SIR MANASSEH MEYER
International School

Secondary School

Grade 8 Curriculum

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Grade 8 Curriculum

English

Maths

Science

Humanities

Jewish Education

Languages

Art

PE

Drama

Music

Makerspace

PSHE

GRADE 8 CURRICULUM

English

Students will be empowered to become independent, creative, critical thinking readers, writers and orators.

Assessment focuses on the three key skills of reading, writing, and speaking and listening. Through the year we will study the following units of work:

- Portraits of People (study of selected poetry pre-1900 and modern)
- The Hunger Games by Suzanne Collins (study of a novel)
- Macbeth by William Shakespeare (study of Shakespearean Tragedy)
- Opinion Writing (study of writing to argue an opinion)

Reading

Students will be encouraged to build their skills of inference and analysis in order to understand the writer's craft. They will be taught how to write convincingly about texts, and to appreciate the importance of context.

Writing

Students will be supported to learn how to independently plan and structure extended pieces of writing. They will extend their repertoire of methods to engage the reader, including using literary devices. Accurate grammar, punctuation, vocabulary and spelling underpin good writing and these skills are taught throughout all units of work.

Speaking and Listening

Students will learn through discussion and debate; role play, and presentation activities. Speaking and listening tasks also develop social skills such as appropriate modes of speech (e.g. levels of formality; how to express disagreement politely) and turn taking in discussion.

GRADE 8 CURRICULUM

Maths

We follow the Singapore Maths curriculum. In Grade 8 the topics and skills acquired are outlined below.

Ratio and proportion

Students will learn about:

i Map scales (distance and area)
ii Direct and inverse proportion

Algebraic expressions and formulae

Students will learn about:

i Expansion of the product of Algebraic expressions
ii Changing the subject of a formula
iii Finding the value of an unknown quantity in a given formula
iv Use of special products of Algebraic expressions
v Factorisation of linear expressions
vi Factorisation of quadratic expressions
vii Multiplication and division of simple algebraic fractions
viii Addition and subtraction of algebraic fractions with linear or quadratic denominator

Functions and Graphs

Students will learn about:

i Quadratic functions
ii Graphs of quadratic functions and their properties: (a) positive or negative coefficient of x-squared, (b) maximum and minimum points, (c) symmetry

Equations and Inequalities

Students will learn about:

i Concept of equation and inequality
ii Solving simple inequalities in the form of $ax+b \leq c$ and $ax+b<c$ and representing the
iii solutions on the number line
iv Graphs of linear equations in two variables
v Solving simultaneous linear equations in two variables by (a) substitution and elimination methods and (b) graphical method
vi Solving quadratic equations in one variable by factorization
vii Formulating a pair of linear equations in two variables to solve problems

Congruence and Similarity

Students will learn about:

i Congruent figures
ii Similar figures
iii Properties of similar triangles and polygons: (a) corresponding angles are equal and (b) corresponding sides are proportional
iv Enlargement and reduction of a plane figure
v Scale drawings
vi Solving simple problems involving congruence and similarity

Pythagoras' theorem and trigonometry

Students will learn about:

i Use of Pythagoras' theorem
ii Determining whether a triangle is right-angled given the lengths of three sides
iii Use of trigonometric ratios of acute angles to calculate unknown sides and angles in right-angled triangles.

Mensuration

Students will learn about:

i Volume and surface area of pyramid, cone and sphere

Data Analysis

Students will learn about:

i Analysis and interpretation of (a) dot diagrams, (b) histograms and (c) stem-and-leaf diagrams
ii Purposes and uses, advantages and disadvantages of the different forms of statistical representations
iii Explaining why a given statistical diagram leads to misinterpretation of data
iv Mean, mode and median as measures of central tendency for a set of data
v Purposes and use of mean, mode and median
vi Calculation of the mean for grouped data

Probability

Students will learn about:

i Probability as a measure of chance
ii Probability of single events (including listing all the possible outcomes in a simple chance situation to calculate probability)

GRADE 8 CURRICULUM

Science

Photosynthesis and plant growth

Learners build on their previous knowledge of photosynthesis and water and the transport of water and minerals in flowering plants to develop their knowledge of:

i the process of photosynthesis, including the word equation
ii the importance of water and mineral salts to plant growth

The Periodic table and preparing salts

Learners build on their previous knowledge of the Periodic Table, particle theory and chemical reactions to develop their knowledge of:

i The structure of an atom
ii The methods and discoveries of Rutherford and other scientists
iii The structures of the first twenty elements of the Periodic Table
iv Trends in groups and periods
v Preparing some common salts by the reactions of metals or metal carbonates with acid
vi Writing word equations to describe reactions of metals or metal carbonates with acids

