## **Series and Conics**

	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No
	4 – Mastery	5 - Proficient	Z - Dasic		Evidence
Recursive	Can extend	Write an explicit formula	Write an explicit formula	Write an explicit and	Little
and Explicit	thinking beyond	to model a situation in	to model a situation in	recursive function for an	evidence
Functions	the standard,	context.	<u>context.</u>	arithmetic or geometric	of
(F.BF.1a, F.IF.3, A.SSE.4)	including tasks			sequence.	reasoning
	that may involve				or
A.33E.47	one of the	Use an explicit formula to	Use an explicit and	Identify characteristics	application
	following:	find any term(s) in a	recursive function to find	(first term, common ratio,	to solve
	<ul> <li>Designing</li> </ul>	sequence given two non-	any term(s) in a sequence.	etc) of an arithmetic or	the
	Connecting	consecutive terms.		geometric sequence.	problem
	Synthesizing				
	Applying				
	<ul> <li>Justifying</li> </ul>				Does not
	Critiquing				meet the
	Analyzing				criteria in
	Creating				a level 1
	Proving				

# Instructional Focus: Explore sequences

## **Series and Conics**

Instructional Focus	Use finite and infinite formulas to solve problems	
instructional rocus.	Use mille and milline formulas to solve problems	)

	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Finite and	Can extend	Use the finite and infinite	Use the finite and infinite	Find the sum, using the	Little
infinite	thinking beyond	formulas for geometric	formulas for geometric	finite and infinite	evidence
formulas	the standard,	series to <b>solve real-world</b>	series to find:	formulas, for geometric	of
(A.SSE.4)	including tasks	problems	• sum	series	reasoning
	that may involve		<ul> <li><u>first term</u></li> </ul>		or
	one of the		<ul> <li><u>last term</u></li> </ul>		application
	following:		• <u>rate</u>		to solve
					the
	<ul> <li>Designing</li> </ul>				problem
	Connecting				
	<ul> <li>Synthesizing</li> </ul>				
	Applying				Does not
	<ul> <li>Justifying</li> </ul>				meet the
	Critiquing				criteria in
	Analyzing				a level 1
	Creating				
	Proving				

A.SSE.4 (edited) Use the finite and infinite formulas for geometric series to solve problems. For example, calculate mortgage payments.

#### **Series and Conics**

#### Instructional Focus: Derive the equation of ellipses and hyperbolas

	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No
					Evidence
Conics (G.GPE2,	Can extend	Write the equation of a	Identify the equation of a	Identify the focus and	Little
G.GPE.3)	thinking beyond	parabola given its focus	parabola given its focus	directix of a parabola	evidence of
	the standard,	and directrix.	and directrix.		reasoning
e ti a	including tasks				or
a	that may involve	Write the standard	Write the standard	<u>Identify</u> if a given	application
	one of the	equation of an ellipse or	equation of a hyperbola	equation represents an	to solve the
29	following:	hyperbola given the	or ellipse given the graph	ellipse or hyperbola	problem
-10 20 30		graph, <b>foci, or general</b>			
	<ul> <li>Designing</li> </ul>	form of the equation.			
	Connecting				Does not
	<ul> <li>Synthesizing</li> </ul>	Identify the center,	Identify the center and	Identify the <u>center</u> of an	meet the
	<ul> <li>Applying</li> </ul>	vertices, <u>and foci</u> given	vertices of an ellipse or	ellipse or hyperbola given	criteria in a
	<ul> <li>Justifying</li> </ul>	the equation of an ellipse	hyperbola given the graph	the graph or equation	level 1
	Critiquing	or hyperbola	or equation		
	<ul> <li>Analyzing</li> </ul>				
	Creating				
	<ul> <li>Proving</li> </ul>				
	1.104116				

**G.GPE.2** Derive the equation of a parabola given a focus and directrix.

G.GPE.3 (+) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.