

Enviro-Life Sciences Symposium 2009 – List of Concurrent Sessions

CONCURRENT SESSION 1 (1140 AM – 1215 PM)	Session Code
<p>Category : Leadership / Innovation – Principal and VP Dunman Secondary School Target audience : School Leaders/ Key Personnel / Teachers Title: A Whole School Approach to Innovation and Excellence- Dunman Secondary School as a Case Study Synopsis: The year 2004 marked a turning point for Dunman Secondary School where the school was confronted with the major challenge of restructuring its School Based Curriculum to ensure quality results but relevance to students. A whole school approach to innovation was adopted with brainstorming and ideas generation becoming a regular feature in the school landscape. An overarching framework helped to ensure alignment. Many curriculum innovations which cut across departments were adopted and refined each year to ensure maximum benefit to students. Our innovation approach has been extended to our PRIME project with a focus on setting up a variety of innovation hubs. Five years down the road and overcoming many challenges along the way, our PRIME project is completed and Dunman Secondary School is progressing well attaining many accolades in the process. The school has received a Gold Value Added Award for the Express Stream for the past 4 years and a Gold Value Added Award this year in addition to the Lee Hsien Loong Award for Innovations in the Normal Stream. We will share how a culture of innovation and care (Daring and Duty) has helped Dunman Secondary School to achieve its strategic goals.</p>	BS01
<p>Category : Science - Dunman High School, E4 Cluster Target audience : Upper Secondary Chemistry Teachers Title: In-House Videos & the 5'E' Instructional Model Synopsis : The teachers of Dunman High School strive to make the learning of Chemistry an interesting experience for the students, and one which stimulates greater interest and curiosity in the subject. Based on these objectives, the school has created in-house videos for the teaching and learning of Chemistry topics such as Acids, Bases & Salts, Energy Changes and Speed of Reaction. The school also adopted the 5'E' Instructional Model in teaching the topic on Redox, where students learnt the topic through the 5 stages of 'Engagement', 'Exploration', 'Explaining', 'Extension' and 'Evaluation'. The teaching package has been well received by a great majority of students.</p>	BS02
<p>Category : Science – Changkat Changi Secondary School, E4 Cluster Target audience : Upper Secondary Physics Teachers Title: Revision through Clearing Misconceptions Synopsis : Teachers at Changkat Changi Secondary School share how they have structured Physics revision lessons to help them to sieve out lingering misconceptions by the Secondary Four students on key concepts, and to ensure maximum retention of knowledge by the students. During a revision lesson, the students start off with some questions which help to surface some of the misconceptions which the teacher can clarify through the rest of the lesson. A short quiz or test is administered at the end of the lesson to reinforce the learning.</p>	BS03
<p>Category : Science - Dunman High School, E4 Cluster Target audience : Secondary Science teachers Title: Using the BSCS 5E Model to Enhance the Teaching of Biology Synopsis : The science teachers at Dunman High School continuously strive to improve their instructional practices to enhance student learning. To do so, they use the BSCS 5E Instructional Model, also known as the 5'E' Model, to craft lesson packages. The model is a framework which consists of distinct phases, and lessons follow a</p>	BS04

