Integrated Science
Teaching Objectives and Learning Outcomes

Form 2

Directorate for Quality and Standards in Education
Curriculum Management and eLearning Department
Malta 2012
Integrated Science – Form 2

Teaching Objectives and Learning Outcomes
## FORM 1 – Integrated Science

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>SCI 8.1 HEALTHY LIVING (I) – GO FOR EVEREST</th>
</tr>
</thead>
</table>

### Objective 1

Teacher will guide students to identify the basic food substances and their use and describe the importance of a balanced diet.

**Strand/s**

Life Processes and Living Things

**Learning Outcomes**

Students can:

- **Level 8** explain why a balanced diet changes with age and occupation.
- **Level 7** identify the seven basic food substances, their use, sources and the amounts needed for a balanced diet.
- **Level 6** identify some food substances and their sources.
- **Level 5** link certain foods with healthy or unhealthy diets.
- **Level 4** sort foods using simple criteria and communicate their observations of foods in terms of their properties.
- **Level 3** sort and group foods in terms of simple features.
- **Level 2** start exploring various food groups in terms of simple criteria.
- **Level 1** co-operate in shared exploration and supported participation.

### Objective 2

Teacher will illustrate the digestive system and guide students to describe the process of digestion.
<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Life Processes and Living Things</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learning Outcomes</strong></td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>Describe the role of enzymes and other juices in digestion.</td>
</tr>
<tr>
<td>Level 7</td>
<td>Describe the structure and function of the digestive system and what happens to food as it passes through it.</td>
</tr>
<tr>
<td>Level 6</td>
<td>Identify the structure of the digestive system and recognise that food needs to be digested to be used by the body.</td>
</tr>
<tr>
<td>Level 5</td>
<td>Link the digestive system to food.</td>
</tr>
<tr>
<td>Level 4</td>
<td>Answer simple scientific questions about the digestive system.</td>
</tr>
<tr>
<td>Level 3</td>
<td>Observe and become aware of some of the body parts related to the digestive system.</td>
</tr>
<tr>
<td>Level 2</td>
<td>Join in activities focusing on the different characteristics of the human body.</td>
</tr>
<tr>
<td>Level 1</td>
<td>Co-operate in shared exploration and supported participation.</td>
</tr>
</tbody>
</table>

**Objective 3**

Teacher will illustrate the structure of the lungs, guide students to describe the breathing process and the production of energy from food (respiration).

**Strand/s**

Life Processes and Living Things

**Learning Outcomes**

Students can:

- Level 8: Describe respiration as a chemical reaction and link this to inhaled/exhaled air.
- Level 7: Describe the structure of the lungs, the breathing process and respiration.
<table>
<thead>
<tr>
<th>Level 6</th>
<th>briefly describe the effect of smoking on lungs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 5</td>
<td>link lungs to breathing.</td>
</tr>
<tr>
<td>Level 4</td>
<td>answer simple scientific questions about the breathing system.</td>
</tr>
<tr>
<td>Level 3</td>
<td>recognise some of the features of organs and ribs and their related function.</td>
</tr>
<tr>
<td>Level 2</td>
<td>join in activities focusing on the different characteristics of the human body.</td>
</tr>
<tr>
<td>Level 1</td>
<td>experience that certain actions produce predictable results.</td>
</tr>
</tbody>
</table>

**Objective 4**

**Teacher will illustrate the blood circulatory system**

**Strand/s**  
Life Processes and Living Things

**Learning Outcomes**  
Students can:

<table>
<thead>
<tr>
<th>Level 8</th>
<th>explain the increase in pulse rate during exercise and describe how unhealthy lifestyles will cause heart disease.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 7</td>
<td>describe the blood circulatory system and link this to respiration.</td>
</tr>
<tr>
<td>Level 6</td>
<td>identify bad eating habits, lack of exercise and smoking as unhealthy habits.</td>
</tr>
<tr>
<td>Level 5</td>
<td>be aware that the heart beats faster during exercise.</td>
</tr>
<tr>
<td>Level 4</td>
<td>understand some simple scientific vocabulary and communicate related ideas about the function of the heart.</td>
</tr>
<tr>
<td>Level 3</td>
<td>show an interest and actively participate in activities involving the working of the heart.</td>
</tr>
</tbody>
</table>
Level 2
begin to anticipate and join in activities the working of the heart.

