

STUDENTS' ACHIEVEMENT (PS1) (1.1 and 1.2 Attainment & Progress)					Leader: Head of Science Department – Mr Nisar Mohamed SLT in charge: Head of Secondary - Ms Harpreet Kaur	
Maintain Outstanding Attainment and Progress in Secondary Science						
Prioritized Objectives	Actions	Time Frame	Resources	Success Criteria	Monitoring & Evaluation	Comments
❖ To maintain outstanding attainment and progress in secondary Science	<ul style="list-style-type: none"> • Challenge: <ul style="list-style-type: none"> □ Facilitate challenge (extension tasks) for all groups of students, with ample time for in-depth discussions and embedding students' mastery skills. □ Ensure consistency in high levels of challenge, enrichment, extension and acceleration opportunities for G and T students in all lessons. • Support: Provide support and early intervention to focused groups (ensure consistent appropriate in-class support to students of determination, G&T students, and students working in-line with curriculum standards, to raise their attainment. • In-depth concept development: Ensure consistency in organization of laboratory tasks, provide ample time for scientific analysis, evaluation, and consolidate/communicate their findings in detail. Ongoing 13th oct 2019 	<p>Book Look – every 3 weeks</p> <p>Informal lesson observations /learning walks with specified focus – every fortnight</p> <p>Evaluation of attainment and progress (from baseline) every 6 weeks</p>	<ul style="list-style-type: none"> ▪ Time for PD/Modelling by outstanding practitioners as needed by the dept. ▪ Reviewed SOW, Rubrics, Student IEPs, ILP sheet, Data Analysis ▪ CAT4 and PTS data ▪ Personalized lesson plans 	<p>KS3:</p> <p>Year 8:</p> <p>Attainment- PTS:</p> <ul style="list-style-type: none"> ▪ Large Majority (72%) of the students have attained stanine 6 and above in progress test and most () EOY in 2018-19. <p>Progress:</p> <p>Year 9:</p> <p>Attainment: PTS</p> <ul style="list-style-type: none"> ▪ Most (84%) of the students have attained stanine 6 and above in progress test and most () EOY in 2018-19. <p>Progress:</p>	<p>Science HODs, SIDS, HOS monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action</p> <p>HOD, SIDS, HOS monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action</p>	<p>Extension Tasks added in all lessons of all year groups to ensure consistency in high levels of challenge</p> <p>Laboratory lesson were consistently organized by providing ample time for planning, evaluate and communicate their finding. For Example in year 8 separate lessons for improving the scientific skill have been organized. Ongoing from term 3</p> <p>PTS data analyzed strand wise in order to identify and address the gaps for current year 8 and year 9 next year.</p> <p>For example reactivity series in year 9 Chemistry has been revisited to bridge the gap identifies in PTS</p>

<p>❖ To maintain outstanding attainment and progress in secondary Science</p> <p>PTS Gaps Identified</p>	<p>To embed Scientific literacy skills:</p> <ul style="list-style-type: none"> □ Effective Provision to engage students with science-related issues, and with the ideas of science, as a reflective citizen. □ Ensure provision to master skills viz. Applying phenomena scientifically, evaluate and design scientific inquiry, and interpret data and evidence scientifically. □ Combine information from several sources to solve problems and draw conclusions, and they provide written explanations to communicate scientific knowledge. <p>Intervention:</p> <ul style="list-style-type: none"> □ Address gaps in topics and areas as identified IN PTS <p><u>Addressing Gaps</u></p> <p>Year 8 Gaps Identified and revisited the topics. SOW modified. Provision for more support included</p> <p><u>Topics needs Reinforcement</u></p> <p>CHEMISTRY</p> <ul style="list-style-type: none"> ✓ (done✓) Reactivity Series ✓ Introduction to periodic table <p>BIOLOGY</p> <ul style="list-style-type: none"> ✓ Analysing and interpreting food chains 	<p>Termly evaluation of attainment and progress.</p> <p>Ongoing</p>	<ul style="list-style-type: none"> ▪ Personalized lesson plans 	<p>KS4:</p> <p>Attainment & Progress</p> <ul style="list-style-type: none"> ▪ The majority (year 10) and most (year 11) of students achieve above curriculum standards in Science and make better than expected progress from their baseline. <p>KS5</p> <p>Attainment & Progress</p> <ul style="list-style-type: none"> ▪ The majority (year 12) and large majority(year 13) of students achieve above curriculum standards in Science and make better than expected progress from their baseline in lessons 	<p>Science HODs, SIDS, HOS monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action</p> <p>HOD, SIDS, HOS monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action</p>	<p>Students have provided provision to engage and discuss science related issues, provide opportunities to make written explanation of their finding from different sources through Science Dialectics, SCI Ted, Future Scientist club etc. They also provided opportunities to engage in project based activities through hand on experiments, Virtual Reality sessions, Food talks etc</p>
