

MATHEMATICS SECONDARY AGENDA PARAMETERS ACTION PLAN

Focus	Modification of Curriculum/Action	Success/Impact Indicators:	When?	Where?	Who?	Useful Links
<p>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: Financial Literacy Introducing financial Literacy Increased number of word problems to ensure effective interpretations, arguments and actions taken to find solutions.</p> <p>CAT4: Teaching strategies to be based on verbal bias ranging from no bias to extreme verbal bias</p> <p>Progress Test Maths</p> <ul style="list-style-type: none"> As a Group: To improve the SAS score for students of the cohort from 33% in 2016-17 Gender wise Target: The girls of Year 7 (2015-16) did not perform well in comparison to the boys. They are currently in Year 8, different strategies need to be used in classes to improve their learning skills. Curriculum Content: Probability and Ratio, Proportion and Rate are two identified areas to work on for the cohort of students' in Year 8 in 2017-18 Also to strengthen its consolidation in Year 7 as well in 2017-18 Fraction, Equations, directed numbers, Probability, Equation, Directed numbers, Polygons, Triangles, Area & perimeter word problems on fractions. 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. 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. Student Wise analysis: Work on identified low stanine students, SEND and Emiratis in year 8 with personalized support during break time 	<p>Annotation of Curriculum</p> <ul style="list-style-type: none"> SOW is remapped to address the gaps in TIMSS curriculum : <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. <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"> Real life situations given to the students for better understanding of the concepts. Analyzing the word problems and application of the correct concept for solving problems. Mental maths questions to be further embed throughout the lesson. 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 Further deepening critical thinking and investigation skills. Mental ability based questions 	<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 analyze 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. 	<p>6 weekly</p> <p>Termly</p> <p>Ongoing</p>	<p>Ongoing – 6 weekly review</p> <p>Outcomes based Formative assessment</p>	<p>All teachers/ HODS/ HOKS</p>	<p>http://timssandpirls.bc.edu/timss2019/frameworks/framework-chapters/mathematics-framework/</p> <p>http://www.iea.nl/fileadmin/user_upload/General_Assembly/56th_GA/Study_presentations/eTIMSS_2019_Development_GA.pdf</p> <p>Practice questions: https://www.nfer.ac.uk/TIMSS/sample-questions.cfm</p> <p>http://www.edinformatics.com/timss/timss_intro.htm</p> <p>http://www.oecd.org/pisa/pisaproducts/pisa2012-2006-rel-items-maths-ENG.pdf</p> <p>http://www.oecd.org/pisa/test-2012/</p> <p>http://www.oecd.org/pisa/test/financialliteracytest/</p> <p>http://www.oecd.org/pisa/test/PISA%202012%20items%20for%20release_ENGLISH.pdf</p> <p>https://www.oecd.org/pisa/pisaproducts/Take%20the%20test%20e%20book.pdf</p> <p>https://www.gla-assessment.co.uk/media/1382/ptseries_assessment_overview.pdf</p>