CONCURRENT SESSION 1 (1140 AM – 1215 PM)	Session Code
particular sequence and organization. Each phase has a specific function and contributes to the teacher's coherent instruction and to the learners' formulation of a better understanding of scientific knowledge, attitudes, and skills. Once internalized, it can explain the many instantaneous decisions that science teachers must make in classroom situations.	
<p>Category : Science – E3 Cluster, Science Pedagogical Innovation Committee – Sharing by East Spring Secondary School Target audience : Primary School teachers Title: Sharing of Misconceptions in Physics (ENERGY) Synopsis : The complex and abstract nature of Physics makes the subject susceptible to misconceptions and 'myths'. If such errors or misconceptions are not addressed at the primary level, students will continue to harbour these misconceptions as they progress up the educational levels, and this will hinder their learning and deep understanding at the secondary level. Collaboration between the primary and secondary school teachers will help to address the common misconceptions to ensure continuity and rigour in the key science concepts taught from the primary to the secondary level. As part of the efforts to promote such collaboration, the secondary level science teachers will share on key Physics concepts specifically in the topic of Energy.</p>	BS05
<p>Category : Science – E3 Cluster, Science Pedagogical Innovation Committee – Sharing by Springfield Secondary School Target audience : Primary School teachers Title: Sharing of Misconceptions in Physics (FORCES) Synopsis : The complex and abstract nature of Physics makes the subject susceptible to misconceptions and 'myths'. If such errors or misconceptions are not addressed at the primary level, students will continue to harbour these misconceptions as they progress up the educational levels, and this will hinder their learning and deep understanding at the secondary level. Collaboration between the primary and secondary school teachers will help to address the common misconceptions to ensure continuity and rigour in the key science concepts taught from the primary to the secondary level. As part of the efforts to promote such collaboration, the secondary level science teachers will share on key Physics concepts specifically in the topic of Forces.</p>	BS06
<p>Category : ICT – Gongshang Primary School, E3 Cluster Target audience : Primary school teachers Title: Exploring the possibilities of the IWB(Interactive White Board) in teaching & learning Synopsis : As learning is an active social process, student engagement is important in helping our students learn more effectively. The Interactive White Board (IWB) is an innovative tool used in the classroom to increase student engagement during the learning process. IWBs can promote interaction among the students and between the students and the teacher, as well as greater student engagement with the learning materials. Gongshang Primary School will share some ideas on how teachers can tap on this innovative tool to enhance teaching and learning in the classroom.</p>	BS07
<p>Category : Mother Tongue – Dunman Secondary School, E3 Cluster Target audience : Secondary School teachers Title: Differentiated Instruction (DI) in Essay Writing /Letter Writing in CL lessons Synopsis : In line with Dunman Secondary School's philosophy that every child has different abilities and learns differently, the school's Chinese Language Unit will be sharing on their experiences in the use of DI in the context of Chinese Language classroom</p>	BS08

CONCURRENT SESSION 1 (1140 AM – 1215 PM)	Session Code
<p>teaching in the three courses, Higher Chinese (HCL), Normal Academic (NA) and Basic Chinese (NT). At the end of the sharing, participants will be able to 1) understand the rationale for introducing D.I and its impact on the learning process; 2) view examples of D.I lessons and differentiated assignments for students; and 3) consider the different learning styles to meet individual student's learning needs.</p>	
<p>Category : Mathematics – Sharing by Mathematics Department, Dunman Secondary School, E3 Cluster Target audience : Secondary School Mathematics teachers Title: Pedagogical Innovations in the Mathematics Classroom Synopsis : In the spirit of "Teach Less Learn More", the Mathematics Department at Dunman Secondary School constantly explores different ways to make learning of the subject more engaging, effective and meaningful for the students. This presentation on "Pedagogical Innovations in the Mathematics Classroom" comprises two parts. The first part looks at how graphing calculators are incorporated in classroom teaching to improve students' ability to interpret graphs. The second part of the presentation relates to how Differentiated Instruction (D.I) is used in the teaching of Trigonometry.</p>	BS09
<p>Category : English – Sharing on Lesson Study by Junyuan Secondary School, E3 Cluster Target audience : Secondary School teachers Title: Summary Writing Protocol Synopsis: Students generally find Paper II in the English 'O' Level Syllabus to be the most challenging paper. However, Paper II can provide the greatest leverage for improvement in scores. With this in mind, a Lesson Study (LS) group at Junyuan Secondary School set out to come up with a protocol that will help its students. The teachers noted that students face two challenges: identification of relevant points, and crafting of points in their own words without distorting the original meaning. This protocol includes using Cooperative Learning strategies to get students to identify the relevant summary points and condense them in their own words. At the same time, it also considers the different language abilities of students in the class. The LS group observed the conduct of the classroom lesson and met up for further evaluation.</p>	BS10
<p>Category : Craft and Technology – Sharing by Dunman Secondary School C&T Department Target audience : All teachers Title: Experiencing the D&T Culture & Lower Secondary Art and Homec Programmes in Dunman Secondary School Synopsis : The Craft and Technology Unit in Dunman Secondary will share on the following: 1) The Homec Unit will share on experiential learning through the realisation of a restaurant at the end of the year for Secondary 1 students, and Problem-Based Learning (PBL) through interviewing real cases of family members suffering from dietary diseases for Secondary 2 students. 2) The Art Unit will be sharing on the Secondary 2 programme, "Saving Gaia". This involves the integration of a learning journey and features the work of various artists to enhance students' learning so that they can apply their knowledge and creativity using recycled material sculptures. 3) The D&T Unit will share on how it has succeeded over the years in creating a system and culture that has contributed to its good results and achievements in the area of teaching and learning.</p>	BS11