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	<p>PHYSICS ✓ Electromagnets SCIENTIFIC ENQUIRY</p> <p>(done✓) SOW already modified to accommodate: scientific enquiry skills / investigations from term 1.</p> <p>(done✓) Revisit scientific enquiry , and give more frequent opportunities for students to write hypothesis , planning and execution followed by conclusion and evaluation and develop their scientific thinking relating to the concept</p> <p>✓ Give students questions with data to help enhance their data analysis skills</p> <p>Year 9 Gaps Identified and revisited the topics. SOW modified. Provision for more support included</p> <p><u>Topics needs Reinforcement</u></p> <p>CHEMISTRY ✓ (done✓) Earth Sciences BIOLOGY ✓ Photosynthesis</p> <p>SCIENTIFIC ENQUIRY</p> <p>(done✓) SOW already modified to accommodate: scientific enquiry skills / investigations from term 1.</p>	<p>June 2019</p> <p>Ongoing</p>	<ul style="list-style-type: none"> Personalized lesson plans 	<p>https://animatedscience.co.uk/283-2</p> <p>https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464/assessment-resources</p> <p>https://revisionscience.com/gcse-revision/science/science-gcse-past-papers/edexcel-gcse-combined-science-past-papers</p> <p>https://qualifications.pearson.com/content/dam/pdf/International-Lower-Secondary-Curriculum/Science/2018/SpecificationandSampleAssessments/SAMs-PLSC-Int-Award-in-Lower-Secondary-</p>	<p>Science HODs, SIDS, HOS monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action</p> <p>HOD, SIDS, HOS monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action</p>	
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<p>Internal Assessment results: Address gaps identified in internal assessments</p>	<p>✓ (done✓) Revisit scientific enquiry , and give more frequent opportunities for students to write hypothesis , planning and execution followed by conclusion and evaluation and develop their scientific thinking relating to the concept</p> <p>Addressing Internal Assessment Gaps</p> <ul style="list-style-type: none"> • Gaps: Experimental Skills, Analysing data, Graphical Skill <p>✓ Consistently organize lab lesson to increase the scientific skills</p> <p>✓ Provide time for planning experiments and presenting their laboratory finding in detail by dividing lab lesson to two lessons.</p> <p>Personalization using CAT 4 data Use CAT4 data to make personalize strategies in lessons to support all ability students and to enrich, enhance and accelerate the progress of G&T students.</p>	<p>June 2019</p> <p>Ongoing</p>	<ul style="list-style-type: none"> ▪ Personalized lesson plans 	<p>Science-2018-Sep.pdf</p>	<p>Science HODs, SIDS, HOS monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action</p> <p>HOD, SIDS, HOS monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action</p>	
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<p>❖ CAT4</p> <ul style="list-style-type: none"> To analyse and continue using CAT 4 data to provide support, challenge through early intervention. To personalise lesson plans using student implications and plan next steps. <p>Enhance reasoning skills and critical thinking skills.</p>	<p>Enhancing verbal skills Inculcate reading in science lesson to enhance the verbal skill. Improve scientific literacy skill</p> <p>Enhancing Spatial Skills Use of Video/AR/VR/3D in lesson for effective learning</p>	<p>Ongoing</p>		<p>https://www.cambridgeinternational.org/programme-s-and-qualifications/cambridge-lower-secondary/assessment/cambridge-checkpoint/checkpoint-support-material/</p> <p>https://mathsmadeasy.co.uk/ks3-revision/key-stage-3-science/</p>	<p>Science HODs, SIDS, HOS monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action</p> <p>HOD, SIDS, HOS monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action</p>	
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STUDENTS' ACHIEVEMENT (PS1) (1.3 Learning Skills)					Leader: Head of Science Department SLT in charge: Head of Secondary	
Developing in-depth learning skills and use of learning technologies in secondary Science						
Prioritized Objectives	Actions	Time Frame	Resources	Success Criteria	Monitoring & Evaluation	Comments
