Cobb County School District

MATHEMATICS

Calculus Teaching & Learning Framework					
Semester 1			**Semester 2**		
Unit 1 4 weeks	**Unit 2** 5 weeks	**Unit 3** 9 weeks	**Unit 4** 8 weeks	**Unit 5** 8 weeks	**Unit 6** 2 weeks
Exploring Limits and Continuity **C.FGR.2**	**Establishing and Using Derivative** **C.FGR.3**	**Applications of Derivatives** **C.FGR.4**	**Fundamental Theorem of Calculus in Action** **C.GSR.5**	**Application of Integrals** **C.PAR.6**	**Culminating Project-Based Learning Unit**
C.FGR.2.1 (Estimate limits) **C.FGR.2.2** (Find limits) **C.FGR.2.3** (Asymptotic behavior) **C.FGR.2.4** (Limits of rational functions) **C.FGR.2.5** (Continuity) **C.FGR.2.6** (Intermediate Value Theorem)	**C.FGR.3.1** (Interpret the derivative) **C.FGR.3.2** (Differentiability & continuity) **C.FGR.3.3** (Derivative representations) **C.FGR.3.4** (Find derivatives) **C.FGR.3.5** (Find derivatives of relations) **C.FGR.3.6** (Calculate higher-order derivatives)	**C.FGR.4.1** (Calculate slope) **C.FGR.4.2** (Linear approximation) **C.FGR.4.3** (Identifying intervals) **C.FGR.4.4** (Inflection & concavity) **C.FGR.4.5** (Compare characteristics) **C.FGR.4.6** (Mean Value Theorem) **C.FGR.4.7** (Extreme Value Theorem) **C.FGR.4.8** (Local & absolute extrema) **C.FGR.4.9** (Model rates of change)	**C.GSR.5.1** (Riemann sums) **C.GSR.5.2** (Limit of Riemann sums) **C.GSR.5.3** (Exact value of definite integrals) **C.GSR.5.4** (Properties & definite integrals) **C.GSR.5.5** (Fundamental Theorem of Calculus) **C.GSR.5.6** (Fundamental Theorem of Calculus to indefinite integrals) **C.GSR.5.7** (Apply integration)	**C.PAR.6.1** (Find a particular curve) **C.PAR.6.2** (Solve separable differential equations) **C.PAR.6.3** (Apply definite integrals) **C.PAR.6.4** (Explain problems with models)	**All Standards**
Units contain tasks that depend upon the concepts addressed in earlier units. Mathematical standards are interwoven and should be addressed throughout the year in as many different units and tasks as possible in order to stress the natural connections that exist among mathematical topics.					
The Framework for Statistical Reasoning, Mathematical Modeling Framework, and the K-12 Mathematical Practices should be taught throughout the units.					
Key for Course Standards: FGR: Functional and Graphical Reasoning, GSR: Geometric and Spatial Reasoning, PAR: Patterning and Algebraic Reasoning					