



## AP CALCULUS BC UNIT PLANNER



<b>Unit title</b>	<b>Unit 4: Contextual Applications of Differentiation</b>	<b>Unit duration</b>	<b>2 weeks</b>
<b>Essential Questions (OR GUIDING QUESTIONS?)</b>			
<p>How are derivatives used to solve problems regarding position, velocity, and acceleration?          How can you use related rates to solve problems with multiple variables changing?          How can we use L'Hopitals rule to determine the limit of an equation with an indeterminate form?</p>			
<b>Assessments</b>			
<p>Homework Quizzes          Formative Assessments          Summative Assessment</p>			
<b>Content Standards</b>			
<p>4.1 Interpreting the meaning of the derivative in context          4.2 Straight-line motion: Connecting position, velocity, and acceleration          4.3 Rates of change in applied contexts other than motion          4.4 Introduction to related rates          4.5 Solving related rates problems          4.6 Approximating values of a function using local linearity and linearization          4.7 Using L'Hospital's rule for determining limits of indeterminate forms</p>			
<b>Learning Activities and Experiences</b>			
<b>Topic</b>	<b>Resource</b>	<b>Content Covered</b>	<b>Standards Addressed</b>
Straight line motion	Unit 4 Guided Notes (pdf adapted from Tony Record), pages 1-2 Skill Builder WS 4.1	<ul style="list-style-type: none"> <li>Interpreting the meaning of the derivative in context</li> </ul>	4.1
	Unit 4 Guided Notes (pdf adapted from Tony Record), pages 3-9 Skill Builder WS 4.2 (multiple)	<ul style="list-style-type: none"> <li>Straight-line motion: Connecting position, velocity, and acceleration</li> </ul>	4.2
	Unit 4 Guided Notes (pdf adapted from Tony Record), pages 10-11	<ul style="list-style-type: none"> <li>Rates of change in applied contexts other than motion</li> </ul>	4.3

	Skill Builder WS 4.3		
Related rates	Unit 4 Guided Notes (pdf adapted from Tony Record), pages 12-17 Skill Builder WS 4.4-4.5	● Introduction to related rates	4.4
		● Solving related rates problems	4.5
Local linearity	Unit 4 Guided Notes (pdf adapted from Tony Record), pages 18-19 Skill Builder WS 4.6	● Approximating values of a function using local linearity and linearization	4.6
L'Hospital's rule	Unit 4 Guided Notes (pdf adapted from Tony Record), pages 20-23 Skill Builder WS 4.7	● Using L'Hospital's rule for determining limits of indeterminate forms	4.7
<b>Additional Resources:</b> <ul style="list-style-type: none"> <li>● Interactive Notebook pages</li> <li>● Unit 4 review (adapted from Tony Record)</li> </ul>			

### 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
- Khan Academy
- Delta Math
- Master Math Mentor (pdf files and videos)
- Teacher created resources