

Secondary Science Department Action Plan including NAP 2018-19

1 STUDENTS ATTAINMENT, PROGRESS AND LEARNING SKILLS (PS1)				Leader: Head of Department and Second In Department Line Manager: Head of Secondary Achievement Governor: LAB member External Evaluator: Vice President-GEMS		
Prioritised Objectives	Actions	Time Frame	Resources	Success Criteria	Monitoring & Evaluation	Impact
<p>❖ To raise</p> <p>Year 7:</p> <ul style="list-style-type: none"> ▪ To improve Knowledge and understanding in Earth Sciences. ▪ Emphasis on chemistry topics ▪ Opportunities to improve reading skills enhancing scientific literacy skills- explaining phenomenon scientifically ▪ Opportunities to improve reasoning skills. <p>Year 8:</p> <ul style="list-style-type: none"> ▪ To improve Knowledge and understanding in: <p>Curriculum content: Biology: Digestive systems Chemistry: Chemical reactions Physics: Changes in seasons</p> <p>Scientific Enquiry: Variables- Deeper understanding of Independent and dependent variables Use graph to plot data using variables correctly along axis.</p>	<p>☐ Modification of Curriculum</p> <ul style="list-style-type: none"> ➤ Modified SOWs to accommodate the gaps as per PTS, TIMSS, PBTS and PISA. <p>☐ In lessons:</p> <ul style="list-style-type: none"> ➤ Provision in lesson plan through starter/mid-plenaries/plenaries to enhance students to : <ul style="list-style-type: none"> • Explain phenomena scientifically • Evaluate and design scientific enquiry • Interpret data and evidence scientifically • Enhancing students' mental ability to solve problems • Strengthen students' extended independent research and enquiry based learning with real life links. ➤ Effective questioning to enhance: <ul style="list-style-type: none"> • Critical thinking • Reasoning skills of the students • Problem solving skills ➤ NAP focused Home Learning which includes: <ul style="list-style-type: none"> • PISA/TIMSS styled questions • Comprehension based question • Planning • Enquiry based questions • Data based questions • Deepening critical thinking and reasoning skills. <p>☐ Build rigour in critical analysis of text in English to raise verbal reasoning and skillfully respond to unfamiliar texts from a range of sources.</p>	<p>March 2018 ongoing</p>	<ul style="list-style-type: none"> ▪ Time for PD/Modelling by outstanding practitioners 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>In TIMSS/PISA/PBTS:</p> <p>Year 7:</p> <p>Explain phenomena scientifically:</p> <ul style="list-style-type: none"> - Students recognize and apply their understanding of basic scientific knowledge in various contexts. - Students apply knowledge and communicate an understanding and analyze information provided - They apply knowledge to practical situations and communicate their understanding through brief descriptive responses. <p>Evaluate and design scientific enquiry</p> <ul style="list-style-type: none"> - They can plan and conduct experiments involving one or more independent variables in a constrained context. - Most students will effectively link concepts o real life thus improving self-efficacy towards the subject. - They can explain an experimental design, drawing on elements of procedural and epistemic knowledge. <p>Interpret data and evidence scientifically</p> <ul style="list-style-type: none"> - Students interpret information from tables, graphs, and pictorial diagrams and draw conclusions. <p>Year 8:</p> <p>Explain phenomena scientifically:</p> <ul style="list-style-type: none"> - Students can use more complex or more abstract content knowledge, which is either provided or recalled, - To construct explanations of more complex or less familiar events and processes. <p>Evaluate and design scientific enquiry</p> <ul style="list-style-type: none"> - They can conduct experiments involving two or more independent variables in a constrained context. - Most students will effectively link concepts o real life thus improving self-efficacy towards the subject. 	<p>Science HOD and SID, 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>Year 9</p> <ul style="list-style-type: none"> To improve Knowledge and understanding in: <p>Curriculum content: Biology: Inheritance Chemistry: Earth Sciences Safely working with chemicals Physics: Light</p> <p>Scientific Enquiry: Variables- Deeper understanding of Independent and dependent variables Use graph to plot data using variables correctly along axis. Reliability of data collected</p> <p>PISA: Explain phenomena scientifically PBTS To continue to make meaningful connections between areas of learning and real life.</p> <p>Recognise, offer and evaluate explanations for a range of natural and technological phenomena</p> <p>TIMSS and PISA: To have more number of students' progress from High International Benchmark to Advanced International Benchmark in TIMSS In addition, From Level 3 and 4 to Level 5 and 6 in PISA.</p> <ul style="list-style-type: none"> Science Attainment in Post-16 to O. 	<ul style="list-style-type: none"> Enrich students' epistemic scientific acquisition and application skills with high level of challenge especially in Post -16. 			<ul style="list-style-type: none"> They can justify an experimental design, drawing on elements of procedural and epistemic knowledge. <p>Interpret data and evidence scientifically</p> <ul style="list-style-type: none"> students can interpret data drawn from a moderately complex data set or less familiar context, Draw appropriate conclusions that go beyond the data and provide justifications for their choices. <p>Year 9: Explain phenomena scientifically:</p> <ul style="list-style-type: none"> Students can use abstract scientific ideas or concepts to explain unfamiliar and more complex phenomena, events and processes involving multiple causal links. <p>Evaluate and design scientific enquiry</p> <ul style="list-style-type: none"> They can apply more sophisticated epistemic knowledge to evaluate alternative experimental designs, justify their choices, and use theoretical knowledge to interpret information or make predictions. Most students will effectively link concepts o real life thus improving self-efficacy towards the subject. <p>Interpret data and evidence scientifically</p> <ul style="list-style-type: none"> Students can evaluate ways of exploring a given question scientifically and identify limitations in interpretations of data sets including sources and the effects of uncertainty in scientific data. <ul style="list-style-type: none"> High of students achieve stanine 6 and above in PTE across school. Most students in Phase 2 and 3 make better than expected progress from their starting point in English lessons and overtime. 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 		
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<ul style="list-style-type: none"> ❖ 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"> ▪ Focussed support lessons to embed experimental skills among students ▪ Rigor past paper practice ▪ Lessons focussed on gap analysis ▪ 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. 			<p>make connections between areas of learning for deeper meaningful learning.</p>		
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2. QUALITY OF TEACHING AND ASSESSMENT (PS3)				Leader: Head of Department and Second In Department Line Manager: Head of Secondary 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 teachers to 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 SID HOS, LAB members monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action.</p> <p>SENDCo, HODs, SID and HOS monitor the provision through lesson observations, Book looks, personalised lesson plans, IEPs -termly with prompt action</p> <p>HODs, SID, 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.</p> <p>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.</p> <p>Ongoing monitoring and support.</p> <p>SEND and G&T lists</p>

						under review again after CAT4 assessments and 6 weeks of induction for all students.
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3. LEADERSHIP AND MANAGEMENT (PS6)				Leader: Head of Department and Second in Department Line Manager: Head of Secondary 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 hold teachers accountable for their actions. 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 PTS 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>