<p>To enhance communication skills in Science consistently with a greater focus on Students' interactions, collaboration, and communication skills</p> <p>Enhance innovation and use of learning technologies</p>	<ul style="list-style-type: none"> ▪ Communication skills: Ensure frequent opportunities for students to present their learning through in-depth discussions with rigorous use of scientific terminology, enhancing their communication skills. ▪ Learning technologies: Ensure regular, consistent and innovative use of learning technologies in lessons, evident through lesson observations. 	Ongoing	<ul style="list-style-type: none"> ▪ Time for PD/Modelling by outstanding practitioners as needed by the department (innovation) ▪ Time for lesson observations and feedback ▪ Team teaching/Peer observation 	<ul style="list-style-type: none"> ▪ Most students will be able to communicate their understanding of concepts in depth, as evidenced through their work samples and lesson observations. ▪ Most students are innovative, enterprising and independent learners and they can find things out for themselves using a variety of different sources. They use learning technologies independently effectively, evidenced through regular monitoring. 	Science HODs, HOKS, HOS, LAB members monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action	<p>Communication is enhanced in lessons and beyond like students participated in Dialectics in Physics, Chemistry and Biology, Science Ted talk</p> <p>Launch of Future Scientist club enhancing their research and critical thinking skills</p>

TEACHING AND ASSESSMENT (PS3) (3.1 Teaching for effective learning)					Leader: MLs and SLT Line Manager: Principal Achievement Governor: Parent, Student, and GEMS - LAB members External Evaluator: VP	
Improve teaching for effective learning in secondary Science						
Prioritized Objectives	Actions	Time Frame	Resources	Success Criteria	Monitoring & Evaluation	Comments
<ul style="list-style-type: none"> To ensure consistency in outstanding teaching practices in secondary Science 	<ul style="list-style-type: none"> Time in lessons: Use time effectively in lessons to maximize learning. Ensure appropriate lesson pace that allows sufficient time for concluding activities and assessing and consolidating student learning. Effective Use of data: <ul style="list-style-type: none"> Secure the use and implementation of data by all the teachers. Teachers to consistently personalize Science lesson plans by triangulation of data (CAT4, PTS, internal data). The provisions made for students based on data analysis must be evident in notebooks. Setting Expectations: To ensure clarity in expectations and a clear understanding of the high standards of Teaching & Learning among teachers: <ul style="list-style-type: none"> Sharing best practices: Embed systems to share outstanding teaching practices to build 	<p>Ongoing</p> <p>Book Look – every 3 weeks</p> <p>Informal lesson observations/learning walks with specified focus – every fortnight (Ongoing)</p>	<p>Monitoring forms, IPPs, modeling, lesson observations, peer observation, team teaching.</p> <p>PD sessions on the effective use of data for impactful personalization.</p> <p>Regular and rigorous data analysis.</p> <p>PD and sharing best practices on effective personalization and appropriate challenge</p> <p>IEPs, TLPs, ILPs, Minutes of meetings</p>	<ul style="list-style-type: none"> Most teachers deliver Very Good or Outstanding features. Almost all teachers make progress and achieve their targets identified in IPP aided with rigorous support in place. 	<p>HOD, SID, HOS, LAB members monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action.</p> <p>SENDCo, HODs, HOK, and HOS monitor the provision through lesson observations, Book looks, personalized 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, personalized lesson plans, ALPs, TLPs-termly with prompt action</p>	<p>New teachers are buddied with outstanding and very good teachers. PD on three part lesson, AFL and personalisation done. Department workshops on moderation and marking done.</p> <p>All teachers will complete paired observation with either senior or middle leader by end of term1. Very positive feedback on a deeper understanding of good or better lessons and how to look for and ensure learning in the lesson.</p>

	<p>consistency in high standards of T&L through peer observations, team teaching, modeling of lessons. Strong practitioners to share outstanding practices through videos, work samples, mentoring. Rigorous, regular cross-phase observations across the school to ensure sharing of outstanding practices to raise teacher performance and student learning. This is to be rigorously and regularly tracked by Science HODs and SID.</p> <ul style="list-style-type: none"> ➤ Paired 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. ➤ Support to teachers: All identified acceptable and good teachers have IPP and timetabled support to raise T&L and effective personalization based on data in their lessons. ➤ Monitoring: Rigorous monitoring of teacher performance and use of data, through regularly tracked lesson observations, learning walks, and peer observations and book looks. 			<p>All groups of students make outstanding progress in most lessons due to personalized support and stretched challenge to maximize their potential across all phases.</p>	<p>members monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action.</p> <p>SENDCo, HODs, HOK, and HOS monitor the provision through lesson observations, Book looks, personalized 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, personalized lesson plans, ALPs, TLPs-termly with prompt action</p>	<p>Understanding of all data is getting deeper, however, the 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>
