

MYP3-Grade 8th - Integrated Science

unit no.	Unit title	Time Weeks lessons hours	Key concept	related concept	global context	Statement of Inquiry	Assessment Criteria	Objectives	ATL skills	Content	Resources Textbook page reference additional resources
1	The sun and moon in our lives (social Astronomy-Interdisciplinary)	20 sept/Oct	Systems	Models, Cycles, interactions	Orientation in time and space	Human communities are deeply connected to the cycles in nature caused by the interaction of the Sun, Moon and Earth.	A - D	<p>Criterion A: Knowing and Understanding</p> <ol style="list-style-type: none"> 1. describe scientific knowledge 2. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations 3. analyse information to make scientifically supported judgments. <p>Criterion D: Reflecting on Science</p> <ol style="list-style-type: none"> 1. describe the ways in which science is applied and used to address a specific problem or issue 2. discuss and analyse the various implications of using science and its application in solving a specific problem or issue 3. apply scientific language effectively 4. document the work of others and sources of information used. 	Thinking Skills Communicative Skills	<ol style="list-style-type: none"> 1. Influence of the sun on earth 2. The sun in ancient mythology 3. Seasons 4. Influence of the moon on earth: cultural impact, animal migration. 5. Moon explorations 6. Phases of the moon and tides 	151-171
2	Adaptations of Organisms (Evolution)	20 Nov/Dec	Change	Environment, form, function and evolution	Orientation in space and time	The adaptations of organisms to change their environment can be explained by the theory of natural selection	A-D	<p>Criterion A: Knowing and Understanding</p> <ol style="list-style-type: none"> 1. describe scientific knowledge 2. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations 3. analyse information to make scientifically supported judgments. <p>Criterion D: Reflecting on Science</p> <ol style="list-style-type: none"> 1. describe the ways in which science is applied and used to address a specific problem or issue 2. discuss and analyse the various implications of using science and its application in solving a specific problem or issue 3. apply scientific language effectively 4. document the work of others and sources of information used. 	Thinking Skills Communicative Skills Reflection	<ol style="list-style-type: none"> 1. Animal and plants' Adaptations: Structural, behavioral and functional. 2. Evolution by natural selection-Charles Darwin <ol style="list-style-type: none"> a. Mutations b. The Galapagos c. Artificial selection a. Genetic modification. 	25-42
3	Indigenous Knowledge (The Scientific Method)	20	Cultures	Environment, Balance, perspective	Personal and cultural Expression	Indigenous people possess detailed and invaluable knowledge that allows them to live in a sustainable way with their local environments.	B-C	<p>Criterion B: Inquiry and Designing</p> <ol style="list-style-type: none"> 1. describe a problem or question to be tested by a scientific investigation 2. outline a testable hypothesis and explain it using scientific reasoning 3. describe how to manipulate the variables, and describe how data will be collected 4. design scientific investigations. <p>Criterion C: Processing and Evaluating</p> <ol style="list-style-type: none"> 1. present collected and transformed data 2. interpret data and describe results using scientific reasoning 3. discuss the validity of a hypothesis based on the outcome of the scientific investigation 4. discuss the validity of the method v. describe improvements or extensions to the method. 	Research Skills Communication Reflection	<ol style="list-style-type: none"> 1. Science across history: Ancient civilizations 2. Indigenous people 3. Comparing Indigenous Knowledge with scientific knowledge 4. Indigenous knowledge as holistic knowledge 5. Indigenous science and : <ol style="list-style-type: none"> a. Sourcing of food and diet b. Catching and preserving food c. Medicine d. Navigation 6. Indigenous knowledge and intellectual rights. 	2-24
4	Looking After Ourselves (Human Systems)	20	Systems	Consequences, models, Form and function, Cause and effect	Identities and relationships	Lifestyle choices we make in adolescence can have physical, social and emotional health consequences both immediately and in the future	A-C-D	<p>Criterion A: Knowing and Understanding</p> <ol style="list-style-type: none"> 1. describe scientific knowledge 2. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations 3. analyse information to make scientifically supported judgments. <p>Criterion D: Reflecting on Science</p> <ol style="list-style-type: none"> 1. describe the ways in which science is applied and used to address a specific problem or issue 2. discuss and analyse the various implications of using science and its application in solving a specific problem or issue 3. apply scientific language effectively 4. document the work of others and sources of information used. <p>Criterion D: Reflecting on Science</p> <ol style="list-style-type: none"> 1. describe the ways in which science is applied and used to address a specific problem or issue 2. discuss and analyse the various implications of using science and its application in solving a specific problem or issue 3. apply scientific language effectively 4. document the work of others and sources of information used. 	Thinking Skills Research Skills Communicative Skills	<ol style="list-style-type: none"> 1. Puberty and the Endocrine system 2. The importance of body image: Anorexia and bulimia. 3. Physical Health: <ol style="list-style-type: none"> a. Regular exercise and the musculoskeletal system-Muscle apirs. b. Diet for adolescents 4. The adolescent Brain -Emotional Health 5. Drugs and addictions: Alcohol, cannabis, tobacco 6. The respiratory system 	43-63
5	Using Metals	20	Relationships	Form, Function, Consequences	Scientific and technical innovation	Scientific and technical innovations utilise specific properties of metals in order to ensure the desired outcomes.	A-B-C-D	<p>Criterion A: Knowing and Understanding</p> <ol style="list-style-type: none"> 1. describe scientific knowledge 2. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations 3. analyse information to make scientifically supported judgments. <p>Criterion B: Inquiry and Designing</p> <ol style="list-style-type: none"> 1. describe a problem or question to be tested by a scientific investigation 2. outline a testable hypothesis and explain it using scientific reasoning 3. describe how to manipulate the variables, and describe how data will be collected 4. design scientific investigations. <p>Criterion C: Processing and Evaluating</p> <ol style="list-style-type: none"> 1. present collected and transformed data 2. interpret data and describe results using scientific reasoning 3. discuss the validity of a hypothesis based on the outcome of the scientific investigation 4. discuss the validity of the method v. describe improvements or extensions to the method. <p>Criterion D: Reflecting on Science</p> <ol style="list-style-type: none"> 1. describe the ways in which science is applied and used to address a specific problem or issue 2. discuss and analyse the various implications of using science and its application in solving a specific problem or issue 3. apply scientific language effectively 4. document the work of others and sources of information used. 	Thinking Skills Research Skills Communicative Skills	<ol style="list-style-type: none"> 1. Metals and the periodic table 2. Properties of metals 3. Types of metals: Alkali, alkaline earth and transition metals 4. Alloys 5. Non-Metals and metalloids 6. How do metals react 	65-84

