# SCHOOL DEVELOPMENT AND NAP ACTION PLAN -SCIENCE -2022-2023

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| **STUDENTS' ACHIEVEMENT (PS1) (1.1 and 1.2 Attainment & Progress)**<br>**Maintain Outstanding Attainment and Progress in Secondary Science across all phase** | **Leader: Head of Science Primary and Secondary**<br>**Line Manager: Head of Primary and Secondary**<br>**Achievement Governor: Vice Principal**<br>**External Evaluator: Vice President-GEMS** |

| Prioritised Objectives | Actions | Time Frame | Resources | Success Criteria | Monitoring & Evaluation | Comments |
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| To maintain outstanding progress and attainment across all phases.<br><br>To raise science attainment in NAP assessment across the school- PTS, TIMSS, PISA to exceed the targets set for the school.<br><br>**PTS**<br>To further minimise the gap identified in PTS 2021-22 and accelerate the performance in content and process categories in PTS.<br><br>**Gaps Identified** | • Continue to embed of critical thinking, analytical and graphical skills through TIMSS, PISA and SAT style questions in lessons.<br>• Further Embed Scientific Skill through scientific enquiry and investigation in lessons across all phases.<br>• Provide opportunities to stretch and develop their understanding through planning, open activities like plan their own experiment to investigate questions/opportunities to change question for example 'what if' scenario across primary.<br>• In Year 4, collaborate with maths department to integrate reinforcement of the topic data analysis in maths lesson using data from scientific findings. | Ongoing | Personalized lesson plans<br><br>SOW<br><br>GAP analysis<br><br>PTS report | Most of students continue to achieve above curriculum standards in Science and make better than expected progress | HOD, SID, HOS monitor provision (lesson observation, Book Look, SOW, Lesson plans, Data) termly with prompt action. | Improvement in scientific thinking and skills seen in internal assessments and in PTS.<br><br>Most students effectively use their analytical and critical thinking skills to conclude and evaluate their prediction and findings. |

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| **Year 4**<br><br>Content category- Physics, Reporting area- Application of knowledge and understanding data analysis.<br>**Year 5**<br><br>Content category -Chemistry separation techniques. Reporting area -Application of knowledge and understanding.<br>**Year 6**<br><br>Line graphs, use of line graphs, interpreting graphs, thermal insulators, reversible and irreversible changes.<br><br>**Year 8**<br><br>Reporting area-Scientific skills<br><br>**Year 9**<br><br>No major gaps identified<br><br>**TIMSS** | • Ensure more practice questions in Year 6 on drawing line graphs with appropriate scales, and analysing where line graphs are the better choice to represent data.<br>• Include a science skill lesson in Year 8 and continue in Year 9 to include scientific skill component in all assessments to evaluate the progress in the skill.<br>• Increased opportunities to stretch and develop their understanding of science by reading a range of text in different scientific genres and writing their own explanation and conclusion using language of science.<br><br>‘ | | | Most students continue to achieve above curriculum standard in PTS | | The introduction of skill lesson has impacted in scientific skills of students and Skill based PTS questions were easier for students which is evident in PTS report.<br><br>Regular and continues monitoring to ensure outstanding students’ outcome. |

مدرسة وينشستر
The Winchester School
Jebel Ali

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| Continue to maintain outstanding Attainment in TIMSS to exceed the targets set for the school for 2023<br><br>**<u>Target score for 2023 for Year 5</u>**<br><br>601-611<br><br>**<u>Target score for 2023 for Year 9</u>**<br><br>614-624<br><br>**<u>PISA</u>**<br><br>Raise the scores in PISA to ensure large majority of our students achieve proficiency level 4<br><br>**<u>Target Score: 531</u>** | • Continue to work on 2023 target score, with our in-depth and efficient gap analysis data in place, personalized, timely support followed by intervention and rigorous monitoring.<br>• Continue providing opportunities in lessons for reading and analyzing data especially in phase 2 and phase 3.<br>• Continue to use visible thinking and concept cartoons as starters in primary to further enhance inquiry and reasoning.<br><br>• Continue to provide opportunities within curriculum and lessons to ensure 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.<br>• Continue to include PISA type questions in assessments. | PISA report<br><br>PISA type questions and assessments | TIMSS report 2019<br><br>Game based learning lesson plans and tools<br><br>Achieve the target of 531 and push in to level 4 proficiency level. | Achieve the target of 614-624 and ensure most of our students achieve advanced international bench mark and above in TIMSS 2023. | | In Year 5, our score is above the average score of outstanding schools in Dubai and average score of top performing countries in the world.<br><br>Our school exceeded TIMSS 2019 target score in Year 9 by 39 points. We are 43 points above the average score of Dubai Private Schools and above the average score of top performing country in the world.<br><br>Our School's PISA score of science is 521 which is 21 points above the average score of Dubai schools and 11 points above the vision 2021 national Target. |

