

Utah 12 Calculus

FREE PREVIEW

Full-Year Teacher Planner, Blank Editable Planner & School-Submission Binder

This preview shows the real structure and a genuine sample of the completed planner. The full product contains 9 units, 36 weekly plans and 180 daily plans, plus blank editable versions of every form.

State	Utah
Grade	12 (High)
Subject	Calculus
Course category	Mathematics
Standards family	Mathematics
Framework	Utah Core Standards
Issuing agency	Utah State Board of Education
Scope	36 instructional weeks · 180 instructional days · 9 units

This is a statewide standards index, not a local course catalog. Course names, grade placement, electives, and graduation sequences vary by district.

What you get

Folder	Contents
01 START HERE	Read-me, contents, printing and digital instructions, standards verification guide, this preview
02 FILLED FULL YEAR	Completed planner in colour and ink-friendly PDF, plus editable DOCX
03 BLANK EDITABLE	Blank planner in colour, ink-friendly and fillable PDF, plus editable DOCX
04 ASSESSMENTS AND DATA	Baseline observation, quarterly rubrics, anecdotal forms, portfolio checklist
05 SCHOOL SUBMISSION	Submission covers, alignment summary, evidence checklist, observation, reflection, signature page
06 LICENSE AND CREDITS	Terms of use, credits and licences, copyright notice

The pages that follow are reproduced **exactly** as they appear in the full completed planner.

Week 9 — The Derivative at a Point

Unit 3: The Derivative · Month 3 · Quarter 1 · Semester 1 · Instructional Days 41–45

Essential question	Can we compute the tangent slope exactly?
Standards	The Derivative by Definition -> III.2 STATISTICS—Conditional Probability and the Rules of Probability — Use the Fundamental Theorem of Calculus to find definite integrals and to solve differential equations. a. Understand antidifferentiation and the indefinite integral in terms of reversing the operation of differentiation. b. Understand that the antiderivative is unique up to a constant. c. Relate antiderivatives and definite integrals by the Fundamental Theorem of Calculus. d. Use an initial condition to find a specific antiderivative. e. Create slope fields from differential equations and use them to draw possible antiderivatives. f. Understand properties of integrals.
Learning target	"I can work with the derivative at a point."
Local dates	_____ (enter your school dates)

Measurable objectives

- Students will setting it up

Success criteria (student-friendly)

- "I can explain the key idea of this week."
- "I can carry out the week's procedure accurately."
- "I can interpret my answer in context."

Academic vocabulary

derivative, difference quotient, tangent line, normal line

Materials and technology

- Graphing technology
- Supplied practice sets

Differentiation and supports

Support area	This week's plan
Special education / IEP	Reduce group size; pair visual cue cards with all verbal directions; allow gesture or picture response in place of speech; pre-teach the week's target in a 1:1 warm-up.
Section 504	Provide the child's documented accommodations throughout; permit movement breaks and alternative seating at any point in the sequence.
Multilingual learners	Introduce each vocabulary word with an object or image; accept home-language responses; send the vocabulary list home where a translation is available; pair with a peer who shares the home language.
Advanced / extension	Ask the learner to teach the skill to a peer, extend the task, or record a demonstration for the class reference wall.

Support area	This week's plan
Intervention / reteach	Reteach the target in a short small group using the same materials; split the day's check for understanding into two smaller steps.
Enrichment	Extend into an open-ended centre or project connected to the essential question.

Assessment and evidence

Student writes the equation of a normal line.

Family communication

Ask your child what the derivative at a point means, and to show you one example.

Day 41 — The Difference Quotient

Week 9, Day 1 · Unit 3 · Standards: III.2

Focus	Setting it up.
Learning target	"I can work with the derivative at a point."
Vocabulary in use	derivative, difference quotient, tangent line
Local date	_____

Learning sequence

Connect: Week 3 estimates. Teach: the difference quotient and the limit definition of the derivative at a point. Try: shared setup. Apply: pupils set up three without evaluating. Reflect: setting it up correctly is most of the work.

Check for understanding

Student writes the limit definition for a given function and point.

Differentiation in the moment

If the learner...	Then...
needs more support	Model the step again with guided support, then fade to a gesture cue.
is ready for more	Invite the learner to demonstrate for a peer or add a second example.
is dysregulated	Pause instruction, move to co-regulation, and return to the target later.

Closure and reflection

Gather the group. Restate the learning target. Ask one learner to demonstrate. Name one specific thing the group did well, then preview tomorrow.

Teacher reflection (fictional example)

Fictional Example — Customize and Verify Before School Submission.

Most learners met the target. Two needed the visual cue repeated during guided practice; I will pre-teach with them tomorrow. The extension held attention longer than planned, so I shortened closure.

