizing and Note Taking - These skills promote greater comprehension by asking students to analyze a subject to expose what's essential and then put it in their own words. According to research, this requires substituting, deleting, and keeping some things and having an awareness of the basic structure of the information presented.

Cues, Questions, and Advance Organizers Cues - Questions, and advance organizers help students use what they already know about a topic to enhance further learning. Research shows that these tools should be highly analytical, should focus on what is important, and are most effective when presented before a learning experience

Cooperative Learning - Research shows that organizing students into cooperative groups yields a positive effect on overall learning. When applying cooperative learning strategies, keep groups small and don't overuse this strategy-be systematic and consistent in your approach.

Reinforcing Effort and Providing Recognition - Effort and recognition speak to the attitudes and beliefs of students, and teachers must show the connection between effort and achievement. Research shows that although not all students realize the importance of effort, they can learn to change their beliefs to emphasize effort.

Taken from: Marzano's Nine Instructional Strategies for Effective Teaching and Learning

Academic Vocabulary/ Word Wall	Enrichment/Extensions/ Modifications
Essential Vocabulary: Terms Sequence Finite Sequence Infinite Sequence Series Summation Notation	

Sigma Notation Arithmetic Sequence Common Difference Arithmetic Series Geometric Sequence Common Ratio Infinite Geometric Series Explicit Rule Recursive Rule	
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