

Secondary Maths Department Action Plan including NAP 2018-19

1 STUDENTS ATTAINMENT, PROGRESS AND LEARNING SKILLS (PS1)				Leader: Head of Departments, SID Line Manager: HOS Achievement Governor: LAB member External Evaluator: Vice President-GEMS		
Prioritised Objectives	Actions	Time Frame	Resources	Success Criteria	Monitoring & Evaluation	Impact
<p>To raise Year 7 TIMSS: Addressing gaps in knowledge:</p> <ul style="list-style-type: none"> ➤ To use several sources to solve problems involving different types of numbers and operations. ➤ To solve a variety of fractions proportions and percentage problem and justify their conclusions. <p>PISA:</p> <p>Financial Literacy Introducing financial Literacy Increased number of word problems to ensure effective interpretations, arguments and actions taken to find solutions.</p> <p>PBTS Calculation of Area, Scale mapping and percentages are the identified gaps</p>	<p>Year 7</p> <p>☐ Annotation of Curriculum</p> <ul style="list-style-type: none"> ➤ Further to strengthened the identified gaps from the TIMSS /PBTS/PISA results of 2015 : <ul style="list-style-type: none"> → Example: In Year 7 – Students must demonstrate understanding of properties of numbers and operations; find and use multiples and factors, identify prime numbers, evaluate positive integer powers of numbers, evaluate square roots of perfect squares up to 144, and solve problems involving square roots of whole numbers. Increase in number of lessons for fractions. Word problems on foreign exchange and rate. → Project based learning in Area, Scale mapping and percentages. → Plan engaging lessons using game based learning for improved self-efficacy in Mathematics → <p>In lessons:</p> <ul style="list-style-type: none"> ➤ Provision in lesson plan through starter/mid-plenaries/plenaries s to enhance students to : <ul style="list-style-type: none"> • Real life situations given to the students for better understanding of the concepts. • Analysing the word problems and application of the correct concept for solving problems. 	<p>March 2018 ongoing</p>	<ul style="list-style-type: none"> ▪ Time for PD/Modelling by outstanding practioners as needed by department /year group. ▪ Reviewed SOW, Rubrics, Student IEP, ILP sheet, Data Analysis ▪ Time for lesson observations and feedback ▪ Team teaching ▪ Moderation time and networking across phases in school and other schools 	<p>Year 7</p> <p>Majority of the students will be able to</p> <ul style="list-style-type: none"> - Challenge through real life word problems. - Analytical and evaluation skills improved - Experience more enquiry based learning approach <p>Most of the students will be able to:</p> <ul style="list-style-type: none"> - Students will be able to build confidence through practical applications to real life situations. - Students apply knowledge and communicate an understanding and analyse information provided - They apply knowledge to practical situations and communicate their understanding through brief descriptive responses. <p>Some students will be able to:</p> <ul style="list-style-type: none"> - Draw appropriate conclusions that go beyond the data and provide justifications for their choices. - Most students will demonstrate high level of critical and problem solving skills - Most students enjoy their learning leading to the enhanced instruments motivation in mathematics - 	<p>English/Math/ Science HODS and HOKS HOS, LAB members monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action</p>	<p>End of year data is secure, ongoing lesson observation data is being evaluated.</p> <p>PT scores are improving trends all year groups. Internal Attainment and External examination data trends are also improving for all year groups- including Maths Primary and Science Post -16.</p> <p>In process of ensuring, all teachers have one to one counselling with each child of end of year PT scores and new CAT4 scores.</p> <p>Increased opportunities seen for embedding 1.3.1 and 1.3.3.</p>

<p>CAT4: Teaching strategies to be based on verbal bias ranging from no bias to extreme verbal bias.</p> <p>Progress Test Maths > <u>Curriculum Content:</u> Probability and Ratio, Proportion and Rate are two identified areas to work on for the cohort of students' in Year 8 in 2018-19. Also to strengthen its consolidation in Year 7 as well in 2018-19. Fraction, directed numbers, Probability, Equation, Directed numbers, Measurement Time – Calculate time intervals & Money- Calculate change involving decimals.</p> <p>> <u>Process Category:</u> We will continue to embed our effective strategies to raise all the four mathematical processes with continued focus on mathematical reasoning and problem solving.</p> <p>Looking at the question wise analysis students need to develop clearer understanding in shapes and space using algebraic applications.</p> <p>Also word problems based on fractions and percentage.</p>	<ul style="list-style-type: none"> • Mental maths questions to be further embed throughout the lesson. • <p>➤ Effective questioning to enhance:</p> <ul style="list-style-type: none"> • Critical thinking • Reasoning skills of the students • Problem solving skills <p>➤ NAP focused Home Learning to further embed critical thinking and reasoning skills.</p> <ul style="list-style-type: none"> • PISA/TIMSS styled questions • Comprehension based question • Further deepening critical thinking and investigation skills. • Mental ability based questions 					
