Birmingham City Schools

PreAP -PRECALCULUS

Suggested PACING GUIDE

Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Activity
1	• Classroom Rules & Regulations • Policies & Procedures • Course Curriculum / Syllabus LTF Activity: Interval Notation (Precal)		
2	• Pre-Assessment		
3 & 4	1.2 Functions and Their Properties		
5	LTF Activity: - *Describing Graphs (Precalculus)*		
6	1.3 Twelve Basic Functions LTF Activity: *Characteristics of Functions (Algebra 2)*		
7	1.3 Twelve Basic Functions *(cont.)*		
8 & 9	1.6 Graphical Transformations *Review of Basic Graphs and Transformations*		

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
10	LTF Activity: A Generic Function *(Precalculus)*	[N-CN3]	
11	*Assessment: Lessons 1.2, 1.3 & 1.6* *(Include LTF Assessments)*	[F-BF1c]	
12 & 13	1.4 Building Functions from Functions Note: Supplement Using "Precalculus *Enhanced with Graphing Utilities* by Sullivan 3rd Edition *p87, 96 #'s 13-20; p 99 #'s 73-78; p 124 #'s 59 - 66*]	ACOS 22 [F-BF1c]	
14	1.5 Parametric Relations and Inverses (Skip Parametric Equations until Section 6.3)	ACOS #23, 24 [F-BF4c]	
15	LTF Activity: A Composition of Functions *(Algebra II)*	ACOS #'s 22, 23, 25	LTF Activities: 1. Composition of Functions Graphically *(Algebra II)* 2.Composition of Functions Explorations *(Algebra II)* 3.Graping from the inside out composition of Functions *(Precalculus)*
16	1.7 Modeling with Functions Stress Application of Domain and Range & The use of Technology		
17 & 18	Assessment – Lessons 1.4, 1.5, 1.7 (Include LTF Assessments)		Chapter Project Due "Modeling the Growth of a Business"
19	2.1 Linear and Quadratic Functions and Modeling *(Only Average Rate of Change)*		

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
20	LTF Activity: Investigating Average Rate of Change *(Algebra II)* ***Fall AHSGE - Scheduled***		
21	2.3 Polynomial Functions of Higher Degree with Modeling *(End Behavior & Intermediate Value Theorem - Using problems 25 - 28)* ***(Pull in IVT Problems)*** ***Fall AHSGE - Scheduled***		
22 & 23	LTF Activity: Is There a Solution or Not? ***Fall AHSGE - Scheduled***		
24	2.6 Graphs of Rational Functions ***Fall AHSGE - Scheduled***	ACOS #21 [F-1F7d]	LTF Activity: *Rational Functions with Removable Discontinuity *(Algebra II)* *Rational Functions – Long Run Behavior *Rational Functions – Short Run Behavior *Transformations of Rational Functions *Rational Functions and Their Asymptotes *(Precalculus)* *RAT^{2}EY *(Precalculus)* *Horizontal, Slant and Oblique Asymptotes
25	LTF Activity: End Behavior of Rational Functions(Precalculus)		*Assign Class *Project* from Chapter 3: Analyzing a Bouncing Ball & Collecting the Data *p. 318*
Midpoint Ends / Progress Reports			
26	Assessment – Lessons 2.1, 2.3, 2.6 (Include LTF Assessments)		

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
27 & 28	3.1 Exponential and Logistic Functions	ACOS #28, [F-BF5]	
29	3.1 Exponential and Logistic Functions *(cont.)*	ACOS #28, [F-BF5]	
30	3.3 Logarithmic Functions and Their Graphs	ACOS #27,28 [F-BF5]	LTF Activities: Exponential Growth and Decay (Algebra II) Solving Systems of Exponential, Logarithmic, and Linear Equations (Algebra II) "E"xponential Growth (Precalculus)
31	3.3 Logarithmic Functions and Their Graphs *(cont.)*	ACOS #27,28 [F-BF5]	
32 & 33	3.4 Properties of Logarithmic Functions	ACOS 28	
34	LTF Activity: Exponential and Natural Logarithmic Functions(Precalculus)		
35	3.5 Equation Solving and Modeling LTF Activity: Newton's Law of Cooling		
36	Review		

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37 & 38	**ASSESSMENT:** Sections 3.1,3.3-3.5 (Include LTF Assessments)		
39	7.1 Solving Systems of Two Equations		*Assign Class *Project* from Chapter 7: "Male and Female Population Data" *p. 577*
40	7.2 Matrix Algebra	ACOS # 11–17, 19 [A-RE19], [N-VM6 – VM12]	
41	7.3 Multivariate Linear Systems and Row Operations	ACOS #18 [A-RE18]	
42 & 43	7.3 Multivariate Linear Systems and Row Operations *(cont'd)*	ACOS #18 [A-RE18]	
44	Review		
45	Assessment: 7.1-7.3		
46	**9 WEEKS ASSESSMENT REVIEW:** P.1 - 3.3		
47 & 48	**1ST 9-WEEKS EXAM SCHEDULED**		