Electrostatics and electric currents

Learners build on their previous knowledge of different types of energy and energy transfers to develop their knowledge of:

i electrostatics and the concept of charge, including digital sensors
ii simple series and parallel circuits
iii how common types of component, including cells (batteries), affect current
iv how current divides in parallel circuits
v measuring current and voltage
vi measuring resistance

Sexual reproduction in flowering plants

Learners build on their previous knowledge of reproduction and plant growth to develop their knowledge of:

i Sexual reproduction in flowering plants
ii The processes of pollination, fertilisation, seed formation and dispersal

Reactivity and the rates of reaction

Learners build on their previous knowledge of chemical reactions to develop their knowledge of:

i The reactivity series of metals with oxygen, water and dilute acids
ii Displacement reactions
iii The effects of concentration, particle size, temperature and catalysts on the rate of a reaction

Moments, pressure and density

Learners build on their previous knowledge of forces and movement to develop their knowledge of:

i objects turning on a pivot and the principle of moments
ii pressure as caused by the action of force on an area
iii pressures in gases and liquids (qualitative only)
iv the densities of solids, liquids and gases

Ecology

Learners build on their previous knowledge of organisms in their environment to develop their knowledge of:

i Constructing keys to identify plants and animals
ii Food chains, food webs and energy flow including the role of decomposers
iii How living things are adapted to their habitats
iv How characteristics are inherited
v Selective breeding
vi The work of Darwin on natural selection and other scientists studying the natural world

Chemical reactions

Learners build on their previous knowledge of chemical reactions and energy transfers to develop their knowledge of:

i Exothermic and endothermic reactions and processes
ii The thermal (heat) energy transfer processes of conduction, convection and radiation
iii Cooling by evaporation

Energy crisis and human influence

learners build on their previous knowledge of energy and the environment to develop their knowledge of:

i factors affecting the size of populations
ii some effects of human influences on the environment
iii the world's energy needs

Scientific enquiry

Work focuses on:

i Selecting ideas and producing plans for testing based upon previous knowledge, understanding and research
ii Suggesting and using preliminary work to decide how to carry out an investigation
iii Deciding which measurements and observations are necessary and what equipment to use
iv Deciding which apparatus to use and assessing any hazards in the laboratory
v Making sufficient observations and measurements to reduce error and make results more reliable
vi Using a range of materials and equipment and controlling risks
vii Making observations and measurements
viii Choosing the best way to present results
ix Describing patterns (correlations) seen in results
x Interpreting results using scientific knowledge and understanding
xi Drawing conclusions
xii Evaluating the methods used and refining for further investigations
xiii Explaining results using scientific knowledge and understanding; communicating this clearly to others

GRADE 8 CURRICULUM

Humanities

Geography

Students will learn about some of the ways in which individuals or organisations can make a real difference to people's lives, by influencing others to support them in their humanitarian work in the community. By considering the role of Non-Governmental Organisations (NGOs), students will reflect on the leadership qualities of values, vision and visible results to develop their awareness of how communities can be empowered to make a real difference of people and places. Students will explore the ways in which people become leaders, as well as the skills and methods of effective leadership and their impact on teams. Students will have the opportunity to determine their current leadership style and practise their leadership skills in a variety of interactive learning activities. They will also examine ways in which the media influences leadership, through different modes of propaganda, coercion and power.

An important geographical concept is that the world has sufficient resources for the entire population to be adequately housed, fed and enjoy a life in which they do not have to fear absolute poverty. The issue is not the lack of resources, but one of their distribution and the use to which they are put. Students will explore the justice of this use of resources and will consider to what extent the current use of resources can be considered 'fair', and the impact this has on people and other parts of the world. Students deserve to know what their rights are and to understand the meaning of equality and access to necessities. Students scan, in this way, learn about how they should be treated and how they should treat others. More importantly, gaining knowledge about human rights law empowers the young from the classroom to the community.

History

Communities develop when different groups of people encounter each other, interact and, despite their differences, find shared ground and negotiate ways in which they can live alongside each other. History shows us numerous examples of successful communities emerging all around the world, even where there was once conflict. Whether self-forming or the result of external forces, these communities are based on a shared sense of belonging - the result of identifying and appreciating common ground and mutual benefit. However, this shared sense of belonging is not always the natural outcome; examples of 'failed' communities show that, at times, the differences are felt to be too great, or those involved are simply unwilling to negotiate towards building a new community together. As individuals, we all make decisions and choices every day, all day long. Regardless of whether we consider our actions or just act without thought, we are responsible for the consequences of these actions, whether they are good or bad. Studying examples of significant success in the past gives students the opportunity to explore the journey taken by those involved before the final goal was achieved.

