CPM Integrated Calculus Pacing Guide

This document is an estimation of pacing for the school year. The teacher will have to make adjustments based on student needs and skill levels. It is our expectation that we will get most students to standard before moving on to the next section, so flexibility is required with this document. Again, these are only estimated completion dates!

On page 2, there is an estimate of the number of days each topic will take. This estimation does not include days for local and state assessments (including but not limited to NWEA, finals, CAASPP, etc). Plus standards will or will not be covered based on teacher discretion as they are enrichment standards rather than core standards. As always, it is our goal to get as much material covered in the school year with student comprehension, so additional topics can be covered if a class is excelling past this timeline.

Overview of Standards:

The big ideas serve as the foundation of the course and allow students to create meaningful connections among concepts. They are often abstract concepts or themes that become threads that run throughout the course. Revisiting the big ideas and applying them in a variety of contexts allows students to develop deeper conceptual understanding. Below are the big ideas of the course and a brief description of each.

BIG IDEA 1: CHANGE (CHA)

Using derivatives to describe rates of change of one variable with respect to another or using definite integrals to describe the net change in one variable over an interval of another allows students to understand change in a variety of contexts. It is critical that students grasp the relationship between integration and differentiation as expressed in the Fundamental Theorem of Calculus—a central idea in AP Calculus.

BIG IDEA 2: LIMITS (LIM)

Beginning with a discrete model and then considering the consequences of a limiting case allows us to model real-world behavior and to discover and understand important ideas, definitions, formulas, and theorems in calculus: for example, continuity, differentiation, integration, and series (bc only).

BIG IDEA 3: ANALYSIS OF FUNCTIONS (FUN)

Calculus allows us to analyze the behaviors of functions by relating limits to differentiation, integration, and infinite series and relating each of these concepts to the others.

Estimated Timeline of Topics

Topic	Standards Covered	Estimated Number of Days	Estimated Start Month
Math 3 Review	A-CED.2, A-SSE.1b, F-BF.1, F-BF.3, F-IF.4, F-IF.5, F-IF.6, F-IF.7b, F-IF.7e, G-GPE.3.1, F-BF.3, F-BF.4, F-IF.7e, F-LE.4, F-LE.4.2, F-BF.1, F-TF.1, F-TF.2, F-TF.2.1, F-TF.5, F-IF.4, F-IF.7e	10 Days	August (ongoing through the following topic)
A Beginning Look At Calculus	3.2C1*, 3.4C1*, 2.1A1*, 2.3C1*, 1.2A1*, 1.1D1*, 2.1C4*, 2.1B1*, 3.4D2*, 2.3D1*, 3.4B1, 3.3A2*, 3.2B1*	20 Days	August

Rates, Sums, Limits, and Continuity	3.2B2, 3.2A1, 1.1A1, 1.1A2, 1.1A3, 1.1B1, 1.2A1, 1.2A3, 1.2B1, 1.1C1, 1.1C2, 1.1D1, 1.1D2, 2.3B2*, 3.2A3	16 days	October
Slope and Curve Analysis	2.1B1, 2.1C3, 2.3B1, 2.1A1, 2.1A2, 2.1A3, 2.1C1, 2.3C1, 2.1A5, 2.3A1, 2.1D1, 2.1D2, 2.2A1, 2.2A2, 2.2A3, 2.2B1, 2.1A4, 2.2B2, 3.1A1, 3.1A2, 2.3B1	19 days	November
The Fundamental Theorem of Calculus	3.2A3, 3.2A2, 3.2A3, 3.2C2, 3.2C1, 3.3A1, 3.3B3, 3.1A1, 3.1A2, 3.3B1, 3.3B2, 3.3A2, 3.3A1, 3.4A1, 3.4A2, 3.5A4, 3.4E1, 2.1A1, 2.3C3, 2.3C1, 1.2A1, 1.2A2, 2.2B2, 3.4C1, 3.5A1, 3.4D1, 2.3B1	21 days	January
Derivative Tools and Applications	2.2A1, 2.3A1, 2.3C1, 2.3C3, 2.2B1, 1.2B1, 2.2A2, 2.1C3, 2.1C1, 2.1C4, 2.1C2, 2.3C3, 3.3A2, 2.1C4, 1.1C3, 2.3B2	20 days	February
Additional Tools and Theorems	2.1C1, 2.1C2, 2.1C3, 2.1C4, 3.1A2, 2.1C5, 2.1C6, 2.1A1, 3.4B1, 2.4A1, 1.2B1, 3.2D1, 3.2D2	18 days	March
Related Rates and Integration Tools	2.3D1, 2.3A1, 2.3C2, 3.3B5, 3.5A1, 3.5A2, 3.5A3, 2.3E1, 2.3E2, 3.5B1, 3.5A4, 2.3F1, EK 2.3F2	21 days	April

* means "in preparation for" the standard listed.