# SCHOOL DEVELOPMENT AND NAP ACTION PLAN -MATHEMATICS -2023-2024

| **STUDENTS' ACHIEVEMENT (PS1) (1.1 and 1.2 Attainment & Progress)**<br>• **Raise attainment in Secondary to Outstanding and progress in Primary to outstanding.** | | | | | **Leader in charge: Director of Mathematics and Head of Secondary -Ms Preeti Manoj** | |
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| **Prioritised Objectives** | **Actions** | **Time Frame** | **Resources** | **Success Criteria** | **Monitoring & Evaluation** | **Comments** |
| To raise attainment to outstanding in Phase 3.<br><br>To raise progress in Phase 2 to outstanding. | Continue to enhance learning opportunities to challenge all students by including mathematical games, experiential learning and visualization of math concepts to enhance mathematical reasoning and problem solving.<br><br>Continue to provide focused and timely personalised support to identified students to raise the attainment of all group of learners.<br><br>Continue to use variety of AFL strategies such as Thinking TOM, convince me, Spot the error, error analysis in lessons effectively for excellent progress.<br><br>Continue to enhance the opportunities for Exploring, questioning, working systematically, visualising, conjecturing, explaining, generalising and justifying to enhance the reasoning skills. | Ongoing and evaluated on monthly basis | ▪ Reviewed SOW, Rubrics, Student IEP, ILP sheet, Data Analysis<br>▪ CAT4, PTM, TIMSS, PISA data.<br>▪ Target student trackers<br>▪ Support lesson schedule<br>▪ Work samples<br>▪ Lesson plans<br>▪ Learning walk forms<br>▪ Lesson Observation forms<br>▪ EOY and CIE results<br>▪ Book look forms | Most students achieve above curriculum standards in all internal and external assessments.<br><br>Most students make better than expected progress across all phases.<br><br>Most students formulate hypothesis, investigate, make connections between areas of learning and draw inferences.<br><br>Students use their reasoning abilities to draw conclusions and justify | HOD to monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action | There's an improved attainment in all internal, external and international benchmark results due to focused interventions and personalised support.<br><br>Increased opportunities within lessons to enhance mathematical reasoning by incorporating "what if" questions and providing investigative opportunities, justification and error analysis are evident across all phases. |

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| To improve students' investigative and enquiry skills to enhance independence in learning.<br><br>**PTM**<br><br>To maintain outstanding attainment scores across all content and process skills categories in PTM, with particular focus on geometry in Year 4 and statistics, as well as geometry and measures in Year 9.<br><br>To exceed the targets set for TIMSS 2023<br><br>**TIMSS target:**<br><br>Year 5:603-613<br><br>Year 9:604-614 | Further embed inquiry- based learning through use of inquiry prompts and real-life scenarios.<br><br>Further Continue to enhance opportunities for experiential learning that require students to apply their learning to real life scenarios.<br><br>Increased dedicated lessons for Statistics and Geometry and measures in Year 9 and geometry in Year 4 as a result of PTM analysis of Year 8 and year 3.<br><br>**TIMSS**<br><br>• Continue to provide ample opportunities in lessons to further enhance problem solving and reasoning skills.<br>• Continue to<br>✓ express generalization algebraically and model situations.<br>✓ reason data from several sources or unfamiliar representation to solve multistep problems. | June 2023<br><br>Ongoing<br><br>Ongoing<br><br>Ongoing | Investigative tasks<br><br>Lesson plans<br><br>Work samples<br><br>Learning walks<br><br>Lesson observation<br><br>Annotated SOW<br><br>Lesson plans<br><br>Work samples<br><br>Lesson observation<br><br>Learning walk | their ideas in a range of situations.<br><br>Most students select and apply mathematical problem-solving techniques, describe them as relationships, draw conclusions with findings, and provide justification.<br><br>Increased percentage of students in the high and advanced international benchmark cognitive domain in applying and reasoning against TIMSS benchmark in TIMSS 2023 and PISA. | | Experiential learning opportunities are evidenced in topic probability by use of fable robots.<br><br>In primary, the utilization of manipulatives and hands-on activities enhances the depth of understanding among students. |

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| | **PISA**<br>• Further embed the comprehension skills by continuing to use reading tasks linked to mathematical concepts.<br>• Continue to provide opportunities to analyse word problems and applications of the concepts for solving problems in real life contexts. | | | | | |