Day 42 — Computing from the Definition

Week 9, Day 2 · Unit 3 · Standards: III.2

Focus	First principles.
Learning target	"I can work with the derivative at a point."
Vocabulary in use	derivative, difference quotient, tangent line
Local date	_____

Learning sequence

Connect: Unit 2 algebra. Teach: evaluating the difference quotient by expanding and cancelling. Try: worked example on a quadratic. Apply: pupils compute three from first principles. Reflect: the 0/0 always cancels, and that is the point.

Check for understanding

Student computes a derivative from the definition.

Differentiation in the moment

If the learner...	Then...
needs more support	Model the step again with guided support, then fade to a gesture cue.
is ready for more	Invite the learner to demonstrate for a peer or add a second example.
is dysregulated	Pause instruction, move to co-regulation, and return to the target later.

Closure and reflection

Gather the group. Restate the learning target. Ask one learner to demonstrate. Name one specific thing the group did well, then preview tomorrow.

Teacher reflection (fictional example)

Fictional Example — Customize and Verify Before School Submission.

Most learners met the target. Two needed the visual cue repeated during guided practice; I will pre-teach with them tomorrow. The extension held attention longer than planned, so I shortened closure.

Day 43 — Interpreting the Value

Week 9, Day 3 · Unit 3 · Standards: III.2

Focus	What it means.
Learning target	"I can work with the derivative at a point."
Vocabulary in use	derivative, difference quotient, tangent line
Local date	_____

Learning sequence

Connect: units. Teach: the derivative as instantaneous rate, with units, and as tangent slope. Try: shared interpretation. Apply: pupils interpret four values in context. Reflect: a number without an interpretation is not an answer.

Check for understanding

Student interprets a derivative value with correct units.

Differentiation in the moment

If the learner...	Then...
needs more support	Model the step again with guided support, then fade to a gesture cue.
is ready for more	Invite the learner to demonstrate for a peer or add a second example.
is dysregulated	Pause instruction, move to co-regulation, and return to the target later.

Closure and reflection

Gather the group. Restate the learning target. Ask one learner to demonstrate. Name one specific thing the group did well, then preview tomorrow.

Teacher reflection (fictional example)

Fictional Example — Customize and Verify Before School Submission.

Most learners met the target. Two needed the visual cue repeated during guided practice; I will pre-teach with them tomorrow. The extension held attention longer than planned, so I shortened closure.

Day 44 — The Tangent Line

Week 9, Day 4 · Unit 3 · Standards: III.2

Focus	Writing the equation.
Learning target	"I can work with the derivative at a point."
Vocabulary in use	derivative, difference quotient, tangent line
Local date	_____

Learning sequence

Connect: point-slope form. Teach: using the derivative to write the tangent at a point. Try: shared example. Apply: pupils write three tangents. Reflect: the tangent is the best straight-line description near the point.

Check for understanding

Student writes the equation of a tangent line.

Differentiation in the moment

If the learner...	Then...
needs more support	Model the step again with guided support, then fade to a gesture cue.
is ready for more	Invite the learner to demonstrate for a peer or add a second example.
is dysregulated	Pause instruction, move to co-regulation, and return to the target later.

Closure and reflection

Gather the group. Restate the learning target. Ask one learner to demonstrate. Name one specific thing the group did well, then preview tomorrow.

Teacher reflection (fictional example)

Fictional Example — Customize and Verify Before School Submission.

Most learners met the target. Two needed the visual cue repeated during guided practice; I will pre-teach with them tomorrow. The extension held attention longer than planned, so I shortened closure.

Day 45 — Normal Lines

Week 9, Day 5 · Unit 3 · Standards: III.2

Focus	Perpendicular.
Learning target	"I can work with the derivative at a point."
Vocabulary in use	derivative, difference quotient, tangent line
Local date	_____

Learning sequence

Connect: perpendicular gradients. Teach: the normal line and its slope. Try: shared example. Apply: pupils write two normals. Reflect: a small extension that tests whether the tangent was understood.

Check for understanding

Student writes the equation of a normal line.

Differentiation in the moment

If the learner...	Then...
needs more support	Model the step again with guided support, then fade to a gesture cue.
is ready for more	Invite the learner to demonstrate for a peer or add a second example.
is dysregulated	Pause instruction, move to co-regulation, and return to the target later.

Closure and reflection

Gather the group. Restate the learning target. Ask one learner to demonstrate. Name one specific thing the group did well, then preview tomorrow.

Teacher reflection (fictional example)

Fictional Example — Customize and Verify Before School Submission.

Most learners met the target. Two needed the visual cue repeated during guided practice; I will pre-teach with them tomorrow. The extension held attention longer than planned, so I shortened closure.

Important before you buy

- This is a **digital download**. Nothing is shipped.
- The planner is **calendar-neutral**: Month 1–9, Week 1–36, Day 1–180, so it fits any school calendar. You add your own dates.
- Standards were transcribed from the official source.
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