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TEACHING AND ASSESSMENT (PS3) (3.2 Assessment)					Leader: Head of Science Department SLT in charge: Head of Secondary	
To accurately assess the depth of students’ learning with effective AFL and adjusting pace of the lesson						
Prioritized Objectives	Actions	Time Frame	Resources	Success Criteria	Monitoring & Evaluation	Comments
<ul style="list-style-type: none"> To ensure consistent use of effective AFL strategies to accurately assess the depth of students’ understanding. 	<p>Consolidating learning by:</p> <ul style="list-style-type: none"> AFL in lessons: Ensure consistent and robust use of AFL strategies by teachers using a wide range of effective AFL tools (including online AFL resources, rubrics), to assess their depth of understanding monitor all students’ attainment and progress in lessons, with emphasis on plenary to recognize lesson-by-lesson learning gains. Time in lessons: Ensure teachers adjust teaching strategies and pace of lessons to skilfully elicit, conclude, assess, consolidate and maximise learning for all groups of students within the appropriate time frame in most lessons. Provision for all groups: Teachers to consistently personalize Science lesson plans by triangulation of data (CAT4, PTS, internal data). Ensure consistency in provision for all groups of students including SEND and G&T in lessons. Mastery skills: Embed students’ mastery skills through scaffolded reflection and 	<p>Informal lesson observation s/learning walks with specified focus – every fortnight</p> <p>Ongoing</p> <p>Termly evaluation and discussions of effective AFL strategies used</p>	<p>Professional Developments Programmes- internal and External</p> <p>Online AFL tools to measure progress</p> <p>Monitoring forms, IPPs, modelling, lesson observations, peer observation, team teaching.</p> <p>PD sessions on effective use of data for impactful personalization.</p> <p>Regular and rigorous data analysis.</p> <p>PD and sharing best practices on effective personalization and appropriate challenge IEPs, TLPs, ILPs, Minutes of meetings</p>	<p>Most of the students making outstanding progress evident through work samples and formative assessment trackers</p> <p>Most lesson have timed activities and teacher ensure that consolidate the learning with effective plenary</p> <p>Most of the lessons have the effective provision of a variety of AFL strategies evident through lesson observations.</p>	<p>HODS and SIDS HOS, through lesson observations, learning walk, book look,</p> <p>Teachers trackers</p> <p>Data Analysis</p>	<p>Effective AFL is a key feature in all lessons. Teachers establish their starting point . Students used rubrics effectively to assess and set targets for themselves</p>

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	<p>discussion time in lessons with varied opportunities for students to effectively communicate their learning with reasoned arguments.</p> <ul style="list-style-type: none"> ▪ Professional Development: PD sessions to share outstanding AFL strategies followed by constructive feedback, to set clear targets for all group of students. This will be followed up by HODs and SID (lesson observations). ▪ Tracking and Intervention: Maintain trackers to record students' progress fortnightly, monthly and termly followed by data analysis for each student. Teachers to track students' attainment and progress regularly in the online tracker system as a 6 week-snapshot, wherein they consolidate the formative assessment entries in an online system. Secure immediate interventions using gap analysis (monthly) to address students' gaps in scientific concepts. ▪ Moderation: Build rigor in moderation of assessments and establish clarity amongst teams, within the same phase and cross phase. 	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>	<p>Student notebook work samples, peer- and self-marked rubric samples.</p> <p>Lesson observations, learning walks</p>	<p>Most of the students attaining grades which are above curriculum in all lessons, summative assessments and EOY assessments.</p>		<p>Cross Phase moderation for papers and books done in June</p>
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