



## AP CALCULUS AB UNIT PLANNER



Unit title	Unit 1: Limits & Continuity	Unit duration	3 Weeks
<b>Essential Questions (OR GUIDING QUESTIONS?)</b>			
<p>Can change occur at an instant? How does knowing the value of a limit, or that a limit does not exist, help you to make sense of interesting features of functions and their graphs? How do we close loopholes so that a conclusion about a function is always true?</p>			
<b>Assessments</b>			
<p>Homework Quizzes Formative Assessments Summative Assessment</p>			
<b>Content Standards</b>			
<p>1.1 Introducing Calculus: Can change occur at an instant? 1.2 Defining limits and using limit notation 1.3 Estimating limit values from graphs 1.4 Estimating limit values from tables 1.5 Determining limits using algebraic properties of limits 1.6 Determining limits using algebraic manipulation 1.7 Selecting procedures for determining limits 1.8 Determining limits using the Squeeze Theorem 1.9 Connecting multiple representations of limits 1.10 Exploring types of discontinuities 1.11 Defining continuity at a point 1.12 Confirming continuity over an interval 1.13 Removing discontinuities 1.14 Connecting infinite limits and vertical asymptotes 1.15 Connecting limits at infinity and horizontal asymptotes 1.16 Working with the Intermediate Value Theorem (IVT)</p>			

## Learning Activities and Experiences

Topic	Resource	Content Covered	Standards Addressed
Limits	Unit 1 Guided Notes (pdf adapted from Master Math Mentor), pages 7-12	<ul style="list-style-type: none"> <li>Introducing Calculus: Can change occur at an instant?</li> </ul>	1.1
		<ul style="list-style-type: none"> <li>Defining limits and using limit notation</li> </ul>	1.2
		<ul style="list-style-type: none"> <li>Estimating limit values from graphs</li> </ul>	1.3
		<ul style="list-style-type: none"> <li>Estimating limit values from tables</li> </ul>	1.4
	Unit 1 Guided Notes (pdf adapted from Master Math Mentor), pages 15-25	<ul style="list-style-type: none"> <li>Determining limits using algebraic properties of limits</li> </ul>	1.5
		<ul style="list-style-type: none"> <li>Determining limits using graphical approach</li> </ul>	1.6
		<ul style="list-style-type: none"> <li>Selecting procedures for determining limits</li> </ul>	1.7
	Unit 1 Guided Notes (pdf adapted from Tony Record), pages 13-14 Skill Builder WS 1.8	<ul style="list-style-type: none"> <li>Determining limits using the Squeeze Theorem</li> </ul>	1.8
	Unit 1 Guided Notes (pdf adapted from Tony Record), pages 15 Skill Builder WS 1.9	<ul style="list-style-type: none"> <li>Connecting multiple representations of limits</li> </ul>	1.9
Continuity	Unit 1 Guided Notes (pdf adapted from Master Math Mentor), pages 70-71	<ul style="list-style-type: none"> <li>Exploring types of discontinuities</li> </ul>	1.10
		<ul style="list-style-type: none"> <li>Defining continuity at a point</li> </ul>	1.11
		<ul style="list-style-type: none"> <li>Confirming continuity over an interval</li> </ul>	1.12
		<ul style="list-style-type: none"> <li>Removing discontinuities</li> </ul>	1.13
Asymptotes & IVT	Unit 1 Guided Notes (pdf adapted from Master Math Mentor Record), pages 19-29	<ul style="list-style-type: none"> <li>Connecting infinite limits and vertical asymptotes</li> </ul>	1.14
		<ul style="list-style-type: none"> <li>Connecting limits at infinity and horizontal asymptotes</li> </ul>	1.15
		<ul style="list-style-type: none"> <li>Working with the Intermediate Value Theorem (IVT)</li> </ul>	1.16

**Additional Resources:**

- Interactive notebook pages
- Unit 1 Review (adapted from Tony Record)

**Personalized Learning and Differentiation**

Teachers differentiate by providing examples (work samples or task-specific clarifications of assessment criteria); structuring support (advance organizers, flexible grouping, peer relationships); establishing flexible deadlines, and adjusting the pace.

- SWD/504- Accommodations provided
- ELL- Five Principle ELL Curriculum Framework and Vocabulary Supports
- Intervention Support- Re-teaching Activities in Small Groups with Progress Monitoring
- Extensions- Enrichment Tasks and Projects

**Resources**

- AP Classroom (within AP Central, collegeboard.org)
- Calculus textbook: Calculus, 11e, Larson & Edwards
- Tony Record (Avon HS) created resources
- [www.flippedmath.com](http://www.flippedmath.com)
- Khan Academy
- Delta Math
- Master Math Mentor (pdf files and videos)
- Teacher created resources