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<p>➤ <u>Student Wise analysis:</u></p> <p>Work on identified low stanine students, SEND and Emiratis with personalized support during break time and after school.</p> <p><u>YEAR 8:</u></p> <p><u>TIMSS:</u> Problem Solving Situation and reasoning skills To solve variety of problems involving equations formulas and function. To express generalization algebraically and model situations. To reason data from several sources or unfamiliar representation to solve multistep problems</p> <p><u>PISA:</u> Financial Literacy Students to reflect on their work and to formulate and communicate their interpretations and reasoning.</p> <p><u>PBTS</u></p>	<p><u>Year 8</u></p> <p>➤ SOW is remapped to address the gaps in TIMSS/PBTS/PISA curriculum :</p> <p>→ In Year 8: Students should be able to solve real world problems using algebraic models and explain relationships involving algebraic concepts.</p> <p>→ Functions can be used to describe what will happen to a variable when a related variable changes.</p> <p>→ Project based learning in Area, Scale mapping and percentages.</p> <p>→ Plan engaging lessons using game based learning for improved self-efficacy in Mathematics</p> <p>➤ Provision in lesson plan through starter/mid-plenaries/plenaries s to enhance students to:</p> <ul style="list-style-type: none"> - Use of the correct mathematical vocabulary (research and write the meaning on the padlet wall) - Enhancing students' mental ability to solve problems 			<p><u>Year 8</u></p> <ul style="list-style-type: none"> • Students will be able to develop the more formal written language of mathematics by correct vocabulary. • Students will be able to consolidate their understanding. • Will be able to determine, describe, or use relationships among numbers, expressions, quantities, and shapes. • Able to link different elements of knowledge, related representations, and procedures to solve problems. • Most students will demonstrate high level of critical and problem solving skills • Most students enjoy their learning leading to the enhanced instruments motivation in mathematics • 		
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<p>Calculation of Area, Scale mapping and percentages are the identified gaps</p> <p>Progress Test</p> <p>➤ Curriculum Content: Numbers, Algebra, Probability and Ratio, Proportion and Rate are two identified areas to work on for the cohort of students' in Year 8 in 2018-19. Also to strengthen its consolidation in Year 7 as well in 2018-19</p> <p>➤ Process Category: We will continue to embed our effective strategies to raise all the four mathematical processes with continued focus on mathematical reasoning and problem solving.</p> <p>➤ Looking at the question wise analysis students need to develop clearer understanding in shapes and space using algebraic applications. Also word problems based on fractions.</p> <p>➤ Student Wise analysis: Work on identified low stanine students, SEND and Emiratis with personalized support during break time</p>	<p>Effective questioning to enhance:</p> <ul style="list-style-type: none"> - Critical thinking - Reasoning skills of the students - Problem solving skills <p>➤ NAP focused Home Learning to further embed critical thinking and reasoning skills.</p> <ul style="list-style-type: none"> ● PISA/TIMSS/PTS styled questions ● Enquiry based questions ● Data based questions ● Mental maths based questions ● Further deepening critical thinking and reasoning skills. <p>➤ Evaluate learning and Assessment outcomes against international benchmark TIMSS/PISA.</p> <p>➤ Pythagoras theorem based on PTM</p>				