Finally, an inquiry-based approach tracing Singapore's origin will be undertaken; identifying Singapore as a port-of-call serving the maritime trade from the 14th to 19th centuries. The key skills of the IGCSE History course will underpin the learning and delivery of this unit, purposefully preparing the students for their IGCSE's.

GRADE 8 CURRICULUM

Jewish Education

Overview

This course provides students with opportunities to learn about Judaism and to learn from Judaism. The curriculum covers 4 key areas: Jewish Values/ Tikun Olam; Jewish History; Israel/ Zionism, and the Holocaust. The curriculum has been designed for SMMIS by our team of international educators.

Students are encouraged to respond to and reflect on the lessons being taught with a strong emphasis on an understanding of the impact that Jewish History has had on the Jewish People today. Jewish values have a central focus in this curriculum where students are encouraged to explore Jewish values from different perspectives that are thought provoking and meaningful. Each class focuses on Jewish values in a way that highlights the distinctive contribution Judaism makes to the challenges of modern life.

This course is taught in an interactive and dynamic way with students being expected to involve themselves in research projects and presentations.

Key Outcomes

Jewish/Universal Values – Tikun Olam

- To know and understand how the Jewish People have engaged in Social Action throughout the ages
- To understand that Jews have a responsibility to have a positive impact on the world
- To understand the many similarities Judaism has with other cultures and shared values
- To develop a lifelong commitment to engaging with the universal values and integrating them into their lives
- To engage in Social Action, as an expression of Jewish values, both inside and outside of the Jewish community

Jewish History and the Jewish People

- To know about and understand the origins and the development of Jewish History and the Jewish People
- To identify with the diversity of individuals and groups that make up the Jewish People
- To understand the impact Jewish History has had and continues to have on the Jewish People today

Israel: Zionism

- To know about and understand the history and development of the modern State of Israel
- To appreciate Israel as central to the Jewish People
- To develop a meaningful and life long relationship with the State of Israel

Holocaust Studies

- To know and understand the causes of World War Two and the Holocaust (Shoah)
- To identify the evolution and spread of antisemitism, Anti-Jewish policies and propaganda
- To identify the consequences of the Holocaust
- To understand the impact the Holocaust has had and continues to have on the Jewish People today
- To develop a meaningful way to remember and ensure that history doesn't repeat itself

GRADE 8 CURRICULUM

Languages

MFL: Mandarin

The Mandarin curriculum aims to develop the 4 essential skills of listening, speaking, reading and writing. Students who study Mandarin sit the Youth Chinese Test (YCT) qualification appropriate to their level at the end of every academic year.

Students will cover the following content:

- Core vocabulary list of 400 words
- Develop listening and speaking of high-occurrence sentence patterns relating to social interaction
- Comfortable in recognizing high-occurrence Mandarin characters and ability to harness electronic medium in Mandarin application and self-learning
- Comfortable in using Mandarin in survival situations showing ability to reach beyond the immediacy of the situation
- Develop insights in given cultural and socio-economic topics

MFL: Ivrit

At SMMIS we follow the philosophy of full immersion of the Hebrew language, creating a rich Hebrew environment, which leads to a mastery of conversational and written Hebrew. A progressive Hebrew language programme is introduced through the use of themes and concepts which are explored in Hebrew.

Hebrew vocabulary holds a main focal point in the study of Hebrew and is emphasised with weekly lists and various games and activities. The students practice their language skills by reading and writing Hebrew in correlation to the topics taught in class.

Secondary School students are expected to be able to write book reports and keep a journal in Hebrew using all the skills acquired. They practice and reinforce these skills through various level appropriate workbooks. Each class is given a set of Matarot, goals to achieve throughout the year.

GRADE 8 CURRICULUM

Art

The Art curriculum follows the International Middle Years Curriculum (IMYC) framework that revolves around the eight central learning dispositions: responsibility, adaptability, enquiry, morality, thoughtfulness, respect, communication and resilience. The curriculum aims to incorporate these life skills through the students' appreciation of art. We seek to promote enthusiasm, a sense of increased personal responsibility and a sense of pride in the artwork produced.

