FRANKLIN-SIMPSON HIGH SCHOOL

Course Name: Algebra II   **Unit Name:** **Sequences and Series**

Quality Core Objectives:

Unit 1 Introduction to Algebra II: The Purpose and Predictability of Patterns	
A.1. Skills Acquired by Students . . .	a. Identify properties of real numbers and use them and the correct order of operations to simplify expressions
	j. Use inductive reasoning to make conjectures and deductive reasoning to arrive at valid conclusions
B.1. Mathematical Processes	a. Apply problem-solving skills (e.g., identifying irrelevant or missing information, making conjectures, extracting mathematical meaning, recognizing and performing multiple steps when needed, verifying results in the context of the problem) to the solution of real-world problems
	b. Use a variety of strategies to set up and solve increasingly complex problems
	c. Represent data, real-world situations, and solutions in increasingly complex contexts (e.g., expressions, formulas, tables, charts, graphs, relations, functions) and understand the relationships
	d. Use the language of mathematics to communicate increasingly complex ideas orally and in writing, using symbols and notations correctly
	e. Make appropriate use of estimation and mental mathematics in computations and to determine the reasonableness of solutions to increasingly complex problems
	f. Make mathematical connections among concepts, across disciplines, and in everyday experiences
	g. Demonstrate the appropriate role of technology (e.g., calculators, software programs) in mathematics (e.g., organize data, develop concepts, explore relationships, decrease time spent on computations after a skill has been established)
	h. Apply previously learned algebraic and geometric concepts to more advanced problems
H.2. Sequences and Series	a. Find the nth term of an arithmetic or geometric sequence
	b. Find the position of a given term of an arithmetic or geometric sequence
	c. Find sums of a finite arithmetic or geometric series
	d. Use sequences and series to solve real-world problems
	e. Use sigma notation to express sums

Purpose of the Unit: To solve real world problems using sequences and series.

Prerequisites: Students should be able to:
> evaluate functions
> identify mathematical patterns
> simplify complex factions

Daily Lesson Guide

Day	Lesson Content and Objectives	Focus Questions	Critical Thinking (High Yield / Literacy /LTF/etc.)	Engagement	Assessment and/or Accommodations
1	H.2.a H.2.b	What is a sequence? How can you represent the terms of a sequence recursively and explicitly? How do I find the given term of an arithmetic sequence?	Math Notes: Arithmetic Sequences	ACT bellringer	Formative assessment through guided practice Skills Practice 11.1 (1-24)

2	H.2.a H.2.b H.2.d	How do I determine the difference between an arithmetic and geometric sequence? How do I represent the terms of a geometric sequence explicitly?	Math Notes: Geometric Sequences	ACT bellringer	Summative assessment (Worksheet 11.1 and Exercise Schedule) Practice 9.3 Form G (1-19)
3	H.2.a H.2.b H.2.d	Same as Day 2	Finish Math Notes: Geometric Sequences Collaborative group work using 9.3 Think About a Plan	ACT bellringer	Formative assessment through guided practice Practice 9.3 Form G (32-48)
4	H.2.a H.2.b	Same as Day 2	Collaborative group work using Sequences Worksheet (3 Problems) LTF: Arithmetic Sequences	ACT bellringer	Formative assessment through group work on Sequences Worksheet
5	H.2.a H.2.b H.2.c	How do I find the sum of an arithmetic series?	Continuation of LTF lesson	ACT bellringer	Formative assessment through questioning techniques Page 591: 8-14, 34-47

6	H.2.c H.2.e	How do I express the sum of an arithmetic series using sigma notation? How do I use the calculator to find the sum of an arithmetic series?	Reciprocal Teaching	ACT bellringer	Formative assessment through monitoring of reciprocal teaching Page 591: 21-32, 57, 58, 62-64
7	H.2.c H.2.d H.2.e	How do I find the sum of a finite geometric series? How do I use the calculator to find the sum of a finite geometric series?	Hook to introduce geometric series using the real world application of money	ACT bellringer	Formative assessment through guided practice Page 599: 8-15, 32-37
8	H.2.c H.2.d	Same as Day 7	Collaborative group work using 9.5 Think About a Plan	ACT bellringer	Formative assessment through monitoring of group work Practice 9.5 (1-7, 18-27) Reteaching 9.5 Problem 14
9	H.2.a-e	Review of focus questions from Days 1-8	Independent work Think-Pair-Share Collaborative group work	ACT bellringer	Formative assessment through review game

10	H.2.a-e	Test	Constructed Response 3 Level of Questions		Summative assessment

11				
12				
13				
14				
15				