Level 1
experience that certain actions produce predictable results.

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>SCI 8.2 HEALTHY LIVING (II) – LIFE CYCLE CHALLENGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective 1</strong></td>
<td>Teacher will guide students to identify different microbes and explore ways in which they can be useful.</td>
</tr>
<tr>
<td><strong>Strand/s</strong></td>
<td>Life Processes and Living Things</td>
</tr>
<tr>
<td><strong>Learning Outcomes</strong></td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>explain how beneficial microbes work to produce useful products such as food, medicine and fuels.</td>
</tr>
<tr>
<td>Level 7</td>
<td>recognise that microbes can be useful and harmful and describe examples of beneficial microbes.</td>
</tr>
<tr>
<td>Level 6</td>
<td>identify three types of microbes (bacteria, fungi and viruses).</td>
</tr>
<tr>
<td>Level 5</td>
<td>recognise that microbes exist.</td>
</tr>
<tr>
<td>Level 4</td>
<td>understand that a lack of cleanliness encourages the growth of microbes.</td>
</tr>
<tr>
<td>Level 3</td>
<td>actively join in activities related to developing an awareness of microbes.</td>
</tr>
<tr>
<td>Level 2</td>
<td>co-operate in shared exploration and supported participation.</td>
</tr>
<tr>
<td>Level 1</td>
<td>these activities may not be appropriate for Level 1.</td>
</tr>
<tr>
<td>Objective 2</td>
<td>Teacher will describe how harmful microbes cause diseases and how infections can be spread</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Strand/s</td>
<td>Live Processes and Living Things</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>describe how harmful microbes cause disease.</td>
</tr>
<tr>
<td>Level 7</td>
<td>link a disease with its microbe and the way it is spread.</td>
</tr>
<tr>
<td>Level 6</td>
<td>link some diseases with microbes.</td>
</tr>
<tr>
<td>Level 5</td>
<td>identify some common diseases.</td>
</tr>
<tr>
<td>Level 4</td>
<td>develop a basic understanding of what germs are and that they are spread through a series of actions.</td>
</tr>
<tr>
<td>Level 3</td>
<td>show interest in a wide range of objects and start to record their own findings.</td>
</tr>
<tr>
<td>Level 2</td>
<td>show an interest in a range of activities related to the spread of infections, such as appropriate hand washing.</td>
</tr>
<tr>
<td>Level 1</td>
<td>begin to show interest in objects presented to them in the development of visual pursuit and the permanence of objects.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 3</th>
<th>Teacher will guide students to identify (natural) ways of preventing and fighting infections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strand/s</td>
<td>Live Processes and Living Things</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>explain ‘immune’ as meaning resistant to disease and that antibodies pass to a baby via breast milk.</td>
</tr>
<tr>
<td>Level 7</td>
<td>describe white blood cells’ action against infections.</td>
</tr>
<tr>
<td>Level 6</td>
<td>identify and describe how natural barriers act to prevent disease.</td>
</tr>
<tr>
<td>Level 5</td>
<td>identify basic hygiene procedures as a way of preventing infections.</td>
</tr>
<tr>
<td>Level 4</td>
<td>communicate their responses in relation to identifying ways of preventing the spread of harmful disease.</td>
</tr>
<tr>
<td>Level 3</td>
<td>actively join in activities related to reducing the risk of germ spreading.</td>
</tr>
<tr>
<td>Level 2</td>
<td>respond consistently to objects; know certain actions produce predictable results.</td>
</tr>
<tr>
<td>Level 1</td>
<td>co-operate with shared exploration and supported participation development of operational causality.</td>
</tr>
</tbody>
</table>

