Ashley College Curriculum	Subject: Mathematics					Teacher: Kader Benamara	
	Brief/ Heading from subject LTPs						
Groups	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**	**Subject Intent**	**Syllabus/ exam board qualification Suggested reading/text books**
KS3	Unit 1 Number properties and calculations Unit 2 Sequences and equations **Black history links** **Assign research projects about Black Mathematicians**	Unit 3 Statistics **Look at examples related to gender inequality and discuss why this is still an issue.** Unit 4 Fractions, decimals and percentages	Unit 5 Geometry in 2D and 3D Unit 6 Algebraic and real-life graphs	Unit 7 Multiplicative reasoning. **Explore Famous female Mathematicians and Scientists.**	Unit 8 Algebraic and geometric formulae **History of Maths:** **Who is the real founder of algebra?** Unit 9 Probability	Unit 10 Polygons and transformations	In Maths we meet the curriculum aims of the College by: • Systematic building of knowledge, sequenced to aid understanding alongside the skills to achieve the best outcome. • Lessons are planned in a way to ensure knowledge is retained in long term memory and then can be retrieved in the future.	**Syllabus/ exam board qualification** Exam board: Edexcel GCSE (9–1) in Mathematics (1MA1) **Resources:** Personalised Century tasks MyMaths (Interactive lessons), Past papers questions (CW and HW). 5-a-day Foundation Tier Themed Papers, Edexcel GCSE (9-1) Mathematics, Foundation/higher revision Book (mainly used at home for reference)
Cross Curricular References	**Computing:** Social impact of ICT **Food:** Timing Calories **Science:** Waves and energy transfer	**Science:** Variation for survival Working out the relative cost of mining and recycling. The representation of a journey on a distance–time graph **Computing:** Gaming and augmented reality Presentation & spreadsheets Interpreting results **History:** The causes of the first world war **Food**: Calories Age range	**Computing:** Referencing presentation Search methods Building a model **Art:** Theme: Pattern (William Morris/ Islamic Art 3D design Figurative Theme: Hands of Life Painting	**Science:** The effects of 'recreational' drugs (including substance misuse) on behaviour, health and life processes	**Science:** Waves on Water (predict the outcome of an experience) **History:** Migration to Britain (Predict what next?) **Science:** Speed and the quantitative relationship between average speed, distance and time (speed = distance ÷ time)	**Art:** (William Morris/ Islamic Art 3D design Patterns (Spr 1 &2) Theme: Pop Art	• Links are made to cultural capital as well as across different subjects' areas. The curriculum is made relevant to learners and the world around them. • Reading is built into the framework to facilitate how to understand and answer maths questions. • Ensuring that all examples are gender equal and involves names from different	
Ongoing gap analysis and low stakes quizzes and interleaved learning tasks to support retrieval throughout the academic year for all year groups.								

KS4	**Yr10**	Unit 1 Number Unit 2 Algebra History of Maths Who is the real founder of algebra? Unit 3 Graphs, tables and charts Black history Explore Famous Black Mathematicians and Scientists	Unit 3 Graphs, tables and charts (continued) Unit 4 Fractions and percentages Unit 5 Equations, inequalities and sequences	Unit 6 Angles Unit 7 Averages and range Compare the average salary of men and women in the UK and discuss pay inequality Unit 8 Perimeter, area and volume 1	Unit 9 Graphs Unit 10 Transformations	Unit 11 Ratio and proportion Unit 12 Right-angled triangles Unit 13 Probability	Unit 14 Multiplicative reasoning Unit 15 Constructions, loci and bearings	cultures, religions and ethnicity.	**Curriculum Implementation** At Ashley College, our Maths curriculum implementation is built on these 4 principles from cognitive science: 1) What we know influences how quickly and how well we learn new knowledge. Therefore, in maths we: • Use the do it now task e.g. 5-a-day to recall prior knowledge. • Use low stakes assessments to check learning at the end of a unit and respond to any gaps. • Plan the curriculum map over the KS3 and 4 to ensure regular revisiting and building on each area of Maths. 2) We learn what we think about – "memory is the residue of thought". Therefore, in maths we: • Provide challenging work for all our students including opportunities to apply knowledge in new contexts and combine mathematical ideas. • Understand that new knowledge is hard at first, so we scaffold for understanding; thinking hard about something keeps it in your memory. 3) Our working memory is limited when learning new information. Therefore, in maths we: • Use our do it now tasks e.g. 5-a-day to recall key information in every lesson, including pre-requisite skills. • Use examples broken down into small steps. • Use I do, we do, you do to model new concepts. 4) Fluency arises through practice over time. Therefore, in maths we: • Use Sparx Maths to ensure independent practice of recent learning takes place each week. • Use the do it now tasks to recall key skills in every lesson. • One lesson fortnightly is spent addressing the areas for development identified by Sparx Maths and practice these skills.
