**PACING GUIDE**

**COURSE:** AP Calculus AB **GRADE(S): 12**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **MONTH/DAYS** | **UNIT** | **STANDARDS/SKILLS** | **ASSESSMENTS**What evidence (formative/summative) is utilized to establish that the content, standards, & skills have been mastered? | **CONTENT**Topics being covered? What do students need to know? (*nouns*) | **ACTIVITIES**w/Integration of Technology & Career Ready Practices |
| September(4 weeks) | Functions, Limits, and Continuity | MA.9-12.A-SSE.AMA.9-12.F-IF.C

|  |
| --- |
| MA.9-12.N-Q |

|  |
| --- |
| MA.K-12.1 |
| MA.K-12.3 |
| MA.K-12.5 |
| MA.K-12.6 |
| MA.K-12.7 |

 | Assessment on Rates of change and limitsAssessment on LimitsAssessment on continuityAssessement on rates of change and tangent lines | Rates of changes LimitsLimits and infinityOne sided limitsTwo sided limitsFinding limitsRates of change and tangent linesNormal lines | Partner activity for finding limitsMatching activity for one and two side limits |
| October/Novermber(6 weeks) | Derivatives | MA.9-12.A-SSE.BMA.9-12.F-BF.BMA.9-12.F-IF.BMA.9-12.F-TF.AMA.9-12.G-GMD.AMA.9-12.N-RNMA.K-12.2MA.K-12.4MA.K-12.6MA.K-12.7MA.K-12.8 | Assessment on DifferentiationAssessment on Velocity and other rates of changeAssessment on chain rule and implicit differentiationAssessment on Derivatives of exponential and Logarithmic functionsMPA | Derivative of a functionPower ruleDifferentiabilityRules for differentiationQuotient ruleProduct ruleChain ruleVelocity and other rates of changeDerivative of trig functionsImplicit differentiationDerivatives of inverse trig functionsDerivatives of exponential and logarithmic functions | Matching activityInv trig and trig activityImplicit Differentiation activity |
| November/December(6 weeks) | Applications of Derivatives | MA.9-12.A-SSE.BMA.9-12.F-BF.BMA.9-12.F-IF.BMA.9-12.F-TF.AMA.9-12.G-GMD.AMA.9-12.N-RNMA.K-12.2MA.K-12.4MA.K-12.6MA.K-12.7MA.K-12.8 | Assessment on first and second derivative testsAssessment on modeling and optimizationAssessment on related ratesPractice ap multiple choice | Extreme valuesMean value theoremConnecting the graphs of the function and the first and second derivativesModeling and optimizationLinearization and Newton’s methodRelated Rates | Extreme values and concavity graphing activityOptimization projectRelated rates activity |
| January(3 weeks) | Integrals | MA.K-12.2MA.K-12.3MA.K-12.4MA.K-12.5MA.K-12.7MA.9-12.A-SSE.BMA.9-12.F-BF.BMA.9-12.F-IF.CMA.9-12.F-TF.AMA.9-12.G-GMD.AMA.9-12.G-GMD.BMA.9-12.N-RN.A | Assessment on RAM approximation methodsAssessment on the definite integralAssessment on the fundamental theorem of calculusAssessment on the trapezoidal rulePractice Ap Free responseMPA  | RAM approx. methodsDefinite integralsDefinite integrals and antiderivativesPower ruleFundamental theorem of calculustrapezoidal rule | RAM activityPower Rule discovery activity |
| February(3 weeks) | Integrals continued. | MA.K-12.2MA.K-12.3MA.K-12.4MA.K-12.5MA.K-12.7MA.9-12.A-SSE.BMA.9-12.F-BF.BMA.9-12.F-IF.CMA.9-12.F-TF.AMA.9-12.G-GMD.AMA.9-12.G-GMD.BMA.9-12.N-RN.A | Assessment on slope fieldsAssessment on integration by substitutionAssessment on integration by partsAssessment on exponential growth and decayPractice ap Free response | Antiderivatives and slope fields.Integration by substationIntegration by partsExponential growth and decayPopulation growthNumerical methods | Exponential growth and decay activityU-substitution activitySlope field and functions matching activity |
| March(3 weeks) | Applications of integrals | MA.K-12.2MA.K-12.3MA.K-12.4MA.K-12.5MA.K-12.7MA.9-12.A-SSE.BMA.9-12.F-BF.BMA.9-12.F-IF.CMA.9-12.F-TF.AMA.9-12.G-GMD.AMA.9-12.G-GMD.BMA.9-12.N-RN.A | Assessment on Areas in the planeAssessment on VolumesMPA | Integral as a net changeAreas in the planeVolumes and shellsLengths of Curves | Ti-nspire RAM activityVolume of disks activityAreas in a plane function matching.Increasing/decreasing functions and over/under estimation activity. |
| March/April(3 weeks) | Applications of integrals: L’hopital’s rule, improper integrals, and partial fractions | MA.K-12.2MA.K-12.3MA.K-12.4MA.K-12.5MA.K-12.7MA.9-12.A-SSE.BMA.9-12.F-BF.BMA.9-12.F-IF.CMA.9-12.F-TF.AMA.9-12.G-GMD.AMA.9-12.G-GMD.BMA.9-12.N-RN.A | Assessment on Rates of GrowthAssessment on improper integrals | L’Hopitals ruleRelative rates of growthImproper integralsPartial Fractions and integral Tables | Integral Tables activity |
| April/May(3 weeks) | Review for the ap exam | MA.K-12.2MA.K-12.3MA.K-12.4MA.K-12.5MA.K-12.7MA.9-12.A-SSE.BMA.9-12.F-BF.BMA.9-12.F-IF.CMA.9-12.F-TF.AMA.9-12.G-GMD.AMA.9-12.G-GMD.BMA.9-12.N-RN.A | Practice ap exams(at least 3)(2014, 2016, 2017) | All topics covered throughout the entire year | Practice ap multiple choicePractice ap free responseJeopardy review game |
| May/June(3 weeks) | Post Ap Exam | MA.K-12.2MA.K-12.3MA.K-12.4MA.K-12.5MA.K-12.7MA.9-12.A-SSE.BMA.9-12.F-BF.BMA.9-12.F-IF.CMA.9-12.F-TF.AMA.9-12.G-GMD.AMA.9-12.G-GMD.BMA.9-12.N-RN.A | End of year project to cover concepts taught all year.  | All topics covered throughout the entire year | Lantern ProjectBoard gameFlash cardscollage |
|  |  |  |  |  |  |