**Objective 4**  
**Teacher will guide students to explore the use of medicines in preventing illnesses and fighting infections.**

**Strand/s**  
Live Processes and Living Things

**Learning Outcomes**  
Students can:

<p>| Level 8 | explain how the body’s immune system works and how it can be enhanced in different ways. |
| Level 7 | describe how immunisation protects the body against some diseases and the use/misuse of antibiotics. |
| Level 6 | identify examples of antiseptics, disinfectants and antibiotics. |
| Level 5 | link the use of antiseptics, disinfectants and antibiotics as ways of fighting infections. |
| Level 4 | show an understanding of ways which can help keep our bodies healthy. |</p>
<table>
<thead>
<tr>
<th>Level 3</th>
<th>understand some simple vocabulary related to the topic and communicate related ideas using simple phrases.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2</td>
<td>respond consistently to objects know certain actions produce predictable results.</td>
</tr>
<tr>
<td>Level 1</td>
<td>co-operate with shared exploration and supported participation development of operational causality.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>SCI 8.3 ELEMENTS, COMPOUNDS AND MIXTURES (I)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 1</td>
<td>Teacher will guide students to explore that materials are made up of elements and describe what elements are.</td>
</tr>
<tr>
<td>Strand/s</td>
<td>Materials and their Properties</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>know that chemical symbols are used to represent elements and identify some of them.</td>
</tr>
<tr>
<td>Level 7</td>
<td>describe elements as materials made up of one type of particle, identify an atom and a molecule and give some examples of elements.</td>
</tr>
<tr>
<td>Level 6</td>
<td>name the materials that make up some common objects.</td>
</tr>
<tr>
<td>Level 5</td>
<td>understand that objects are made up of different materials.</td>
</tr>
<tr>
<td>Level 4</td>
<td>sort materials using simple criteria and communicate their observations.</td>
</tr>
<tr>
<td>Level 3</td>
<td>communicate their awareness of changes.</td>
</tr>
<tr>
<td>Level 2</td>
<td>Respond to options and choices with actions or gestures.</td>
</tr>
<tr>
<td>Level 1</td>
<td>co-operate in shared exploration and supported participation.</td>
</tr>
</tbody>
</table>

| **Objective 2** | Teacher will illustrate some examples of elements and guide students to understand how elements are sorted out in the periodic table. |
| **Strand/s** | Materials and their Properties |
| **Learning Outcomes** | Students can: |
| Level 8 | Describe some properties of metals and non-metals. |
| Level 7 | Describe the periodic table as the list of element and identify some of its groups such as metals and non-metals. |
| Level 6 | identify one property of some common elements. |
| Level 5 | sort different materials according to appearance. |
| Level 4 | |
| Level 3 | |
| Level 2 | |
| Level 1 | |

<p>| <strong>Objective 3</strong> | Teachers will guide students to describe mixtures. |
| <strong>Strand/s</strong> | Materials and their Properties |</p>
<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Students can:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 8</td>
<td>identify the main gases present in air, give their approximate percentage and some of their uses.</td>
</tr>
<tr>
<td>Level 7</td>
<td>Describe mixtures and explain that mixtures retain the properties of the chemicals that make up the mixture.</td>
</tr>
<tr>
<td>Level 6</td>
<td>identify the components of some mixtures such as air.</td>
</tr>
<tr>
<td>Level 5</td>
<td>identify the components of some mixtures such as air.</td>
</tr>
<tr>
<td>Level 4</td>
<td>sort materials using simple criteria and communicate their observations.</td>
</tr>
<tr>
<td>Level 3</td>
<td>explore and observe similarities, differences, patterns and changes.</td>
</tr>
<tr>
<td>Level 2</td>
<td>explore objects and materials provided changing some materials by physical means.</td>
</tr>
<tr>
<td>Level 1</td>
<td>co-operate in shared exploration and supported participation.</td>
</tr>
</tbody>
</table>

**Objective 4**

Teacher will engage students to investigate further mixtures.

