



# Standard #: MAFS.912.F-BF.1.2

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Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms. ★

<b>Grade:</b> 912	
<b>Cluster:</b> <a href="#">Build a function that models a relationship between two quantities. (Algebra 1 - Supporting Cluster)</a> (Algebra 2 - Major Cluster) - Clusters should not be sorted from Major to Supporting and then taught in that order. To do so would strip the coherence of the mathematical ideas and miss the opportunity to enhance the major work of the grade with the supporting clusters.	<b>Date Adopted or Revised:</b> 02/14
<b>Content Complexity Rating:</b> <a href="#">Level 2: Basic Application of Skills &amp; Concepts</a> - <a href="#">More Information</a>	<b>Date of Last Rating:</b> 02/14
<b>Status:</b> State Board Approved	

## Related Courses

Course Number	Course Title
<a href="#">1200320:</a>	Algebra 1 Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
<a href="#">1200330:</a>	Algebra 2 (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
<a href="#">1200340:</a>	Algebra 2 Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
<a href="#">1201300:</a>	Mathematical Analysis Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
<a href="#">1298310:</a>	Advanced Topics in Mathematics (formerly 129830A) (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
<a href="#">1200500:</a>	Advanced Algebra with Financial Applications (Specifically in versions: 2014 - 2015 (course terminated))
<a href="#">1200335:</a>	Algebra 2 for Credit Recovery (Specifically in versions: 2014 - 2015, 2015 - 2019 (course terminated))

## Related Access Points

### Access Point

Access Points Number	Access Points Title
<a href="#">MAFS.912.F-BF.1.AP.2a:</a>	Write arithmetic sequences with an explicit formula. $a_n = a_1 + d(n - 1)$
<a href="#">MAFS.912.F-BF.1.AP.2b:</a>	Select the function that models the arithmetic sequence written recursively.
<a href="#">MAFS.912.F-BF.1.AP.2c:</a>	Write geometric sequences with an explicit formula ( $a_n = a_1 r^{n-1}$ ).
<a href="#">MAFS.912.F-BF.1.AP.2d:</a>	Select the function that models the geometric sequence written recursively.

## Related Resources

### Tutorial

Name	Description
<a href="#">Finding the nth term in a recursively defined sequence:</a>	Finding the 5th term in recursively defined sequence
<a href="#">Geometric sequence or progression:</a>	We will learn how to write a geometric sequence.
<a href="#">Geometric series:</a>	Geometric series

### Virtual Manipulative

Name	Description
<a href="#">Geometric and Harmonic Series- Limits:</a>	This applet allows users to set up various geometric series with a visual representation of the successive terms, and the corresponding sum of those terms.

### Lesson Plan

Name	Description
	The Plants versus Pollutants MEA provides students with an open-ended problem in which they must work as a team

[Plants versus Pollutants Model Eliciting Activity:](#) to design a procedure to select the best plants to clean up certain toxins. This MEA requires students to formulate a phytoremediation-based solution to a problem involving cleaning of a contaminated land site. Students are provided the context of the problem, a request letter from a client asking them to provide a recommendation, and data relevant to the situation. Students utilize the data to create a defensible model solution to present to the client.

### Assessment

Name	Description
<a href="#">Sample 1 - High School Algebra 2 State Interim Assessment:</a>	This is a State Interim Assessment for 9th-12th grades.
<a href="#">Sample 2 - High School Algebra 2 State Interim Assessment:</a>	This is a State Interim Assessment for 9th-12th grades.
<a href="#">Sample 3 - High School Algebra 2 State Interim Assessment:</a>	This is a State Interim Assessment for 9th-12th grades.

### Problem-Solving Task

Name	Description
<a href="#">Temperatures in Degrees Fahrenheit and Celsius:</a>	Temperature conversions provide a rich source of linear functions which are encountered not only in science but also in our every day lives when we travel abroad. The first part of this task provides an opportunity to construct a linear function given two input-output pairs. The second part investigates the inverse of a linear function while the third part requires reasoning about quantities and/or solving a linear equation.

### Student Resources

Name	Description
<a href="#">Finding the nth term in a recursively defined sequence:</a>	Finding the 5th term in recursively defined sequence
<a href="#">Geometric and Harmonic Series-Limits:</a>	This applet allows users to set up various geometric series with a visual representation of the successive terms, and the corresponding sum of those terms.
<a href="#">Geometric sequence or progression:</a>	We will learn how to write a geometric sequence.
<a href="#">Geometric series:</a>	Geometric series
<a href="#">Temperatures in Degrees Fahrenheit and Celsius:</a>	Temperature conversions provide a rich source of linear functions which are encountered not only in science but also in our every day lives when we travel abroad. The first part of this task provides an opportunity to construct a linear function given two input-output pairs. The second part investigates the inverse of a linear function while the third part requires reasoning about quantities and/or solving a linear equation.

### Parent Resources

Name	Description
<a href="#">Temperatures in Degrees Fahrenheit and Celsius:</a>	Temperature conversions provide a rich source of linear functions which are encountered not only in science but also in our every day lives when we travel abroad. The first part of this task provides an opportunity to construct a linear function given two input-output pairs. The second part investigates the inverse of a linear function while the third part requires reasoning about quantities and/or solving a linear equation.