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| **STUDENTS' ACHIEVEMENT (PS1) (1.3 Learning Skills)**<br>**To raise the learning skills in Primary and Secondary to outstanding.** | **Leader in charge: Director of Mathematics and Head of Secondary -Ms Preeti Manoj** |

| **Prioritised Objectives** | **Actions** | **Time Frame** | **Resources** | **Success Criteria** | **Monitoring & Evaluation** | **Comments** |
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| Further embed critical thinking and problem-solving skills across all phases. | Coach students to be proactive in their own learning and be confident in self-review by using rubrics and engaging in dialogue with peer/teacher and setting next steps.<br><br>Continue to provide opportunities in lessons for students to<br><br>• stretch and develop conceptual understanding by emphasising the higher order thinking skills of hypothesising or predicting, interpreting results and applying reasoning using mathematical vocabulary. | Ongoing<br><br>Ongoing and evaluat | Rubrics Exemplar<br><br>Lesson plans<br><br>Book look forms<br><br>Learning walks<br><br>Student work samples<br><br>SOW<br>Lesson Observation Forms<br>PD Session<br>Lesson Plans | In lessons almost, all students across school confidently use rubrics to evaluate their strength and weakness accurately and take targeted actions to improve.<br><br>Most students reason and justify mathematical concepts using their critical | Monthly monitoring focussed on use of rubrics and critical thinking.<br><br>HOD through focussed learning walks, lesson plan sampling, work sampling, | The consistent utilization of rubrics by both teachers and students is evident in most lessons, fostering independence and enabling students to assess their own learning while setting targets. Progress is evident in work samples and in lessons. |

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| To further enhance the use of ICT to embed independent learning skills. | • Present their mathematical learning which will help them to make connections with real life through improved mathematical literacy.<br><br>Continue providing opportunities in lessons for technology integration through<br>• Virtual manipulatives that are dynamic virtual representations of the concrete manipulatives.<br>• Use of games and simulations to teach and train in mathematics.<br>• Using technology to acquire skills such as conducting research.<br>• Effective use of ICT tools in math lessons like Nearpod, Padlet, GeoGebra.<br><br>Enhance Design thinking process and experiential learning in maths to strengthen the independent learning. | ed on weekly basis<br><br>Ongoing | Samples of students work exhibiting investigative skills<br>Assessment results post conducting these lessons.<br><br>Learning walk forms<br><br>Lesson observation forms<br><br>Lesson plan samples<br><br>Learning skill rubrics | thinking and problem-solving skills.<br><br>Most students demonstrate independent learning and use learning technologies to find things out for themselves, interact and collaborate to achieve agreed goals and communicate their learning. | lesson observations.<br><br>HOS, HOP, LAB members monitor and review provision (lesson observation, Book look, SOW, lesson plans, data) termly with prompt action<br><br>. | In Secondary and Post 16, investigations prioritize open inquiry, necessitating students to create hypotheses, thereby cultivating advanced critical thinking skills.<br><br>The implementation of game-based learning and the use of ICT tools like Kahoot, quizzes, Geogebra simulations, and algorithmic thinking have been observed to significantly enhance student engagement. |

