SCIENCE SECONDARY AGENDA PARAMETERS ACTION PLAN- 2017-18

Focus	Modification of Curriculum/Action	Success/Impact Indicators:	When?	Where?	Who?	Useful Links
YEAR 7: **TIMSS/PISA:** **Addressing gaps in knowledge** **Scientific Literacy (PISA)** - Explain phenomena scientifically - Evaluate and design scientific enquiry - Interpret data and evidence scientifically **Knowledge and system:** -Living Sciences - Earth Sciences **CAT4:** - Enhance reasoning skills **Progress Test Science** **As a Group:** - To improve the SAS score for students of the cohort from 59% in 2016-17 to higher in 2017-18. **Gender wise Target:** - The girls (52%) of Year 7 2016-17 did not perform well in comparison to the boys (66%). - They are currently in Year 8; different strategies need to be used in classes to improve their learning skills. **Curriculum Content:** - Chemistry and Physics 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 **SCIENTIFIC INVESTIGATIONS** Electricity Rocks LIFE STAGES IN HUMAN CYCLE Properties of states of matter **Work Scientifically:** - To further, embed our effective strategies to raise areas- Working scientifically and Application of K&U in same and different contexts. **SCIENTIFIC INVESTIGATIONS** FORMULATING QUESTIONS FROM INVESTIGATIONS MAKING RECORDINGS CONCLUSIONS FROM RESULTS **Student Wise analysis:** - Work on identified low stanine students, SEND and Emiratis in year 8 with personalized support during break time	**Modification of Curriculum** ➢ Modified SOWs to accommodate: • Scientific enquiry skills • Introduction to Earth Sciences **In lessons:** ➢ **Provision in lesson plan through starter/mid-plenaries/plenaries to enhance students to :** • Explain phenomena scientifically • Evaluate and design scientific enquiry • Interpret data and evidence scientifically • Enhancing students' mental ability to solve problems ➢ **Effective questioning to enhance:** • Critical thinking • Reasoning skills of the students • Problem solving skills ➢ **Scientific Enquiry:** • Students practiced enquiry-based questions in lessons. • Weekly one lesson dedicated to scientific investigations. ➢ **NAP focused Home Learning to further embed critical thinking, critical and problem solving reasoning skills.** • PTS/ PISA/TIMSS styled questions • Comprehension based question • Planning • Enquiry based questions • Data based questions • Further deepening critical thinking and reasoning skills. • Mental ability based questions ➢ Embed Using CAT4 data to personalize the lesson plan improving learning skills of boys/ Emirati/SEND students ➢ Home learning focused more on Chemistry and physics. ➢ Personalized Homework for SEND and low stanine students. ➢ Extra support lessons for Emirati students **Evaluate learning and Assessment outcomes against international benchmark TIMSS/PISA.** **Reading:** Encourage and embed the habit of reading in students.	**Most of the students will be able to:** **Explain phenomena scientifically:** - 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. **Evaluate and design scientific enquiry** - They can plan and conduct experiments involving one or more independent variables in a constrained context. - They can explain an experimental design, drawing on elements of procedural and epistemic knowledge. **Interpret data and evidence scientifically** - Students interpret information from tables, graphs, and pictorial diagrams and draw conclusions. **Few students will be able to:** - Draw appropriate conclusions that go beyond the data and provide justifications for their choices.	6 weekly Termly Ongoing	Outcome based Formative assessments Home learnings Summative assessments	All teachers/ HODS/ HOKS	http://timssandpirls.bc.edu/timss2019/frameworks/framework-chapters/science-framework/science-practices-in-timss-2019/ http://www.iea.nl/fileadmin/user_upload/General_Assembly/56th_GA/Study_presentations/eTIMSS_2019_Development_GA.pdf **Practice questions**: https://www.nfer.ac.uk/TIMSS/sample-questions.cfm http://www.edinformatics.com/timss/timss_intro.htm https://nces.ed.gov/timss/pdf/timss2011_g8_science.pdf http://www.oecd.org/pisa/pisaproducts/pisa-test-questions.htm http://www.oecd.org/pisa/test/ http://www.oecd.org/pisa/38709385.pdf https://www.oecd.org/pisa/pisaproducts/Take%20the%20test%20e%20book.pdf https://www.gl-assessment.co.uk/media/1382/ptseries_assessment_overview.pdf