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
49			
MIDPOINT ENDS / PROGRESS REPORT DUE			
50			*Assign Class *Project* from Chapter 2: Modeling the Height of a Bouncing Ball *p. 250*
51 & 52	2.5 Complex Zeros and the Fundamental Theorem of Algebra	[N-CN3]	
53	**A.3 FRACTIONAL EXPRESSIONS** (Domain of an Algebraic Expressions, Operations with Rational Expressions, Compound Rational Expressions)		
54			
55			
56 & 57			

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
58			
59			
60 & 61			
62			
63			
64			
65			
66			
67 & 68			
MIDPOINT ENDS / PROGRESS REPORT DUE			
69			

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
70	***Winter AHSGE - Scheduled***		
71	***Winter AHSGE - Scheduled***		
72 & 73	***Winter AHSGE - Scheduled***		
74	***Winter AHSGE - Scheduled***		
75			
76			
77 & 78			
79	*Pre-Calculus Menu Activity* ***LTF: Transformation Activity***		
80	*Pre-Calculus Menu Activity (Due)* ***LTF: Transformation Activity***		
81	4.1 Angles and Their Measure (Relationships Between Degrees and Radians)		**Exploration Activity #1** *"Constructing a 1-Radian Angle"*
82 & 83	4.1 Angles and Their Measure *(cont'd)* 4.2 Trigonometric Functions of Acute Angles	[F-TF3]	

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
84	4.2 Trigonometric Functions of Acute Angles *(cont'd)* **LTF ACTIVITY: TRIG RATIOS**		
85 & 86	**CUMULATIVE REVIEW**		
87	**CUMULATIVE REVIEW**		
88	**Semester Exams: 2nd, 4th & 6th Periods**		
89	**Semester Exams: 1st, 3rd & 5th Periods**		
90 & 91	**Semester Exams: 7th Period & *Make-up*** **FIRST SEMESTER ENDS**		
Second Semester Begins – January 2013			
92	4.2 Trigonometric Functions of Acute Angles *(Review)*		
93	4.3 **Trigonometry Extended:** The Circular Functions	[F-TF3], [F-TF4]	**Exploration 2:** "*Exploring the Unit Circle*"
94	4.3 **Trigonometry Extended**: The Circular Functions *(cont'd)*		*Assign Class *Project* from Chapter 4: Modeling the Motion of a Pendulum *p. 402*
95 & 96	4.4 Graphs of Sine and Cosine Sinusoids	ACOS #29, [F-TF6]	
97	4.5 Graphs of Tangent, Cotangent, Secant, and Cosecant	ACOS #29, [F-TF6]	

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
98	4.5 Graphs of Tangent, Cotangent, Secant, and Cosecant *(cont'd)*		
99 & 100	**ASSESSMENT - LTF ACTIVITY *(TEACHER'S CHOICE)*:** **1.** Window Pane Graphing of Trigonometric Functions **2.** Analyzing Trigonometric Functions Using Graphical Displays		
101	4.6 Graphs of Composite Trigonometric Functions		Class Activity: "*The Unit Circle Project*"
102	4.6 Graphs of Composite Trigonometric Functions *(cont'd)*	[F-TF7]	
103	4.7 Inverse Trigonometric Functions **(DON'T DISCUSS INVERSES GRAPHICALLY)**	ACOS #26	
104 & 105	4.7 Inverse Trigonometric Functions *(cont'd)* **(DON'T DISCUSS INVERSES GRAPHICALLY)**	ACOS #26	
106	4.8 Solving Problems with Trigonometry		
107	4.8 Solving Problems with Trigonometry *(cont'd)*		
108	**ASSESSMENT: SECTIONS 4.6-4.8**		*Class *Project* from Chapter 4: ***Due***

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
109 & 110	5.1 Fundamental Identities		*Assign Class *Project* from Chapter 5: Modeling the Illumination of the Moon *p. 454*
111	5.2 Proving Trigonometric Identities		
112	5.2 Proving Trigonometric Identities *(cont'd)*		
113	5.3 Sum and Difference Identities	ACOS #30, [F-TF9]	
114 & 115	5.4 Multiple Angle Identities	ACOS#30	
116	**ASSESSMENT: SECTIONS 5.1-5.4**		
117	5.5 The Law of Sines		
PROGRESS REPORTS GO HOME			
118 & 119	5.5 The Law of Sines *(cont'd)* 5.6 The Law of Cosines		*Class *Project* from Chapter 5: ***Due***
120	5.6 The Law of Cosines *(cont'd)*		
121	**ASSESSMENT: CHAPTER 5**		
122	6.1 Vectors in the Plane	[N-VM1], [N-VM2], [N-VM3], [N-VM4], [N-VM5]	