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<p>Year 9: TIMSS: To increase the number of students from high international benchmark to advance benchmark in TIMSS.</p> <p>PISA: Financial Literacy Students to reflect on their work and to formulate and communicate their interpretations and reasoning. To increase the number of students in level 5 & level 6 from level 3 and 4.</p> <p>PBTS Calculation of Area, Scale mapping and percentages are the identified gaps</p> <p>CAT4: Teaching strategies to be based on verbal bias ranging from no bias to extreme verbal bias. Accelerated students in Year 9.</p>				<p>Year 9</p> <ul style="list-style-type: none"> • Students will be able to identify the mathematical aspects of a problem situated in a real-world context and identifying the significant variables. • Students will translate a problem into mathematical language or a representation in scatter graph. • Will be applying mathematical facts, rules, algorithms, and structures when finding solutions of word problems. <ul style="list-style-type: none"> ▪ Large majority of students in phase 2 achieve above curriculum standards in Maths and most students in phase 2 make better than expected progress from their starting points. ▪ Most students in Phase 4 achieve above curriculum standard in Science in lessons and overtime. ▪ Most students across all phases have secure knowledge of their starting points through regular self-marking using rubrics and reflection of their own PT and CAT4 results along with internal school assessments. ▪ Large Majority of students demonstrate strong independent learning skills with sustained responsibility to apply their learning to real life and make connections between areas of learning for deeper meaningful learning. <ul style="list-style-type: none"> • Most students will demonstrate high level of critical and problem solving skills • Most students enjoy their learning leading to the enhanced instruments motivation in mathematics 		
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<p>Students with high spatial and non-verbal scores are being given provisions in lessons. High verbal scores students are given word problems.</p> <p>Progress Test</p> <p>> Curriculum Content: Numbers is the identified areas to work on for the cohort of students' in Year 10 in 2018-19. Also to strengthen its consolidation in Year 9 as well in 2018-19 we will focus on algebra, probability and geometry and measures.</p> <p>> Process Category: We will continue to embed our effective strategies to raise all the four mathematical processes with continued focus on mathematical reasoning and problem solving.</p> <p>> Looking at the question wise analysis students need to develop clearer understanding in shapes and space using algebraic applications. Also word problems based on fractions.</p> <p>> Student Wise analysis: Work on identified low stanine students, SEND and Emiratis in year 10 with personalized support during break time</p>	<p>Year 9</p> <p>> Annotation of SOWs to accommodate TIMSS/PISA/PBTS Gaps :</p> <ul style="list-style-type: none"> • interpreting, applying and evaluating mathematical outcomes related to scatter graph and word problems • Revisiting geometry and its measures • Project based learning in Area, Scale mapping and percentages. • Plan engaging lessons using game based learning for improved self-efficacy in Mathematics • • <p>In lessons:</p> <p>> Provision in lesson plan through starter/mid-plenaries/plenaries to enhance students to :</p> <ul style="list-style-type: none"> • Explanation of financial literacy. • Apply financial knowledge and skill to real life situations • Enhancing students' mental ability to solve problems 					
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<ul style="list-style-type: none"> ▪ Math Attainment in Phase 2 to VG and Progress in Phase 2 to O. ❖ To embed learning skills consistently across phase 2 and 3 with greater focus on 1.3.1 and 1.3.3. 	<ul style="list-style-type: none"> • Practicing more mental maths in classes ➤ Effective questioning to enhance: <ul style="list-style-type: none"> • Critical thinking • Reasoning skills of the students • Problem solving skills ➤ NAP focused Home Learning to further embed critical thinking and reasoning skills. <ul style="list-style-type: none"> • PISA/TIMSS styled questions • Comprehension based question • Planning • Investigation based questions • Data based questions • Further deepening critical thinking and reasoning skills. • Mental ability based questions □ Evaluate learning and Assessment outcomes against international benchmark TIMSS/PISA. □ Reading: Encourage and embed the habit of reading in students. ▪ Build rigour in critical analysis of text in English to raise verbal reasoning and skilfully respond to unfamiliar texts from a range of sources. ▪ Extend students' interpretation and applications skills of mathematical concepts in integrated and diverse real life and/or unfamiliar context with continuous focus on Mental Maths, Algebraic and Geometric skills across all phases. ▪ Enrich students' epistemic scientific acquisition and application skills with high level of challenge especially in Post -16. ▪ Strengthen students' learning skills through: extended independent research and enquiry based learning with sustained responsibility and ensure most students have secure knowledge of their starting points and diligently work to ensure better than expected progress. 				