<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Materials and their Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Outcomes</td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>describe examples of some other mixtures such as the Dead Sea and metal alloys.</td>
</tr>
<tr>
<td>Level 7</td>
<td>draw diagrams to illustrate the particles in a mixture.</td>
</tr>
<tr>
<td>Level 6</td>
<td>identify the components of some mixtures.</td>
</tr>
<tr>
<td>Level</td>
<td>Learning Objective</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>Identify further examples of common mixtures.</td>
</tr>
<tr>
<td>4</td>
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<tr>
<td>3</td>
<td></td>
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<tr>
<td>2</td>
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<tr>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**Unit code and title**

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>SCI 8.4 ELEMENTS, COMPOUNDS AND MIXTURES (II)</th>
</tr>
</thead>
</table>

**Objective 1**

Teacher will guide students to understand what compounds are.

**Strand/s**

Materials and their Properties

**Learning Outcomes**

Students can:

- **Level 8**: Name the compounds formed from the elements given and illustrate particles in a compound.
- **Level 7**: Describe that compounds are chemicals made up of two or more elements joined together and use word equations to illustrate simple chemical reactions.
- **Level 6**: Identify the elements present in some simple compounds.
- **Level 5**: Identify some common compounds.
- **Level 4**: Describe ways in which materials are changed.
| Level 3 | explore and observe similarities, differences, patterns and changes. |
| Level 2 | explore objects and materials provided changing some materials by physical means. |
| Level 1 | experience and respond to chemical change |

**Objective 2**  
Teacher will guide students to explore examples of chemical reactions and word equations.

**Strand/s**

**Learning Outcomes**  
Students can:

- **Level 8**: Identify reactants and products in a reaction and use them to write a word equation.
- **Level 7**: Use set criteria to show that a chemical reaction has taken place.
- **Level 6**: Describe the changes taking place and link this to a chemical change (e.g. a change in colour shows a new chemical).
- **Level 5**: Identify visible changes taking place during a chemical change.

**Objective 3**  
Teacher will engage students to explore and present examples of chemicals.
<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>explain the properties of materials being used and suggest other possible options.</td>
</tr>
<tr>
<td>Level 7</td>
<td>describe the process of making a particular chemical.</td>
</tr>
<tr>
<td>Level 6</td>
<td>link important chemical properties with their use.</td>
</tr>
<tr>
<td>Level 5</td>
<td>identify some important materials.</td>
</tr>
<tr>
<td>Level 4</td>
<td></td>
</tr>
<tr>
<td>Level 3</td>
<td></td>
</tr>
<tr>
<td>Level 2</td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td></td>
</tr>
</tbody>
</table>

**Unit code and title**

<table>
<thead>
<tr>
<th>SCI 8.5 SEPARATING MIXTURES</th>
</tr>
</thead>
</table>

**Objective 1**

Teacher will guide students to identify soluble and insoluble substances and factors affecting solubility.

<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials and their Properties</td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>explain why certain factors speed up dissolving.</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Level 7</td>
<td>recall some soluble and insoluble substances in water and describe the factors which affect solubility.</td>
</tr>
<tr>
<td>Level 6</td>
<td>know that some substances dissolve in water and others do not.</td>
</tr>
<tr>
<td>Level 5</td>
<td>identify water as a good solvent.</td>
</tr>
<tr>
<td>Level 4</td>
<td>use simple equipment and materials provided and make related observations.</td>
</tr>
<tr>
<td>Level 3</td>
<td>observe the simple properties of solids and begin to record their findings.</td>
</tr>
<tr>
<td>Level 2</td>
<td>show an interest in activities related to soluble and insoluble substances.</td>
</tr>
<tr>
<td>Level 1</td>
<td>begin to respond consistently to familiar people, events and objects and react to new activities and experiences.</td>
</tr>
</tbody>
</table>