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
123 & 124	6.2 Dot Product of Vectors **LTF ACTIVITY:** Motion Defined Parametrically	[N-VM1], [[N-VM3], [N-VM4], [N-VM5]	
125	6.3 Parametric Equations and Motion **LTF ACTIVITY:** Slopes of Curves **LTF ACTIVITY:** Parametric Equations	ACOS #20, #30	
126	6.4 Polar Coordinates	[N-CN4]	
127	**ASSESSMENT: SECTIONS 6.1-6.4** 6.5 Graphs of Polar Equations	[N-VM4], [F-TF4]	
128 & 129	6.5 Graphs of Polar Equations *(cont'd)* **LTF ACTIVITY:** 1. Graphing Polar Equations 2. Special Points on Polar Curves and Intersections of Two Polar Curves		
130	6.6 De Moivre's Theorem and nth Roots	[N-CN3], [N-CN4], [N-CN5], [N-CN6]	
131	6.6 De Moivre's Theorem and nth Roots *(cont'd)*		
132	**ASSESSMENT: CHAPTER 6**		
133 & 134	8.1 Conic Sections and Parabolas	ACOS #20, [G-GPE2]	
135	8.2 Ellipses **EXPLORATION 1** • Graphing an Ellipse Using Its Parametric Equations *p.595*	ACOS #20, [G-GPE3]	

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
REPORT CARD PERIOD ENDS			
136	8.2 Ellipses *(cont'd)* **LTF ACTIVITY MODULE 2:** "Cone Exploration and Optimization"		
137	8.3 Hyperbola	ACOS #20, [G-GPE3]	
138 & 139	8.4 Translations and Rotation of Axes **ASSESSMENT: SECTIONS 8.1-8.3**		
140	8.5 Polar Equations of Cosines		
141	8.5 Polar Equations of Cosines *(cont'd)*		
142	8.6 Three-Dimensional Cartesian Coordinate System	[G-GMD2]	
REPORT CARDS GO HOME			
143 & 144	8.6 Three-Dimensional Cartesian Coordinate System *(cont'd)*		
145	**ASSESSMENT: CHAPTER 8**		
146	9.1 Basic Combinatorics		

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
147	9.2 The Binomial Theorem **Exploration 1:** "*Exploring the Binomial Coefficient" p 652* *Do Exploration Problems		
148 & 149	9.2 The Binomial Theorem *(cont'd)* **LTF ACTIVITY:** "Binomial Theorem"		
150	9.3 Probability **Exploration 1:** "*Testing Positive for HIV" p 664* *Do Exploration Problems	[S-MD1], [S-MD2], [S-MD3], [S-MD4], [S-MD5]	
151	**ASSESSMENT: SECTIONS 9.1-9.3**		
152	9.4 Sequences	ACOS #5, #31	
153 & 154	9.5 Series		
155	Computer Web Activity: "Series and Sequences" 9.6 Mathematical Induction		
156	**ASSESSMENT: SECTIONS 9.4-9.5**		
157	9.7 Statistics and Data (Graphical)		
158 & 159	9.8 Statistics and Data (Algebraic) **LTF ACTIVITY:** Curvilinear Data-Activity 2		Assign: "*Statistical Project Based Activities"*

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
160	9.8 Statistics and Data (Algebraic) *(cont'd)* **Exploration 1:** Interpreting Histograms *p 708*		*Class *Project* from Chapter 9: ***Due***
161	9.9 Statistical Literacy		
162	**ASSESSMENT: CHAPTER 9**		
163 & 164	10.1 **Limits and Motion:** The Tangent Problem		See page 16 for additional information on limits.
165	**LTF ACTIVITY:** Slopes of Secants Lines and Limits		
166	10.2 **Limits and Motion:** The Area Problem		
167	10.2 **Limits and Motion:** The Area Problem *(cont'd)*		
168 & 169	**ASSESSMENT:** Sections 10.1-10.2		
170	**LTF ACTIVITY:** Logistic and Gompertz Curves		
171	10.3 More on Limits		
172	10.3 More on Limits *(cont'd)*		

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Day/Number	LESSON PLAN	Alabama & Common Core Course of Study Objectives	Optional Activity
173 & 174	10.4 Numerical Derivatives and Integrals		
175	**ASSESSMENT: CHAPTER 10** **CUMULATIVE REVIEW FOR SEMESTER EXAM**		
176	**1ST, 3RD & 5TH PERIODS** **SEMESTER EXAM**		
177	**2ND, 4TH & 6TH PERIODS** **SEMESTER EXAM**		
178	**7TH PERIOD & MAKE-UP** **SEMESTER EXAM**		
179	**2ND SEMESTER & REPORT CARD PERIOD ENDS**		
180	**TEACHER WORKDAY**		

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Chapter 10: An Introduction to Calculus: Limits, Derivatives, and Integrals

Additional Reference Source: Precalculus by Michael Sullivan

	Lesson	Alabama & Common Core Course of Study Objectives	
	13.1 Finding Limits Using Tables and Graphs		
	13.2 Algebra Techniques for Finding Limits		
	13.3 One-Sided Limits; Continuous Functions *Do Algebraically and Graphically	4, 9, 10	
	13.4 The Tangent Problem; The Derivative		
	13.5 The Area Problem; The Integral		