# SCHOOL DEVELOPMENT AND NAP ACTION PLAN -SCIENCE -2022-2023

| STUDENTS' ACHIEVEMENT (PS1) (1.3 Learning Skills) | **Leader: Head of Science Primary and Secondary**<br><br>**ELT In-charge: Academic Advisor and Lead Practitioner**<br><br>**Achievement Governor: Vice Principal**<br><br>**External Evaluator: Vice President-GEMS** |
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| Prioritised Objectives | Actions | Time Frame | Resources | Success Criteria | Monitoring & Evaluation | Comments |
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| Enhance communication skills in Science consistently with a greater focus on Students' interactions, collaboration, and communication skills<br><br>Enhance innovation and use of learning technologies | ▪ **<u>Communication skills:</u>** Continue to Ensure frequent opportunities for students to present their learning through in-depth discussions with rigorous use of scientific terminology, enhancing their communication skills.<br><br>▪ Effective provision to engage in Science related discussion through webinars, debates, Science Research journal and dialectics.<br><br>▪ **<u>Learning technologies:</u>** Ensure regular, consistent and innovative use of learning technologies in lessons, evident through lesson observations.<br><br>▪ Continue the use of Practical simulations and applets to further enhance the practical skills. | Ongoing | PD/Modelling by outstanding practitioners as needed by the department (innovation)<br><br>Lesson observations and feedback<br><br>Student feedback<br><br>Research Magazine-eureka<br><br>Science magazine | Most students will be able to communicate their understanding of concepts in depth, as evidenced through their work samples and lesson observations.<br><br>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. | Science HODs, HOKS,<br><br>HOS, LAB members monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action | Communication is enhanced in lessons and beyond -students Leading, research club, Dialectics in Physics, Chemistry and Biology, Science Ted talk by enhancing their research and critical thinking skills. Students write science article and publish school research journal. |

# SCHOOL DEVELOPMENT AND NAP ACTION PLAN -SCIENCE -2022-2023

| 2. Improve the Quality of Teaching and Learning. | | | | | | |
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| **Prioritised Objectives** | **Actions** | **Time Frame** | **Resources** | **Success Criteria** | **Monitoring & Evaluation** | **Comments** |
| Improve the consistency of how well teachers<br><br>• use time in lessons to maximise learning<br><br>• adjust teaching strategies to ensure students of all abilities make the best possible progress<br><br>• embed students' mastery skills to enable them to securely attain above curriculum standards<br><br>• accurately assess the depth of students' understanding | Identify the teachers where effective use of AFL to adjust teaching strategies is the focus point and work with them explicitly through<br><br>• Team teaching<br>• Modelling<br>• Lesson conferences<br>• Paired and peer observations<br>• Buddy support from VG/O teacher<br>• Training focussing on effective use of data to personalise and effectively use AfL strategies measure progress and adjust strategies to ensure almost all students make better than expected progress.<br><br>Ensure reflective practice where identified teachers record their individual lessons and evaluate use of time effectively in lessons.<br><br>Raise challenge through effective questioning- higher order, open ended, enquiry based, extrapolatory questions and scenario-based learning | Identification and cascading by the end of October, implementation, monitoring and support ongoing<br><br>Ongoing | Pool of resources in phoenix folders including exemplar lesson plans, recorded lessons<br>PD on effective questioning/ reflection sessions<br>Sharing outstanding practices through Appreciative Enquiry and WINLEAPS<br>Annotated lesson plans/SOW/Work Samples<br>Rubrics<br>TLP's, ILP's, IEPs<br>Assessment trackers | Large majority teachers in Phase 4 and majority in phase1, 2 and 3 meet prioritized objectives and maximize progress for most students with personalised challenge and support.<br>Most students in Phase 1 and 4 and Large majority in phase 2 and 3 make better than expected progress through impactful AFL and effective questioning.<br>Most students across all phases engage effectively and collaborate meaningfully with outstanding social and personal development. | • SLT in charge of department<br>• ML and Teachers on a monthly basis<br>• Student leaders, LAB members on a termly basis. | **Cascaded & Embedded following HLTPs:**<br>Learning menus, to provide differentiation/personalisation and challenge<br>Use of incremental challenge questions to deepen learning<br>Big Question/ Big Idea, Hook questions to develop critical thinking<br><br>Use of Pad-let wall, Nearpod, Google forms, for Collaboration<br>Use of Kahoot, Quizzes, for Assessments<br>Strategies like I see, I think, I wonder |

## SCHOOL DEVELOPMENT AND NAP ACTION PLAN -SCIENCE -2022-2023

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| | Ensure teachers accurately assess students understanding and consolidate their learning through effective questioning- probing/funnel/ hinge style<br>**<u>Creating and celebrating a culture of Innovation</u>**<br>Cascade and embed effective use of HLTP (High Leverage Teaching Practices) like<br><br>Personalisation to meet the needs, peer teaching and mentoring, integrating critical thinking and problem-solving skills through engaging activities that rely on competencies such as researching and brainstorming.<br>**<u>Enabling a culture of self-reflection and development throughout the school at all levels through reflection by students in their lessons, teachers, middle leaders' sessions led by SLT, respective ML and identified outstanding practitioners</u>**<br><br>New teachers to observe VG/Outstanding teachers along with SLT/ML<br><br>Pre and post observation meet and Meaningful discussions with teachers to support in identified are | Ongoing<br><br>Ongoing<br><br>Ongoing | Lesson observation app<br>IPP's<br><br>Pre and Post observation form<br>Peer observation | Large majority of lessons in Phase 1, 2 and 3 are very good and better by end of Term 1 and<br>Most lessons in Phase 4 are very good and better with large majority outstanding.<br><br>All new teachers develop a good understanding of outstanding practice and expectations and try implementing these in their lessons<br><br>Existing teachers develop a reflective culture that helps them to further enhance their teaching pedagogies to continue to secure their practices | | |