5	Useful Chemical Reactions	20	Change	System, models and conditions	Scientific and technical innovations	Modelling chemical changes that occur within a chemical system allows scientists to predict the consequences of combining specific chemicals	A-B-C-D	<p>Criterion A: Knowing and Understanding</p> <ol style="list-style-type: none"> 1. describe scientific knowledge 2. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations 3. analyse information to make scientifically supported judgments. <p>Criterion B: Inquiry and Designing</p> <ol style="list-style-type: none"> 1. describe a problem or question to be tested by a scientific investigation 2. outline a testable hypothesis and explain it using scientific reasoning 3. describe how to manipulate the variables, and describe how data will be collected 4. design scientific investigations. <p>Criterion C: Processing and Evaluating</p> <ol style="list-style-type: none"> 1. present collected and transformed data 2. interpret data and describe results using scientific reasoning 3. discuss the validity of a hypothesis based on the outcome of the scientific investigation 4. discuss the validity of the method v. describe improvements or extensions to the method. <p>Criterion D: Reflecting on Science</p> <ol style="list-style-type: none"> 1. describe the ways in which science is applied and used to address a specific problem or issue 2. discuss and analyse the various implications of using science and its application in solving a specific problem or issue 3. apply scientific language effectively 4. document the work of others and sources of information used. 	Thinking Skills Research Skills Communicative Skills	<ol style="list-style-type: none"> 1. Chemical and physical change 2. Chemical reactions: Indicators 3. Representing chemical reactions: Balancing equations. 4. Types of chemical reactions 	87-107
6	Waves: Light and Sound	20	Communication	Energy, Development, Consequences	Scientific and technical innovation	Developments in technology are expanding our forms of communications, often with unknown consequences on our own lives.	A-D	<p>Criterion A: Knowing and Understanding</p> <ol style="list-style-type: none"> 1. describe scientific knowledge 2. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations 3. analyse information to make scientifically supported judgments. <p>Criterion D: Reflecting on Science</p> <ol style="list-style-type: none"> 1. describe the ways in which science is applied and used to address a specific problem or issue 2. discuss and analyse the various implications of using science and its application in solving a specific problem or issue 3. apply scientific language effectively 4. document the work of others and sources of information used. 	Thinking Skills Communicative Skills	<ol style="list-style-type: none"> 1. Waves 2. Sound waves <ol style="list-style-type: none"> a. Pitch and frequency b. How far can sound go c. Speed of sound 3. Light <ol style="list-style-type: none"> a. Properties b. Light and sight c. Periscopes d. The electromagnetic spectrum 4. Modern communication 	109-130
7	Assistive Technology (Simple Machines)	20	Systems	Energy, Form, Function, Equity	Fairness and development	With appropriate design (and attention from and function), technology can be used to ensure equal opportunities for people with disability.	A-B-D	<p>Criterion A: Knowing and Understanding</p> <ol style="list-style-type: none"> 1. describe scientific knowledge 2. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations 3. analyse information to make scientifically supported judgments. <p>Criterion B: Inquiry and Designing</p> <ol style="list-style-type: none"> 1. describe a problem or question to be tested by a scientific investigation 2. outline a testable hypothesis and explain it using scientific reasoning 3. describe how to manipulate the variables, and describe how data will be collected 4. design scientific investigations. <p>Criterion D: Reflecting on Science</p> <ol style="list-style-type: none"> 1. describe the ways in which science is applied and used to address a specific problem or issue 2. discuss and analyse the various implications of using science and its application in solving a specific problem or issue 3. apply scientific language effectively 4. document the work of others and sources of information used. 	Thinking Skills Research Skills Communicative Skills	<ol style="list-style-type: none"> 1. Understanding disability and assistive technology 2. Simple machines: <ol style="list-style-type: none"> a. Inclined planes b. Levers c. Pulleys d. Wheels and axles e. Gear wheels 3. Electrical control systems 	131-150
8	The sun and moon in our lives	20	Systems	Models, Cycles, interactions	Orientation in time and space	Human communities are deeply connected to the cycles in nature caused by the interaction of the Sun, Moon and Earth.	A - D	<p>Criterion A: Knowing and Understanding</p> <ol style="list-style-type: none"> 1. describe scientific knowledge 2. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations 3. analyse information to make scientifically supported judgments. <p>Criterion D: Reflecting on Science</p> <ol style="list-style-type: none"> 1. describe the ways in which science is applied and used to address a specific problem or issue 2. discuss and analyse the various implications of using science and its application in solving a specific problem or issue 3. apply scientific language effectively 4. document the work of others and sources of information used. 	Thinking Skills Communicative Skills	<ol style="list-style-type: none"> 1. Influence of the sun on earth 2. The sun in ancient mythology 3. Seasons 4. Influence of the moon on earth: cultural impact, animal migration. 5. Moon explorations 6. Phases of the moon and tides 	151-171