# SCHOOL DEVELOPMENT AND NAP ACTION PLAN -MATHEMATICS -2023-2024

| **To improve the quality of teaching, learning and assessments across all phases**<br><br>To Increase the proportion of very good and outstanding teaching. | **Leader in charge: Director of Mathematics and Head of Secondary -Ms Preeti Manoj** |
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| **Prioritised Objectives** | **Actions** | **Time Frame** | **By Whom** | **Resources** | **Success Criteria** | **Monitoring & Evaluation** | **Comments** |
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| To ensure all identified teachers make the most effective use of assessment data when designing and implementing learning activities that is suitably challenged for students of all abilities and that lessons are taught as planned. | Effective analysis of assessment data termly for all groups of students by teachers, supported and monitored by leaders.<br>- Accurate identification of strengths and gaps by all teachers to inform planning and provide appropriate intervention and support ensuring measurable positive impact for all group of learners.<br>- Teachers to ensure daily lessons are suitably planned to challenge and engage students as per their abilities and also keeping in mind their areas of developments and needs. | Identification and cascading by the end of January, implementation, monitoring and support ongoing Training for new teachers during induction and termly.<br>Ongoing buddy support specific to use of assessment data, class story | Respective HODs and SLT in-charge | Pool of resources in phoenix folders, recorded lessons Class Stories<br>PD on effective questioning, use of assessment data, effective AfL strategies that look for learning, active learning and collaboration. | Most lessons have extensive personalisation through effective innovative strategies devised after a thorough analysis of CAT4, Progress Tests, PASS, NGRT, ABT thus ensuring most students make excellent progress in most lessons in phase 1 and 4 and most lessons in phase 2 and 3. | SLT in charge of departments MLs and Teachers on a monthly basis Student leaders, LAB members on a termly basis.<br><br>Moderation, lesson observations, peer observations, book look, feedback from teachers | Bespoke PD done by Principal, VP and senior leaders. Teachers understanding of data improved and use of data seen in most lessons,<br>. |
| To ensure identified teachers make regular checks of students' progress to identify and tackle gaps in students learning in lessons and in their work. | Further embed consistency in identified teacher AfL approaches in lessons and written feedback using rubrics highlighting strengths and weaknesses leading to individual target setting, personalized learning and intervention for all groups of learners. | Identification by end of November 2023 and training/support will be immediate and ongoing monitoring, coaching and | Respective HODs and SLT in-charge | Effective AfL strategies that look for active learning and collaboration.<br><br>Exemplars<br>Peer Observation forms | Most students across school are confident and accurate in self-evaluation of their strengths and areas of development using rubrics effectively, set challenging targets and | Work samples, Assessment papers, learning walk, Lesson observations evidence positive shift in | Most teachers across school make regular checks on students' progress. |

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| | Highly personalised learning and intervention through instruction/, questions, tasks, resources and support for specific intervention to ensure progress for all groups of learners. | mentoring ongoing.<br><br>New teachers in Term 2 AY 23-24 to be targeted. | | Team Teaching Modelling | are motivated to achieve them.<br>Almost all lessons in Phase 1 and 4 and most in Phase 2 and 3 evidence extension and stretched challenge to enhance critical thinking, independent learning, problem solving, research and inquiry skills. | identified teachers. | |
| To ensure that all teachers are clear about the requirements of international benchmark assessments and teaching is adapted to tackle any identified gaps in knowledge and skills. | Highly effective and personalised training for new staff on the requirement of international benchmark.<br><br>Bespoke focussed PD and support built in to ensure consistency in effective use of NAP data by all teachers to inform planning.<br><br>Sharing of best practices through team teaching modelling, peer observations that focus on skills required for international benchmark assessment like critical and independent thinking, problem solving, research and inquiry skills.<br><br>Identified teachers to present this cohort performance using all international bench mark assessment dat. Intervention and support implemented. | Immediate in November 2022 and ongoing | VP | Bespoke PD's on International Benchmark Assessments, Reports.<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<br><br>Monitoring time and resources | Most teachers rigorously analyse NAP assessment to inform their provision and develop personalized teaching and learning strategies to ensure that most students make better than expected progress<br>All teachers are confident and aware of international benchmark assessment requirement.<br>All teachers share this information with students to complete NAP ILP sheets.<br>All teachers use International Benchmark assessments information in their | Class stories with strategies<br>NAP ILPs are completed<br>Personalised lesson plans using data | Bespoke PD done by Principal, VP and senior leaders.<br>All teachers are aware of the benchmark assessments |

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| To raise teaching for effective learning to outstanding in FS and Sixth Form. | Continued focus on building teacher confidence to promote critical questioning, insightful responses, discussions and reflections in lessons to stretch and challenge.<br><br>Bespoke training, coaching and rigorous monitoring of identified teachers to build consistency and secure standards of outstanding teaching and learning. | Immediate November 2022 and ongoing | Respective HODs | -Sharing outstanding practices<br>-Modelling<br>-Team Teaching<br>-Moderation<br>-Sharing outstanding exemplars | Most students in phase 1 and 4 are confident and demonstrate critical thinking, problem solving and inquiry skills and make better than expected progress.<br><br>Most lessons across all subjects are Very Good and Outstanding with 64% or more Outstanding. | Weekly learning walk, lesson observations, book look, moderation | Positive shift seen. FS and Post 16 almost all lessons outstanding progress is seen. In Phase 2 and 3 most lessons progress is Outstanding |