Skills

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Application

Besides the mediums mentioned above, students will be working with clay by using the pinch-pot, slab and coil methods of hand building, and multi-media such as art/colour pencils, oil/chalk pastels, charcoals, colour construction paper, scissors, glue, clay, cloth, paints, ink, bushes, beads, feathers, gems, mosaics, craft sticks, card board, etc. Students will be encouraged to work with various artistic styles of the past and modern time (Realism, Impressionism, Fauvism, Cubism, Pop, Surrealism and Abstract Expressionism) to broaden their artistic horizon.

Objective

Our aim is to develop aesthetic values by providing students with the technical skills needed to perceive and interpret visual images in various media through realism and by using their imagination. Students will be exposed to the design process, creative problem solving, and to help them to see the connections beyond the art studio. Student will be able to recognize, distinguish and appreciate art and cultural influences of different cultures and historical periods and to analyse, compare, interpret, and evaluate one's own art, the art of other students and of major artists. This is with the aim of enhancing creativity and to develop an awareness of each student's inherent creative potential.

GRADE 8 CURRICULUM

PE

The P.E. curriculum is underpinned by the International Middle Years Curriculum (IMYC), facilitating an environment for pupils to develop holistically focusing on academic, social and lifelong skills such as respect, resilience and caring for others in a sporting context. These life skills are enhanced through real-life situations in outdoor and adventure activities.

In PE activities, the aim is to promote student-led learning in order to encourage students to become independent thinkers and creative performers. Therefore, assessment will focus on the following:

- Interest
- Collaboration
- Cooperation
- Skill
- Fitness level

Through a skills centred approach, we aim to provide students with an opportunity to acquire advanced sports skills and strategies focusing on effective performance (attacking, dribbling, teamwork) through a broad range of physical activities:

- Ball games
- Striking games
- Athletics
- Dance
- Swimming activities

By the end of grade 8, pupils are expected to perform a broad range of advanced sports skills, including the monitoring and evaluation of their own performance and that of their peers. Furthermore, pupils should be able to swim a distance of over 50 meters in two different swimming strokes and perform a basic water rescue technique, as well as understanding the importance of leading a physical and active lifestyle. Our curriculum ensures that our pupils acquire a knowledge of the benefits of physical activities at both a local and at an international context.

GRADE 8 CURRICULUM

Drama

Our Drama curriculum focuses on developing the key dramatic skills of:

Making (exploring, devising, shaping, interpreting)
Performing (presenting and producing)
Responding (evaluating and applying knowledge and understanding).

Students will learn drama games, movement, acting and stagecraft skills. The students can expect to develop; self-confidence, imagination, cooperation, concentration, empathy, communication, coordination, problem solving, physical fitness and to develop an appreciation of the arts.

GRADE 8 CURRICULUM

Music

Our Music curriculum aims to develop an appreciation and love of Music in all students through the following aims and activities:

- perform, listen to, review and evaluate music across a range of historical periods, genres, styles and traditions, including the works of the great composers and musicians
- learn to sing and to use their voices, to create and compose music on their own and with others, have the opportunity to learn a musical instrument, use technology appropriately and have the opportunity to progress to the next level of musical excellence
- understand and explore how music is created, produced and communicated, including through the inter-related dimensions: pitch, duration, dynamics, tempo, timbre, texture, structure and appropriate musical notations

GRADE 8 CURRICULUM

Makerspace

The SMMIS Secondary School students apply innovative Makerspace concepts to real-world problems, underpinned by practical skills, including communication, inquiry, collaboration, creativity, problem solving and critical thinking skills.

What Learning Outcomes are Achieved in a Makerspace?

Making and makerspaces are complementary to curriculum driven classes. The SMMIS Secondary School Makerspace Programme involves what are often described as "the 4 C's" of necessary 21st century skills:

- Creative thinking
- Critical thinking
- Collaboration
- Communication

The SMMIS Secondary School Makerspace programme is unique; supportive of our student cohort and their willingness to partake in an exciting, skills-focussed, innovative programme.

Students will partake in a skills-based, hands-on curriculum.
The types of tasks students will participate in include:

Microbits

- Microbit mini projects

Microbit Programming

- Students will be able to create simple coding with DIY projects

Introduction of 3D Modeling

- Fusion 360-2D to 3D CAD designing
- Cura software
- 3D printing

PBL – Project Based Learning Collaborative Tasks

GRADE 8 CURRICULUM

PSHE (Personal Social, Health Education)

PSHE is a developmental program of learning through which children in all grades acquire the knowledge, skills and understanding to manage their lives now and in future. PSHE builds on the skills for students to develop effective relationships, assume greater responsibility and manage personal safety. It will introduce the students to a wider world and enable them to make an active contribution to their communities.