CONCURRENT SESSION 2 (1225 PM – 1300 PM)	Session Code
<p>Category : Science - Dunman High School, E4 Cluster Target audience : Upper Secondary Science Teachers Title: Physics Demonstration with Socratic Questioning Synopsis : Demonstration is commonly used in science lessons. It is a good way to engage the student by illustrating scientific principles. Though more time is needed, with clear purpose and carefully crafted questions, the process of conducting demonstrations can be enriching to the students as they learn to be more observant and are encouraged to question. Common objects such as balloons and chopsticks can be used to effectively illustrate Physics principles. Through Socratic Questioning and the critical thinking (elements of thinking) model, students at Dunman High School are encouraged to think about what they have observed through the demonstrations.</p>	BS12
<p>Category : Science – Changkat Changi Secondary School, E4 Cluster Target audience : Lower Secondary Science teachers Title: Atomic Structure and Isotopes Synopsis : Students usually find it difficult to visualise the structure of an atom and this impedes their ability to understand more complex concepts like isotopes and chemical bonding. This sharing focuses on how the teacher uses models which students are familiar with to help students learn about atomic structure. To further strengthen students' learning, the teacher also uses a variety of cooperative learning strategies to help them understand the topic of atomic structure and isotopes.</p>	BS13
<p>Category : Science– E3 Cluster, Science Pedagogical Innovation Committee – Sharing by Dunman Secondary School Target audience : Primary School teachers Title: Sharing of Misconceptions in Physics (ELECTRICITY) Synopsis : The complex and abstract nature of Physics makes the subject susceptible to misconceptions and 'myths'. If such errors or misconceptions are not addressed at the primary level, students will continue to harbour these misconceptions as they progress up the educational levels, and this will hinder their learning and deep understanding at the secondary level. Collaboration between the primary and secondary school teachers will help to address the common misconceptions to ensure continuity and rigour in the key science concepts taught from the primary to the secondary level. As part of the efforts to promote such collaboration, the secondary level science teachers will share on key Physics concepts specifically in the topic of Electricity.</p>	BS14
<p>Category : Science – E3 Cluster, Science Pedagogical Innovation Committee – Sharing by Siglap Secondary School Target audience : Primary School teachers Title: Sharing of Misconceptions in Physics (MAGNETISM) Synopsis : The complex and abstract nature of Physics makes the subject susceptible to misconceptions and 'myths'. If such errors or misconceptions are not addressed at the primary level, students will continue to harbour these misconceptions as they progress up the educational levels, and this will hinder their learning and deep understanding at the secondary level. Collaboration between the primary and secondary school teachers will help to address the common misconceptions to ensure continuity and rigour in the key science concepts taught from the primary</p>	BS15