**Objective 2**

**Teacher will guide students to distinguish between mixtures and solutions.**

**Strand/s**

Materials and their Properties

**Learning Outcomes**

Students can:

<table>
<thead>
<tr>
<th>Level 8</th>
<th>explain the movement of colours in chromatography in terms of solubility.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 7</td>
<td>describe the difference between a mixture and a solution.</td>
</tr>
<tr>
<td>Level 6</td>
<td>identify chromatography as a way of separating colours.</td>
</tr>
<tr>
<td>Level 5</td>
<td>recognise visible things in a mixture.</td>
</tr>
<tr>
<td>Level 4</td>
<td>Level 3</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
</tr>
</tbody>
</table>

### Objective 3
Teacher will guide students to explore ways of separating different mixtures (by hand & filtering).

### Strand/s
Materials and their Properties

### Learning Outcomes
Students can:

<table>
<thead>
<tr>
<th>Level 8</th>
<th>Explain why different methods can be used to separate mixtures according to the properties of the contents.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 7</td>
<td>Identify the best way to separate a mixture.</td>
</tr>
<tr>
<td>Level 6</td>
<td>Separate a mixture using sieve or filter paper correctly.</td>
</tr>
<tr>
<td>Level 5</td>
<td>Separate a mixture by separating objects by hand or magnet.</td>
</tr>
<tr>
<td>Level 4</td>
<td>Observe and start to recognise differences, patterns and changes.</td>
</tr>
<tr>
<td>Level 3</td>
<td>Closely observe the changes that occur and record them.</td>
</tr>
<tr>
<td>Level 2</td>
<td>Engage in experimentation related to separating different materials.</td>
</tr>
<tr>
<td>Level 1</td>
<td>Co-operate with shared exploration and supported participation in the development of operational causality.</td>
</tr>
<tr>
<td>Objective 4</td>
<td>Teacher will guide students to explore ways of separating solutions (evaporation &amp; distillation).</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Strand/s</td>
<td>Materials and their Properties</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>link evaporation and distillation to everyday natural processes.</td>
</tr>
<tr>
<td>Level 7</td>
<td>identify when to use evaporation or distillation to separate a solution.</td>
</tr>
<tr>
<td>Level 6</td>
<td>understand what happens when a solution is evaporated.</td>
</tr>
<tr>
<td>Level 5</td>
<td>recall the meaning of evaporation.</td>
</tr>
<tr>
<td>Level 4</td>
<td>begin to make generalisations, connections and predictions from regular experience.</td>
</tr>
<tr>
<td>Level 3</td>
<td>actively join in activities related to separating solutes.</td>
</tr>
<tr>
<td>Level 2</td>
<td>know that certain actions produce predictable results.</td>
</tr>
<tr>
<td>Level 1</td>
<td>co-operate with shared exploration and supported participation in the development of operational causality.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>SCI 8.6 LIGHT AND SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 1</td>
<td>Teacher will guide students to use ray diagrams to show how objects are seen.</td>
</tr>
<tr>
<td>Strand/s</td>
<td>Physical Properties</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>Students can:</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Level 8</td>
<td>describe the formation of shadows and explain the difference between transparent, translucent and opaque objects.</td>
</tr>
<tr>
<td>Level 7</td>
<td>describe the difference between the direction of emitted light and reflected light and draw simple ray diagrams.</td>
</tr>
<tr>
<td>Level 6</td>
<td>identify luminous objects as objects that give off light and non-luminous objects as objects that reflect light and know that light travels in a straight line.</td>
</tr>
<tr>
<td>Level 5</td>
<td>identify objects that are luminous and objects that are non-luminous.</td>
</tr>
<tr>
<td>Level 4</td>
<td></td>
</tr>
<tr>
<td>Level 3</td>
<td></td>
</tr>
<tr>
<td>Level 2</td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td></td>
</tr>
</tbody>
</table>

Objective 2  
Teacher will show the structure of the eye and guide students to explain how our eyes enable us to see.