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2. QUALITY OF TEACHING AND ASSESSMENT (PS3)				Leader: MLs and SID Line Manager: HOS Achievement Governor: Parent, Student, and GEMS - LAB members External Evaluator: VP		
Prioritised Objectives	Actions	Time Frame	Resources	Success Criteria	Monitoring & Evaluation	Impact
<ul style="list-style-type: none"> ▪ To embed consistency in outstanding teaching and assessment practices across school and raise Phase 4 Teaching to Outstanding. ▪ To ensure all teachers across phases have secure understanding of assessment data and use it most effectively for plan and deliver to meet the needs of all students. ▪ To enhance personalised support and challenge for all groups of students. 	<ul style="list-style-type: none"> ▪ Embed systems to share outstanding high quality teaching thus build consistency in high standard of T&L across all phases. Regular practices across all subjects to share outstanding learning in lessons (videos, work samples, peer observations). ▪ All teachers across the school to have at least one paired observation with a senior or middle leader to establish clarity on good or better learning in lessons. ▪ Ensure that most teachers have secure understanding and effectively use all internal and benchmark data to personalise support and appropriate challenge for all students from their starting points to meet their specific needs and make better than expected progress ▪ All identified acceptable and good teachers have IPP and timetabled support to raise T&L and effective personalisation based on data in their lessons. ▪ Embed outstanding AfL strategies and build rigour in moderation of assessments and measuring progress in lessons through effective use of rubrics and high quality diagnostic feedback. ▪ Share the outstanding practices and rigorously monitor provision in lessons to ensure consistent implementation of social model of disability, securing instructional accommodations support and assistive technologies as needed for SEND students. ▪ Ensure all assessment data and lesson observation is used most effectively to identify all students who are academically G and T in Phase 2 and 3. ▪ Ensure high levels of personalised challenge, enrichment, extension and acceleration opportunities for G and T students in all lessons. 	<p>March 2018 ongoing</p>	<p>Monitoring forms, IPPs modelling, peer observation , team teaching.</p> <p>PD sessions on effective use of data for impactful personalisation.</p> <p>Regular and rigorous data analysis.</p> <p>PD and sharing best practices on effective personalisation and appropriate challenge IEPs, ALPs, TLPs, ILPs.</p>	<ul style="list-style-type: none"> ▪ Most teachers confidently and consistently deliver Very good with outstanding features or better lessons with enhanced personalisation and challenge based on effective use of all data enabling excellent progress for all groups of students from their starting point especially in Phase 4. ▪ Almost all teachers made progress and achieved their targets identified in IPP and rigorous support in place. ▪ All groups of students make outstanding progress in most lessons due to personalised support and stretched challenge to maximise their potential across all phases. ▪ All G&T students identified with rigorous and effective use of data and lesson observations. ▪ Almost all G&T students are effectively engaged and challenged in lessons and make progress from their starting points. 	<p>HODS and HOKS HOS, LAB members monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action.</p> <p>SENDCo, HODs, HOKS and HOS monitor the provision through lesson observations, Book looks, personalised lesson plans, IEPs -termly with prompt action</p> <p>HODs, HOKS, DHOS and VP to accurately identify and monitor the provision for G&T through lesson observations, Book looks, personalised lesson plans, ALPs, TLPs- termly with prompt action</p>	<p>All teachers will complete paired observation with either senior or middle leader by end of term1. Very positive feedback on deeper understanding of good or better lessons and how to look for and ensure learning / progress in lesson.</p> <p>Understanding of all data is getting deeper, however use of data to personalize is variable and support is being put in place promptly. Ongoing monitoring and support.</p> <p>SEND and G&T lists under review again after CAT4 assessments and 6 weeks of induction for all students.</p>

3. LEADERSHIP AND MANAGEMENT (PS6)					Leader: Heads of Schools, MSO, H&S officer and Vice Principal Line Manager: Principal Achievement Governor: LAB Governors External Evaluator: VP	
Prioritised Objectives	Actions	Time Frame	Resources	Success Criteria	Monitoring & Evaluation	Impact
<ul style="list-style-type: none"> To raise Effectiveness of Leadership and Self Evaluation and improvement planning to outstanding. 	<ul style="list-style-type: none"> To embed systematic and rigorous self – evaluation using both internal and external data and all priorities to be accurately identified and analysed. To ensure all action plans are more coherent and focused across school and SEF is more precise and celebratory. School improvement plans to include extensive strategic and operational actions, which promote innovative and creative solutions to National and school priorities. Build rigour and consistency in accurate evaluation and monitoring of actions and priorities of school improvement plan to ensure accurate evaluation of teaching and learning in relation to students’ achievements. Innovative and creative solutions to ensure the provision of Art and Music 	March 2018 ongoing	Training for secure and accurate Self Evaluation and writing of SEF- Precise and celebratory, Training for all leaders, sharing outstanding samples of SEF and action plans.	<ul style="list-style-type: none"> All priorities identified including feedback from all stakeholders Accurate, precise and celebratory SEF. School knows its strengths and areas of weaknesses exceptionally well and effective actions are taken to ensure impact. Rigorous Monitoring – paired observations and impact evaluation by leaders at all levels enabling improved student outcomes across all phases. Outstanding exam results for June 2018 and continued improvement over time and improving trends of PT results. Art and Music provision enhanced across all phases. 	SLT and MLs	<p>All operational actions almost implemented. Strategic actions like paired observations, Individual progress Plan are ongoing and rigour in monitoring impact and prompt support is enabled.</p> <p>Positive outcomes of all the rigour and monitoring has improved T&L and use of assessment data hence, outstanding student outcomes.</p> <p>Work in progress now for new cohort for 2018-19 and rigour in place for monitoring highest standards and support in place.</p>