

Middle East PB5 Scope and Sequence

Lesson Title	Science Knowledge	Science Skills
Unit 1 LIVING THINGS		
<i>Human body</i>		
Food and nutrition	Nutrients and their role in the diet The importance of fibre (roughage)	using a table to summarise information
Food groups	Grouping foods Vitamins and minerals	grouping/classifying; using a Venn diagram to organise overlapping categories; interpreting a table
A balanced diet	Planning a balanced menu/diet The importance of water in the diet	using charts and tables to organise information
Food and energy	The energy content of foods Human energy requirements	following a procedure; making and recording observations; interpreting scientific data (nutritional labels)
Digestion	The alimentary canal The digestive process	experimentation; interpreting diagrams
<i>Ecology</i>		
Plants are producers	Photosynthesis	following a procedure; conducting a fair test; making and recording observations
Animals are consumers	Herbivores, omnivores and carnivores Food chains	classifying; using a flow chart to represent a process; participating in discussion
Energy flow in a food chain	A food chain shows how energy passes from producers to consumers Energy is lost at every stage	using charts and diagrams to represent processes; participating in discussion
Ecosystems	The definition of an ecosystem The roles of organisms in ecosystems	following a procedure; making and recording observations
Threats to the environment	Local, national and global environmental problems	conducting research using the library and Internet; presenting information to an audience
Conservation	Conservation issues in the Middle East	participating in a field trip; communicating ideas
The 3Rs - Reduce, Reuse, Recycle	Reducing waste Disposing of waste	applying knowledge to solve a problem; conducting research on an issue
Unit 2 MATTER AND MATERIALS		
<i>Types of matter</i>		
Elements, mixtures and compounds	Definitions and common examples of elements, mixtures and compounds Symbols for common elements	communicating information; following a simple chemical procedure taking appropriate safety precautions; observing
Physical and chemical change	Classifying changes as physical (reversible) or chemical (permanent)	investigating; observing; interpreting observations; classifying
Mixtures and solutions	Suspensions and solutions Factors affecting dissolving time	following a procedure; recording; planning and conducting a fair test
Separating mixtures	How mixtures may be separated by exploiting the difference in the properties of their components	problem-solving; following a procedure; using apparatus
<i>Water and air</i>		
The properties of water	Water is essential for life The physical properties of water	following procedures; making and interpreting observations
Using water	How we use water The consequences of drought	interpreting diagrams; participating in discussion
The properties of air	Air is essential for life The physical properties of air	following procedures; making and interpreting observations
What's in the air?	The components of air	interpreting charts and graphs; following a procedure; drawing conclusions from

		observations
Using gases from the air	Separating gases from air Uses of different gases	researching, presenting and interpreting information
Unit 3 OUR EARTH		
<i>Water supply</i>		
Water sources	Properties of water from different sources Sources of water pollution, water 'hardness'	collecting and labelling specimens; making and recording observations
The water cycle	Evaporation and condensation The water cycle	interpreting diagrams; following a procedure; making observations
Water and disease	Common water-borne diseases	interpreting and communicating information
Purifying water	Water purification methods: filtration; boiling; chemical treatment	following a procedure; making observations; interpreting diagrams
Conserving water	The importance of water reuse at home and school Preventing water misuse	interpreting and communicating information
<i>The atmosphere</i>		
The atmosphere	The structure and composition of the atmosphere	interpreting technical diagrams; drawing and labelling diagrams
Air pollution	Sources of air pollution Reducing the harmful effects of air pollution	interpreting information; communicating ideas; conducting an investigation
Cleaning the air	The design and applications of air filters	designing, constructing and testing a device for a purpose
Global warming	Global warming: causes and consequences	following a procedure; making observations; participating in a discussion
<i>The Earth's features</i>		
The changing Earth	How the large scale features of the Earth are formed The Earth's plates, their movements and the features these create	observing; using models to investigate processes
Volcanoes	Volcanic activity and its environmental effects	using the Internet for research
The rock cycle	How rocks are formed and transformed by the rock cycle The roles of weathering and sedimentation	interpreting diagrams; using a flow chart to illustrate a process
Earthquakes	The causes and measurement of earthquakes	interpreting information in a table; investigating a model of a process
Earthquakes and people	How earthquakes and tsunamis affect people	participating in role-play to explore the consequences of natural events; using the Internet for research
Shaping the landscape	Forces that create features in the landscape 'Fast' processes and 'slow' processes	classifying; using models to investigate processes
UNIT 4 FORCES AND ENERGY		
<i>Motion, forces and machines</i>		
Types of motion	Translation, rotation and oscillation Devices that move	observing and classifying; making models; undertaking a design project
Forces and their effects	Types of force The effects of forces on motion and shape	making and recording observations; investigating
Investigating friction	Friction opposes motion Friction transforms work into heat	planning and conducting an investigation; predicting; recording observations; repeating measurements to obtain reliable results

Using friction	Advantages and disadvantages of friction Some applications of frictional forces	investigating; making observations; interpreting data presented in a table
Light		
Light and seeing	Light sources How we see	recording observations; following a procedure; drawing conclusions from observations
Light and materials	How different materials affect light Transparent, translucent and opaque materials and their uses	conducting an investigation; making and recording observations; classifying materials; applying knowledge
Making shadows	The formation and properties of shadows	planning and carrying out an investigation; recording data; plotting a graph; controlling variables to conduct a fair test
The eye	The structure of the eye The functions of the eye's parts	interpreting technical diagrams; measuring; presenting data in tables and charts
Colour	Dispersion and the spectrum of white light How coloured objects and filters reflect/absorb different components of the spectrum	investigating; observing; interpreting observations; forming conclusions
Electricity and magnetism		
Static electricity	The effects and uses of static electricity Charging by friction The laws of electric charge	investigating; making and recording observations; communicating information
Electric circuits	Simple circuits Circuit symbols	following a procedure; making and testing apparatus; testing a hypothesis
Circuit projects	Circuit components and applications	making and testing devices to perform a task
Magnetic materials	Magnetic and non-magnetic materials Comparing the strengths of magnets	making and recording observations; classifying materials; applying knowledge
Magnetic poles	North and South seeking poles Laws of magnetism	conducting an investigation; making and recording observations
Using magnets	Applications of magnets	making and instrument; designing, making and testing a prototype
Unit 5 The Earth in Space		
Day, night and the seasons	The motion of the Earth around the Sun The origins of day, night and the seasons	making and interpreting observations; formulating explanations
The phases of the Moon	The motion of the Moon around the Earth The phases of the Moon	making, recording and interpreting observations
Eclipses of the Sun and the Moon	How eclipses are caused Using the internet to find the dates and paths of eclipses	interpreting technical diagrams; using the Internet for research; making and recording observations