Strand/s  
Physical Properties

Learning Outcomes  
Students can:

<table>
<thead>
<tr>
<th>Level 8</th>
<th>explain how an image is produced on the retina and the function of the brain to invert the image.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 7</td>
<td>describe the structure and the function of the eye and how light rays produce an image.</td>
</tr>
<tr>
<td>Level 6</td>
<td>identify the external parts of the eye.</td>
</tr>
<tr>
<td>Level 5</td>
<td>understand that the eye is sensitive to light.</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Level 4</td>
<td>begin to understand that light travels in straight lines.</td>
</tr>
<tr>
<td>Level 3</td>
<td>show they know some sources of light.</td>
</tr>
<tr>
<td>Level 2</td>
<td>pupils communicate their awareness of changes in light.</td>
</tr>
<tr>
<td>Level 1</td>
<td>begin to respond consistently to familiar people, events and objects and react to new activities and experiences.</td>
</tr>
</tbody>
</table>

**Objective 3**  
*Teacher will guide students to describe sound and identify sound sources.*

**Strand/s**  
Physical Properties

**Learning Outcomes**  
Students can:

<table>
<thead>
<tr>
<th>Level 8</th>
<th>identify types of sound such as loud/soft and high/low and relate this to vibrations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 7</td>
<td>recognise and identify different vibrating sources and use the slinky spring to illustrate sound waves.</td>
</tr>
<tr>
<td>Level 6</td>
<td>recognise that sounds are produced as a result of vibrations.</td>
</tr>
<tr>
<td>Level 5</td>
<td>identify different sources which emit sound.</td>
</tr>
<tr>
<td>Level 4</td>
<td>know there are different ways to describe sound.</td>
</tr>
<tr>
<td>Level 3</td>
<td>start to understand that sound is generated in a variety of ways and from different sources.</td>
</tr>
<tr>
<td>Level 2</td>
<td>show an interest in sounds varying in tone and loudness.</td>
</tr>
</tbody>
</table>
### Objective 4

**Teacher will guide students to use the particle theory to explain how sound travels through different materials but not through a vacuum.**

<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Physical Properties</th>
</tr>
</thead>
</table>

**Learning Outcomes**

<table>
<thead>
<tr>
<th>Level 8</th>
<th>describe sound waves as a series of compressions and rarefactions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 7</td>
<td>describe the movement of sound in solids, liquids and gases and the absence of sound in a vacuum and relate this to the particle model.</td>
</tr>
<tr>
<td>Level 6</td>
<td>recognise that light travels faster than sound.</td>
</tr>
<tr>
<td>Level 5</td>
<td>know that sound can travel through objects.</td>
</tr>
<tr>
<td>Level 4</td>
<td>compare the pitch of sounds and start to record their findings in different ways.</td>
</tr>
<tr>
<td>Level 3</td>
<td>explore materials in increasingly complex ways and listen to results of their actions with interest.</td>
</tr>
<tr>
<td>Level 2</td>
<td>anticipate and join in activities focused on enquiry.</td>
</tr>
<tr>
<td>Level 1</td>
<td>experience the sounds of musical instruments.</td>
</tr>
</tbody>
</table>