SCIENCE-NATIONAL AGENDA PARAMETERS ACTION PLAN						
Focus	**Modification of Curriculum/Action**	**Success/Impact Indicators:**	**When?**	**Where?**	**Who?**	**Useful Links**
YEAR 8: **TIMSS/PISA:** **Addressing gaps in knowledge** **Scientific Literacy (PISA)** - Explain phenomena scientifically - Evaluate and design scientific enquiry - Interpret data and evidence scientifically **Knowledge and system:** -Living Sciences - Earth Sciences **CAT4:** - Enhance reasoning skills **Progress Test Science** As a Group: - To improve the SAS score for students of the cohort from 56% in 2016-17 to higher in 2017-18. **Gender wise Target:** - To have specific and personalized 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:** Chemistry and Biology are two 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 areas- Working scientifically and Application of K&U in same and different contexts. - Rocks, Inheritance, Chemical changes, Energy an interactions in Ecosystem. Focus in physics- speed, light, Universe, **Scientific Investigations:** - Variables and recording data **Student Wise analysis:** Work on identified low stanine students, SEND and Emiratis in year 9 with personalized support during break time	☐ **Modification of Curriculum** ➢ Modified SOWs to accommodate: • Scientific enquiry skills • Reproduction in animals **In lessons:** ➢ **Provision in lesson plan through starter/mid-plenaries/plenaries s to enhance students to:** • Explain phenomena scientifically • Evaluate and design scientific enquiry • Interpret data and evidence scientifically • Enhancing students' mental ability to solve problems ➢ **Effective questioning to enhance:** • Critical thinking • Reasoning skills of the students • Problem solving skills ➢ **Scientific Enquiry:** • Students practiced enquiry-based questions in lessons. • Weekly one lesson dedicated to scientific investigations. ➢ **NAP focused Home Learning to further embed critical thinking and reasoning skills.** • PISA/TIMSS/PTS styled questions • Comprehension based question • Planning • Enquiry based questions • Data based questions • Mental ability based questions • Further deepening critical thinking and reasoning skills. ➢ Embed Using CAT4 data to personalize the lesson plan improving learning skills of boys/ Emirati/SEND students ➢ Hands on activities(investigations) for boys ➢ Home learning focused more on Chemistry and physics. ➢ Personalized Homework for SEND and low stanine students. ➢ Extra support lessons for Emirati students ☐ **Evaluate learning and Assessment outcomes against international benchmark TIMSS/PISA.** ☐ **Reading:** Encourage and embed the habit of reading in students.	**Most of the students will be able to explain:** **Explain phenomena scientifically:** - 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. **Evaluate and design scientific enquiry** - They can conduct experiments involving two or more independent variables in a constrained context. - They can justify an experimental design, drawing on elements of procedural and epistemic knowledge. **Interpret data and evidence scientifically** - 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.	6 weekly Termly Ongoing	Ongoing – 6 weekly review Outcomes based Formative assessment	All teachers/ HODS/ HOKS	http://timssandpirls.bc.edu/timss2019/frameworks/framework-chapters/science-framework/science-practices-in-timss-2019/ http://www.iea.nl/fileadmin/user_upload/General_Assembly/56th_GA/Study_presentations/eTIMSS_2019_Development_GA.pdf **Practice questions**: https://www.nfer.ac.uk/TIMSS/sample-questions.cfm http://www.edinformatics.com/timss/timss_intro.htm https://nces.ed.gov/timss/pdf/timss2011_g8_science.pdf http://www.oecd.org/pisa/pisaproducts/pisa-test-questions.htm http://www.oecd.org/pisa/test/ http://www.oecd.org/pisa/38709385.pdf https://www.oecd.org/pisa/pisaproducts/Take%20the%20test%20e%20book.pdf https://www.gl-assessment.co.uk/media/1382/ptseries_assessment_overview.pdf

