## Anoka-Hennepin Secondary Curriculum Unit Plan

Department:	Mathematics	Course:	AP Calculus AB	Unit 1 Title:	Limits
Assessed Trimester:	Trimester A	Pacing:	10-26 days	Date Created:	2/2/2010

## **Course Understandings**: *Students will understand that:*

- A. Students will understand that the meaning of limit represents function behavior.
- E. Students will understand that you can model a written description of a physical situation with a function, a differential equation, or an integral.
- F. Students will understand that you can use technology to help solve problems, experiment, interpret results, and support conclusions.

## DESIRED RESULTS (Stage 1) - WHAT WE WANT STUDENT TO KNOW AND BE ABLE TO DO?

Established Goals				
Minnesota State/Local/College Board/Technology Standard(s) addressed:				
<ul> <li>AP: I. Functions, Graphs, and Limits         <ul> <li>Analysis of graphs</li> <li>With the aid of technology, graphs of functions are often easy to produce. The emphasis is on the interplay between the geometric and analytic information and on the use of calculus both to preto explain the observed local and global behavior of a function.</li> <li>Limits of functions (including one-sided limits)                 <ul></ul></li></ul></li></ul>				
Students will be able to independently use their learning to: (product, high order reasoning)				
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	Meaning			
Unit Understanding(s):	Essential Question(s):			
Students will understand that:	Students will keep considering:			
<ul> <li>Intuitively, the meaning of a limit</li> </ul>	<ul> <li>Is there a connection between a limit and a function's asymptotes?</li> </ul>			
How to evaluate a limit graphically, numerically, and algebraically	• Can I find the limit by looking at the graph of the function?			
Ihe connections between limits and asymptotes	Can a function have a limit at a point of discontinuity?			
Ine relationship between limits and continuity  The difference between end sided and two sided limits	<ul> <li>Can the limit approaching the x-value from the left be different from the limit approaching the same</li> </ul>			
	x-value from the fight?			

	Grade Level(s):	10-12
	Last Revision Date:	6/19/2014
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Question	n(s):	
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uity?		

Acquisition		
<ul> <li>Knowledge - Students will: <ul> <li>Calculate limits</li> <li>Identify asymptotes</li> <li>Determine continuity/discontinuity</li> </ul> </li> <li>Reasoning - Students will: <ul> <li>Interpret how limits and asymptotes connect to one another.</li> <li>Analyze graphs using limits</li> <li>Determine when to use left and right-hand limits to classify discontinuities</li> <li>Understand continuity/discontinuity</li> </ul> </li> </ul>	<ul> <li>Skills - Students will:</li> <li>AB1-1: Use limits to calculate vertical and horizo</li> <li>AB1-2: Use limits to determine continuity and di</li> <li>AB1-3: Use one-sided limits to determine asymptotic determine determine asymptotic determine asymptot</li></ul>	

Common Misunderstandings	Essential new vocabulary
<ul> <li>Students think that a limit cannot exist at a point of discontinuity</li> </ul>	• Limit
<ul> <li>Students get confused with the left/right limit notation</li> </ul>	One-sided limits
<ul> <li>Students have trouble with factoring higher degree polynomials</li> </ul>	Two-sided limits
<ul> <li>Students have trouble with complex fractions</li> </ul>	

contal asymptotes and end behavior liscontinuity nptotes & points of discontinuity