

## Primary Years Programme

### **How the World Works**

Inquiry into

- the natural world and its laws
- the interaction between the natural world (physical and biological) and human societies
- the impact of scientific and technological advances on society and on the environment

### **How We Organise Ourselves**

Inquiry into

- the interconnectedness of human-made systems and communities
- societal decision-making
- economic activities and their impact on humankind and the environment

### **Sharing the Planet**

Inquiry into

- rights and responsibilities in the struggle to share finite resources with other people and other living things
- communities and the relationship within and between them

## Middle Years Programme

### Interdisciplinary Learning

- Develop a deeper understanding of learning skills and apply them in meaningful contexts - integrate conceptual learning, ways of knowing and methods of inquiring from multiple disciplines
- Inquire into compelling issues, ideas and challenges by creating products or explaining phenomena
- Experience the excitement of intellectual discover, including insights into how disciplines complement and challenge one another

### Design

- Develop knowledge, understanding and skills from different disciplines to design and create solutions to problems using the design cycle
- Use and apply technology effectively as a means to access, process and communicate information, model and create solutions, and solve problems
- Develop an appreciation of the impact of design innovations for life, global society and environments
- Understand their responsibility to the community and the environment, and that because decisions can have a huge impact, their ethics and morals can and should be questioned regularly

### Individuals and Societies

- Appreciate human and environmental commonalities and diversity
- Understand the interactions and interdependence of individuals, societies and the environment
- Understand how both environmental and human systems operate and evolve
- Identify and develop concern for the well-being of human communities and the natural environment
- Act as responsible citizens of local and global communities

### Arts

- Make purposeful connections between investigation and practice
- Understand the relationship between art and its contexts
- Respond to and reflect on art
- Deepen their understanding of the world

### Science

- Understand and appreciate science and its implications
- Consider science as a human endeavour with benefits and limitations
- Develop sensitivity towards the living and non-living environments reflect on learning experiences and make informed choices

## Diploma Programme

### Language and Literature

- Develop skills in interpretation, analysis and evaluation
- Develop an understanding of relationships between texts and a variety of perspectives, cultural contexts, and local and global issues, and an appreciation of how they contribute to diverse responses and open up multiple meanings

### Social and Cultural Anthropology

- Explore the characteristics and complexities of social and cultural life
- Develop new ways of thinking about the world that demonstrate the interconnectedness of local, regional and global processes and issues
- Develop as critical thinkers who are open-minded, reflective and ethically sensitive
- Apply anthropological understanding in order to reflect on their own lives and experiences, as well as those of others, transforming their actions in the world.

### Biology/Chemistry

- Appreciate scientific study and creativity within a global context through stimulating and challenging opportunities
- Develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities
- Become critically aware, as global citizens, of the ethical implications of using science and technology
- Develop an appreciation of the possibilities and limitations of science and technology
- Develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge

### Geography

- Develop an understanding of the dynamic interrelationships between people, places, spaces and the environment at different scales
- Develop a critical awareness and consider complexity thinking in the context of the nexus of geographic issues, including:
- Acquiring an in-depth understanding of how geographic issues, or wicked problems, have been shaped by powerful human and physical processes
- Synthesising diverse geographic knowledge in order to form viewpoints about how these issues could be resolved
- Understand and evaluate the need for planning and sustainable development through the management of resources at varying scale

### Theory of Knowledge

- Reflect critically on diverse ways of knowing and specific areas of knowledge
- Consider the role and nature of knowledge in their own culture and those of others
- Be aware of themselves as thinkers, encouraging them to become more acquainted with the complexity of knowledge and its application to real life situations
- Recognise the need to act responsibly in an increasingly interconnected but uncertain world

*Planet or Plastic?* Exhibition Curriculum Links (International Baccalaureate)

**Visual Arts**

- Develop perceptual and analytical skills
- Make artwork that is influenced by personal and cultural contexts
- Develop skills, techniques and processes in order to communicate concepts and ideas

**Design Technology**

- Become effective design problem solvers and ethical designers
- Become more aware of individual, local and global issues linked to design situations

**Film**

- Acquire an understanding of the variety of ways in which film creates meaning
- Develop an understanding of and be able to apply appropriate film language effectively

**Environmental Systems and Societies**

- Appreciate the dynamic interconnectedness between environmental systems and societies
- Value the combination of personal, local and global perspectives in making informed decisions and taking responsible actions on environmental issues
- Be critically aware that resources are finite, that these could be inequitably distributed and exploited, and that management of these inequities is the key to sustainability
- Develop awareness of the diversity of environmental value systems
- Develop critical awareness that environmental problems are caused and solved by decisions made by individuals and societies that are based on different areas of knowledge
- Engage with the controversies that surround a variety of environmental issues
- Create innovative solutions to environmental issues by engaging actively in local and global contexts.

## Chemistry

Subject/Topic/Theme	SL/HL Chemistry: Option A5 Polymers	SL/HL Chemistry: Option A7 Environmental Impact - Plastics
<b>Essential Idea</b>	Polymers are made up of repeating monomer units which can be manipulated in various ways to give structures with desired properties.	Although materials science generates many useful new products there are challenges associated with recycling of and high levels of toxicity of some of these materials.
<b>Understanding(s)</b>		<ol style="list-style-type: none"> <li>1. Plastics do not degrade easily because of their strong covalent bonds.</li> <li>2. Chlorinated dioxins are hormone disrupting, leading to cellular and genetic damage.</li> <li>3. Plastics require more processing to be recycled than other materials.</li> <li>4. Plastics are recycled based on different resin types.</li> </ol>
<b>Applications and skills</b>		<ol style="list-style-type: none"> <li>1. Discussion of why the recycling of polymers is an energy intensive process.</li> <li>2. Discussion of the environmental impact of the use of plastics.</li> </ol>
<b>Guidance</b>		Dioxins do not decompose in the environment and can be passed on in the food chain
<b>Nature of Science</b>	<i>Ethics and risk assessment — Polymer development and use has grown quicker than an understanding of the risks involved, such as recycling or possible carcinogenic properties. (4.5)</i>	<i>Risks and problems—scientific research often proceeds with perceived benefits in mind, but the risks and implications also need to be considered. (4.8)</i>

*Planet or Plastic?* Exhibition Curriculum Links (International Baccalaureate)

<b>International-mindedness</b>	Plastics were virtually unheard of prior to the second world war. How has the introduction of plastics affected the world economically, socially and environmentally?	The international symbol for recycle, reuse and reduce is a Mobius strip designed in the late 1960s. However, global recognition of this symbol ranks well below other symbols. <ol style="list-style-type: none"><li>1. What factors influence the recognition of symbols?</li><li>2. How can nations address the problem of the plastic gyre in the Pacific Ocean?</li></ol>
<b>Theory of Knowledge</b>		<i>The products of science and technology can have a negative impact on the environment. Are scientists ethically responsible for the impact of their products?</i>