### Objective 5

**Teacher will show the structure of the ear and guide students to explain how our ears enable us to hear.**

**Strand/s**

<table>
<thead>
<tr>
<th>Physical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Outcomes</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td><strong>Level 8</strong></td>
</tr>
<tr>
<td><strong>Level 7</strong></td>
</tr>
<tr>
<td><strong>Level 6</strong></td>
</tr>
<tr>
<td><strong>Level 5</strong></td>
</tr>
<tr>
<td><strong>Level 4</strong></td>
</tr>
<tr>
<td><strong>Level 3</strong></td>
</tr>
<tr>
<td><strong>Level 2</strong></td>
</tr>
<tr>
<td><strong>Level 1</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>SCI 8.7 ECOLOGICAL RELATIONSHIPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 1</td>
<td>Teacher will show the students how to construct food webs from food chains and interpret them.</td>
</tr>
<tr>
<td>Strand/s</td>
<td>Life Processes and Living Things</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>construct and interpret pyramids of numbers.</td>
</tr>
<tr>
<td>Level 7</td>
<td>join different food chains into a food web and find the effect of changing populations on the food web.</td>
</tr>
<tr>
<td>Level 6</td>
<td>find different food chains from a food web.</td>
</tr>
<tr>
<td>Level 5</td>
<td>recall the meaning of a food chain.</td>
</tr>
<tr>
<td>Level 4</td>
<td>sort living plants and animals into their appropriate food chains.</td>
</tr>
<tr>
<td>Level 3</td>
<td>sort materials using simple criteria and communicate their observations of materials in terms of these properties.</td>
</tr>
<tr>
<td>Level 2</td>
<td>show interest in a range of food chains.</td>
</tr>
<tr>
<td>Level 1</td>
<td>accept and engage in co-active exploration.</td>
</tr>
</tbody>
</table>

**Objective 2**  
Teacher will illustrate examples of change in habitats and explain the effect on organisms.

**Strand/s**  
Life Processes and Living Things

**Learning Outcomes**  
Students can:

<p>| Level 8 | explain how adaptations, populations and survival of organisms are linked to change in habitats. |
| Level 7 | describe how habitats change and the effect this causes on living things. |
| Level 6 | name some ways in which habitats can change. |
| Level 5 | name some habitats and link some organisms to those habitats. |
| Level 4 | recognise that different living things are found in different places and explain why. |</p>
<table>
<thead>
<tr>
<th>Level 3</th>
<th>start to understand some simple, scientific vocabulary and communicate related ideas and observations using simple phrases.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2</td>
<td>show interest in a wide range of living things, handling them and observing them.</td>
</tr>
<tr>
<td>Level 1</td>
<td>react to new activities and experiences.</td>
</tr>
</tbody>
</table>

**Objective 3**

**Teacher will present examples of populations and identify the key factors that affect the size of populations.**

**Strand/s**

| Life Processes and Living Things |

**Learning Outcomes**

<table>
<thead>
<tr>
<th>Students can:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 8 explain how population size can be controlled in a natural or artificial way.</td>
</tr>
<tr>
<td>Level 7 identify and describe factors that affect the size of populations, such as competition and predators.</td>
</tr>
<tr>
<td>Level 6 recognise that different populations can be found in the same habitat.</td>
</tr>
<tr>
<td>Level 5 understand the meaning of population of an organism.</td>
</tr>
<tr>
<td>Level 4 identify ways in which an animal is suited to its environment and record the changes.</td>
</tr>
<tr>
<td>Level 3 explore and observe similarities, differences, patterns and changes in features of living things.</td>
</tr>
<tr>
<td>Level 2 engage in experimentation.</td>
</tr>
<tr>
<td>Level 1 accept and engage in co-active exploration.</td>
</tr>
<tr>
<td>Objective 4</td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>Strand/s</td>
</tr>
<tr>
<td>Learning Outcomes</td>
</tr>
<tr>
<td>Level 8</td>
</tr>
<tr>
<td>Level 7</td>
</tr>
<tr>
<td>Level 6</td>
</tr>
<tr>
<td>Level 5</td>
</tr>
<tr>
<td>Level 4</td>
</tr>
<tr>
<td>Level 3</td>
</tr>
<tr>
<td>Level 2</td>
</tr>
<tr>
<td>Level 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>SCI 8.8 FORENSIC SCIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 1</td>
<td>Teacher will guide students to describe the importance of forensic science to solve crimes and relate observation skills to forensic science.</td>
</tr>
<tr>
<td>Strand/s</td>
<td>Physical Properties; Life Processes and Living Things; Materials and Their Properties</td>
</tr>
</tbody>
</table>
### Learning Outcomes

