



AP CALCULUS BC UNIT PLANNER



Unit title	Unit 2: Differentiation: Definition and Basic Derivative Rules	Unit duration	2 Weeks
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Essential Questions (OR GUIDING QUESTIONS?)
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How do derivatives allow us to find instantaneous rates of change?
 Why do mathematical properties and rules for simplifying and evaluating limits apply to differentiation?
 What does a derivative tell us about a real world scenario?

Assessments

Homework Quizzes
 Formative Assessments
 Summative Assessment

Content Standards

- 2.1 Defining average and instantaneous rates of change
- 2.2 Defining the derivative of a function and using derivative notation
- 2.3 Estimating derivatives of a function at a point
- 2.4 Connecting differentiability with continuity
- 2.5 Applying the power rule
- 2.6 Derivative rules: constant, sum, difference, and constant multiple
- 2.7 Derivative of $\cos(x)$, $\sin(x)$, e^x , and $\ln(x)$
- 2.8 The product rule
- 2.9 The quotient rule
- 2.10 Finding the derivatives of tangent, cotangent, secant, and/or cosecant functions

Learning Activities and Experiences
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Topic	Resource	Content Covered	Standards Addressed
Intro to derivatives	Unit 2 Guided Notes (pdf adapted from Tony Record), pages 1-10 Skill Builder WS 2.1-2.3, 2.4	<ul style="list-style-type: none"> ● Defining average and instantaneous rates of change 	2.1
		<ul style="list-style-type: none"> ● Defining the derivative of a function and using derivative notation 	2.2
		<ul style="list-style-type: none"> ● Estimating derivatives of a function at a point 	2.3
		<ul style="list-style-type: none"> ● Connecting differentiability with continuity 	2.4

Derivative rules	Unit 2 Guided Notes (pdf adapted from Tony Record), pages 11-15 Skill Builder WS 2.5, 2.7	● Applying the power rule	2.5
		● Derivative rules: constant, sum, difference, and constant multiple	2.6
		● Derivative of $\cos(x)$, $\sin(x)$, e^x , and $\ln(x)$	2.7
	Unit 2 Guided Notes (pdf adapted from Tony Record), pages 16-21 Skill Builder WS 2.8-2.9	● The product rule	2.8
		● The quotient rule	2.9
	Unit 2 Guided Notes (pdf adapted from Tony Record), pages 22-23 Skill Builder WS 2.10	● Finding the derivatives of tangent, cotangent, secant, and/or cosecant functions	2.10
Additional Resources: <ul style="list-style-type: none"> ● Interactive notebook pages ● Unit 2 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, 22e, Larson & Edwards
- Tony Record (Avon HS) created resources
- www.flippedmath.com
- Khan Academy
- Delta Math
- Master Math Mentor (pdf files and videos)
- Teacher created resources