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<p>YEAR 8:</p> <p>TIMSS:</p> <ul style="list-style-type: none"> ➤ 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>PISA:</p> <p>Financial Literacy Students to reflect on their work and to formulate and communicate their interpretations and reasoning.</p> <p>Progress Test Maths</p> <ul style="list-style-type: none"> ➤ As a Group: To improve the SAS score for students of the cohort from 54% in 2016-17 to higher in 2017-18. ➤ Gender wise Target: To have specific and personalised strategies in place to further increase performance of boys in 2017-18. They are currently in Year 9; different strategies need to be used in classes to improve their learning skills. ➤ Curriculum Content: Algebra, Probability, Geometry and Measures are identified areas to further work on for the cohort of students' in Year 9 in 2017-18. Also to strengthen its consolidation in Year 8 as well in 2017-18. To further, embed our effective strategies to raise these areas. Percentage, Circles, directed numbers, word problems on fractions, 3D shapes, ratio & proportions, conversions, ➤ Ratio Proportion & Rate 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. ➤ 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. ➤ Student Wise analysis: Work on identified low stanine students, SEND and Emiratis in year 9 with personalized support during break time 	<ul style="list-style-type: none"> ➤ Annotation of Curriculum ➤ SOW is remapped to address the gaps in TIMSS curriculum : <ul style="list-style-type: none"> → In Year 8: Students should be able to solve real world problems using algebraic models and explain relationships involving algebraic concepts. → Functions can be used to describe what will happen to a variable when a related variable changes. ➤ Provision in lesson plan through starter/mid-plenaries/plenaries to enhance students to: <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>Effective questioning to enhance:</p> <ul style="list-style-type: none"> - Critical thinking - Reasoning skills of the students - Problem solving skills <ul style="list-style-type: none"> ➤ NAP focused Home Learning to further embed critical thinking and reasoning skills. <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. ➤ Evaluate learning and Assessment outcomes against international benchmark TIMSS/PISA. ➤ Pythagoras theorem based on PTM 	<p>Majority of the students</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. 	<p>6 weekly</p> <p>Termly</p> <p>Ongoing</p>	<p>Ongoing – 6 weekly review</p> <p>Outcomes based Formative assessment</p>	<p>All teachers/ HODS/ HOKS</p>	<p>http://timssandpirls.bc.edu/timss2019/framework/framework-chapters/mathematics-framework/</p> <p>http://www.iea.nl/fileadmin/user_upload/General_Assembly/56th_GA/Study_presentations/eTIMSS_2019_Development_GA.pdf</p> <p>Practice questions: https://www.nfer.ac.uk/TIMSS/sample-questions.cfm</p> <p>http://www.edinformatics.com/timss/timss_intro.htm</p> <p>http://www.oecd.org/pisa/pisaproducts/pisa2012-2006-rel-items-maths-ENG.pdf</p> <p>http://www.oecd.org/pisa/test-2012/</p> <p>http://www.oecd.org/pisa/test/financialliteracytest/</p> <p>http://www.oecd.org/pisa/test/PISA%202012%20items%20for%20release_ENGLISH.pdf</p> <p>https://www.oecd.org/pisa/pisaproducts/</p>

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<p>YEAR 9/10: TIMSS/PISA:</p> <p>PISA: Financial Literacy Financial Literacy Students to reflect on their work and to formulate and communicate their interpretations and reasoning.</p> <p>CAT4: Teaching strategies to be based on verbal bias ranging from no bias to extreme verbal bias</p> <p>Progress Test Maths</p> <ul style="list-style-type: none"> ➤ As a Group: To improve the SAS score for students of the cohort from 59% in 2016-17 ➤ Gender wise Target: The boys of Year 9 (2015-16) did not perform well in comparison to the girls. They are currently in Year 10, different strategies need to be used in classes to improve their learning skills. ➤ Curriculum Content: Numbers is the identified areas to work on for the cohort of students' in Year 10 in 2017-18. Also to strengthen its consolidation in Year 9 as well in 2017-18 ➤ 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. ➤ 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. ➤ Student Wise analysis: Work on identified low stanine students, SEND and Emiratis in year 10 with personalized support during break time 	<p><input type="checkbox"/> Annotated of Curriculum</p> <ul style="list-style-type: none"> ➤ Annotation of SOWs to accommodate: <ul style="list-style-type: none"> • interpreting, applying and evaluating mathematical outcomes related to scatter graph and word problems • Revisiting geometry and its measures In lessons: ➤ Provision in lesson plan through starter/mid-plenaries/plenaries to enhance students to : <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 • 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 <p><input type="checkbox"/> Evaluate learning and Assessment outcomes against international benchmark TIMSS/PISA.</p> <p><input type="checkbox"/> Reading: Encourage and embed the habit of reading in students.</p>	<p>Majority of the students</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. 	<p>6 weekly</p> <p>Termly</p> <p>Ongoing</p>	<p>Ongoing – 6 weekly review</p> <p>Outcomes based Formative assessment</p>	<p>All teachers/ HODS/ HOKS</p>	<p>http://timssandpirls.bc.edu/timss2019/frameworks/framework-chapters/mathematics-framework/</p> <p>http://www.iea.nl/fileadmin/user_upload/General_Assembly/56th_GA/Study_presentations/eTIMSS_2019_Development_GA.pdf</p> <p>http://www.keepeek.com/Digital-Asset-Management/oced/education/pisa-2015-results-volume-iv_9789264270282-en#.WcZUDsgjE2w#page2</p> <p>Practice questions: https://www.nfer.ac.uk/TIMSS/sample-questions.cfm</p> <p>http://www.edinformatics.com/timss/timss_intro.htm</p> <p>http://www.oecd.org/pisa/pisaproducts/pisa2012-2006-rel-items-maths-ENG.pdf</p> <p>http://www.oecd.org/pisa/test-2012/</p> <p>http://www.oecd.org/pisa/test/financialliteracytest/</p> <p>http://www.oecd.org/</p>