	Cross Curricular References	**PSHCE** Autumn 1 – revision timetables Spring - Crime statistics **English** Time calculations for exam Unit 1 number **Science** Microscopes and structure of atom – standard form – links to number Algebra – wave formula – period of a wave formula Graphs link to atomic structures Tables (latent heat) States of matter Atomic structure **Food** Weighting and measuring Number Eatwell Plate	**Science** Changes in earth's atmosphere – graphs Equations – links to maths – same process and chemical quantities and periodic tables, mathematical calculations in moles and bound energies. Avogadro constant – atoms. **PSHCE** Percentages for contraception **Food** Macronutrients Autumn 1 and 2	**Science** Practical results every term use mean and range **Drama** Stage positioning **English** 19th century texts – figures relating to mortality and poverty **Food** Measuring volume of liquid every time – ml or litre and use of measuring jugs which links to density in **Science** tonne of feathers/lead/density Rate of reaction and surface area – e.g. fat chips are healthier Autumn 1 and 2 and melting and summer 1 in Science – angles resultant forces Spring 1 also. Angles SOCAHTOA Summer 1 – Parallax angles **Horticulture**	**Art** Transformations Pattern and Interior design Spring 2 **Science** Enlargements – doubling size Straight line graphs, direct proportionality to make predictions throughout year (Hook's Law) half-lives – radioactivity – speed, distance, time	**Food** ingredient choices and recipes 1.1 plan a nutritious two-course meal 2.1 select and prepare ingredients for recipes for a nutritious, two course meal **Science** States of matter Atomic structure Waves The periodic table Chemical quantities	**Science** UNIT 4 (Year 11) Explaining change The Earth's atmosphere UNIT 7 (Year 11) Movement and interactions Forces and Motion		

		English Graphs – crime statistics opportunity (spring 2)		Planting out area/per metre					
	Yr11	Unit 10 Transformations Unit 11 Ratio and proportion Unit 14 Multiplicative reasoning Unit 16 Quadratic equations and graphs Unit 17 Perimeter, area and volume 2 Black history Identify the Mystery Mathematician	Unit 17 Perimeter, area and volume 2 (Continue) Unit 18 Fractions, indices and standard form Unit 19 Congruence, similarity and vectors Unit 20 More algebra	Unit 20 More algebra (continue) Revision ad practice papers with focus on geometry, measures and probability	Revision ad practice papers with focus on statistics and Ratio, proportion and rates of change	Revision ad practice papers with focus on number and algebra	Final GCSE Exams		
	Cross Curricular References	Sciences Radiation and risk Unit 3 (Year 10) English/Literacy: Word of the week	Sciences **UNIT 6 (year 10) Interactions over small and large distances** UNIT 7 Movement and interactions Forces and Motion Atoms and ions English/Literacy: Word of the week	Sciences UNIT 7 Electricity Unit4 Ecosystems and biodiversity English/Literacy: Word of the week	English Spoken Language Presentations (Non-exam assessment) English/Literacy: Word of the week Command words: Show that, prove, Evaluate, explain why he/she is correct/wrong, identify, name.	English Planning within a time limit. English/Literacy: Word of the week Command words: Show that, prove, Evaluate, explain why he/she is correct, identify, name.	English/Literacy Word of the week Command words: Show that, prove, Evaluate, explain why he/she is correct, identify, name.		