Focus	Modification of Curriculum/Action	Success/Impact Indicators:	When?	Where?	Who?	Useful Links
YEAR 9/10: **TIMSS/PISA:** **Addressing gaps in knowledge** **Scientific Literacy (PISA)** - Explain phenomena scientifically - Evaluate and design scientific enquiry - Interpret data and evidence scientifically **Knowledge and system:** -Living Sciences - Earth Sciences **CAT4:** - Enhance reasoning skills **Progress Test Science** **As a Group:** - To improve the SAS score for students of the cohort from 77% in 2016-17 to higher in 2017-18. **Gender wise Target:** - To have specific and personalized strategies in place to further increase performance of girls in 2017-18. - They are currently in Year 10; different strategies need to be used in classes to improve their learning skills. **Curriculum Content:** - Chemistry and Physics are two identified areas to further 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. - To further, embed our effective strategies to raise areas- Working scientifically and Application of K&U in same and different contexts. Earth Science Effects of smoking Light Inheritance Sound Accuracy and Making Conclusions Photosynthesis **Scientific Investigations** Variables Health and Safety Reliability	**Modification of Curriculum** ➢ Modified SOWs to accommodate: • Scientific enquiry skills • understanding of concepts from the Earth and space systems **In lessons:** ➢ **Provision in lesson plan through starter/mid-plenaries/plenaries to enhance students to :** • Explain phenomena scientifically • Evaluate and design scientific enquiry • Interpret data and evidence scientifically • Enhancing students' mental ability to solve problems ➢ **Effective questioning to enhance:** • Critical thinking • Reasoning skills of the students • Problem solving skills ➢ **Scientific Enquiry:** • Students practiced enquiry-based questions in lessons. • Weekly one lesson dedicated to scientific investigations. ➢ **NAP focused Home Learning to further embed critical thinking and reasoning skills.** • PISA/TIMSS styled questions • Comprehension based question • Planning • Enquiry based questions • Data based questions • Further deepening critical thinking and reasoning skills. • Mental ability based questions ➢ Embed Using CAT4 data to personalize the lesson plan improving learning skills of boys/ Emirati/SEND students ➢ Home learning focused more on Chemistry and physics. ➢ Personalized Homework for SEND and low stanine students. ➢ Extra support lessons for Emirati students **Evaluate learning and Assessment outcomes against international benchmark TIMSS/PISA.** **Reading:** Encourage and embed the habit of reading in students.	**Most of the students will be able to:** **Explain phenomena scientifically:** - Students can use abstract scientific ideas or concepts to explain unfamiliar and more complex phenomena, events and processes involving multiple causal links. **Evaluate and design scientific enquiry** - They can apply more sophisticated epistemic knowledge to evaluate alternative experimental designs and justify their choices and use theoretical knowledge to interpret information or make predictions. **Interpret data and evidence scientifically** - 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.	6 weekly Termly Ongoing	Ongoing – 6 weekly review Outcomes based Formative assessment	All teachers/ HODS/ HOKS	http://timssandpirls.bc.edu/timss2019/frameworks/framework-chapters/science-framework/science-practices-in-timss-2019/ http://www.iea.nl/fileadmin/user_upload/General_Assembly/56th_GA/Study_presentations/eTIMSS_2019_Development_GA.pdf **Practice questions**: https://www.nfer.ac.uk/TIMSS/sample-questions.cfm http://www.edinformatics.com/timss/timss_intro.htm https://nces.ed.gov/timss/pdf/timss2011_g8_science.pdf http://www.oecd.org/pisa/pisaproducts/pisa-test-questions.htm http://www.oecd.org/pisa/test/ http://www.oecd.org/pisa/38709385.pdf https://www.oecd.org/pisa/pisaproducts/Take%20the%20test%20e%20book.pdf https://www.gl-assessment.co.uk/media/1382/ptseries_assessment_overview.pdf