CONCURRENT SESSION 2 (1225 PM – 1300 PM)	Session Code
to the secondary level. As part of the efforts to promote such collaboration, the secondary level science teachers will share on key Physics concepts specifically in the topic of Magnetism.	
<p>Category : Science – E3 Cluster Primary Schools Target audience : Primary School teachers Title: DI Science lessons in E3 Primary Schools Synopsis : The PEC's (Primary Science) main focus in 2009 is Differentiated Instruction. The primary schools have developed and shared DI lessons among themselves. This sharing will focus on the DI lessons developed by the E3 primary schools and some of the insights on the development process.</p>	BS16
<p>Category : ICT – Sharing by East Spring Secondary School, E3 Cluster Target audience : HOD and SH for ICT, School Leaders interested in ICT Title: East Spring Secondary Online ICT Planning Synopsis : East Spring Secondary School will share how an online process and review system is used to monitor the school's ICT implementation. The system will assist the school in monitoring its targets for the BY(i)TES score and Baseline ICT Standards, as well as review the implementation of its ICT Plan. The system allows multiple users to submit their plans, and its search and collation features allow users to streamline and sort the school's plans into segments which are useful for the users. This reduces the time and effort needed to filter through different documents.</p>	BS17
<p>Category : Mother Tongue (ML) – Sharing by Dunman Secondary School, E3 Cluster Target audience : All Malay Language teachers / Language teachers Title: Melayu GEREK!!! Synopsis : The "Melayu GEREK" board game which recently won a Gold Award at the NIQCC makes the learning of Malay Language vocabulary and grammar fun and interesting. Most importantly, students will have a better understanding of grammar after playing the games. Students also look forward to Malay language lessons since this game stimulates their interest in the subject. The Dunman Secondary School Malay Language Unit will share their prototype with language teachers.</p>	BS18
<p>Category : Mathematics – Sharing by Junyuan Secondary School, E3 Cluster Target audience : Lower Secondary Mathematics teachers Title: Use of ICT (Excel) in the Teaching of Lower Secondary Statistics Synopsis : The teaching of "Mean, Median and Mode" in Statistics has traditionally been very dry, and comprises mainly teacher-talk and student-practice. During the ICT lesson, students take ownership of their own learning with the teacher as the facilitator. In addition, the ICT lesson incorporates the "I&E" (Intuitive and Experimental) approach. After observing different sets of data in Excel, students are able to formulate an initial hypothesis and test it out on subsequent data. Through the ICT lesson and I&E process, students are exposed to HOT mental skills such as analysing, synthesising and summarising the data. The teachers will also share how they improve the lesson after peer observation during lesson study.</p>	BS19
<p>Category : English-Literature and Music – Sharing by Dunman Secondary School, E3 Cluster Target audience : Secondary School teachers Title: Music –English-Literature Fusion Programme</p>	BS20

CONCURRENT SESSION 2 (1225 PM – 1300 PM)	Session Code
<p>Synopsis : This TLLM Ignite Programme has been designed to integrate the learning of Music, English Language and English Literature for all Secondary 1 students including NT students who enjoy the subject tremendously. The teachers -in-charge of the programme will share on how the programme has been developed and carried out, as well as the impact of the programme on students' learning. The programme features team teaching and innovative time-tabling.</p>	
<p>Category : Humanities – Sharing by Dunman Secondary School, E3 Cluster Target audience : Secondary School teachers Title: Pandora's Box or Non-Issue (Foreign Workers)? Synopsis : This TLLM Ignite project integrates the teaching of English language and Social Studies. Using the Problem-Based Learning (PBL), students were provided with an authentic case study for investigation. The 20 week project included (1) Investigating the problem and designing a questionnaire, (2) Conducting of fieldwork to gather information and data; and (3) Report writing/ Oral Presentation/ Reflection. Throughout the whole process, students worked in groups and were guided in their work by a set of rubrics. Besides developing subject - related skills, the project also incorporated skills from the DARE (Dunman All Round Excellence) Framework.</p>	BS 21
<p>Category : Innovations in Character Education, Sharing by Dunman Secondary School, E3 Cluster Target audience : Secondary School teachers Title: Innovations in the Normal Course – The FLINT Programme Synopsis : In 2009, Dunman Secondary School has the distinction of being one of the two schools in Singapore awarded the inaugural Lee Hsien Loong Award for Innovations in the Normal Course. This sharing will feature the school's sustained efforts to ensure a quality school experience for its Normal Technical (NT) students and better prepare them for the future through the FLINT programme. The school's FLINT programme has evolved since its first inception in 2006, and student development programmes are infused into instructional programmes to bring about greater relevance and impact to students' learning. Other initiatives which will be shared are the Tourism & Hospitality, and Digital Photography Electives for the Secondary 3 NT students.</p>	BS22