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 8</td>
<td>use observations and scientific skills to explain conclusions.</td>
</tr>
<tr>
<td>Level 7</td>
<td>identify some forensic activities which may be used to solve crimes.</td>
</tr>
<tr>
<td>Level 6</td>
<td>recognise that scientists use different tests to find evidence.</td>
</tr>
<tr>
<td>Level 5</td>
<td>recognise that science can be used to solve problems.</td>
</tr>
<tr>
<td>Level 4</td>
<td>recognise differences between situations presented to them and communicating responses related to investigative skills.</td>
</tr>
<tr>
<td>Level 3</td>
<td>understand some simple vocabulary related to the topic and start to communicate related ideas using simple phrases.</td>
</tr>
<tr>
<td>Level 2</td>
<td>respond consistently to objects and know certain actions produce predictable results.</td>
</tr>
<tr>
<td>Level 1</td>
<td>co-operate with shared exploration and supported participation development of operational causality.</td>
</tr>
</tbody>
</table>

### Objective 2

**Teacher will guide students to collect and process evidence from a crime scene.**

### Strand/s

- Physical Properties
- Life Processes and Living Things
- Materials and Their Properties

### Learning Outcomes

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 8</td>
<td>plan how to use clues to produce evidence.</td>
</tr>
<tr>
<td>Level 7</td>
<td>identify the four types of human teeth and their function.</td>
</tr>
<tr>
<td>Level 6</td>
<td>match pieces of evidence.</td>
</tr>
<tr>
<td>Level</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>5</td>
<td>make simple observations of a situation.</td>
</tr>
<tr>
<td>4</td>
<td>communicate and share their findings in relation to their own investigations related to chromatography.</td>
</tr>
<tr>
<td>3</td>
<td>explore and actively join in activities related to the separation of colours in water.</td>
</tr>
<tr>
<td>2</td>
<td>show an interesting activities related to mixing and separating colours.</td>
</tr>
<tr>
<td>1</td>
<td>begin to show interest in objects presented to them in the development of visual pursuit and the permanence of objects.</td>
</tr>
</tbody>
</table>

**Objective 3**  
Teacher will guide students to use separation techniques to provide evidence.

**Strand/s**  
Physical Properties; Life Processes and Living Things; Materials and Their Properties

**Learning Outcomes**  
Students can:

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>explain the basic scientific principles underlying chromatography as a separating technique.</td>
</tr>
<tr>
<td>7</td>
<td>match samples to reach a conclusion and communicate findings effectively.</td>
</tr>
<tr>
<td>6</td>
<td>perform chromatography under supervision.</td>
</tr>
<tr>
<td>5</td>
<td>make simple observations of a situation</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td></td>
</tr>
</tbody>
</table>

**Objective 4**  
Teacher will guide students to collect and process evidence from a fire.

**Strand/s**  
Physical Properties; Life Processes and Living Things; Materials and Their Properties

**Learning Outcomes**  
Students can:

<table>
<thead>
<tr>
<th>Level 8</th>
<th>explain the basic scientific principles underlying the fire triangle and the flame tests.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 7</td>
<td>identify an unknown chemical by matching to known results.</td>
</tr>
<tr>
<td>Level 6</td>
<td>understand that heat, air (oxygen) and a fuel are needed to start a fire.</td>
</tr>
<tr>
<td>Level 5</td>
<td>recognise that some chemicals are explosive.</td>
</tr>
</tbody>
</table>

**Unit code and title**  
SCI 8.9  CLIMATE CHANGE (I) – ENERGY AND THE ENVIRONMENT

**Objective 1**  
Teacher will guide students to understand energy production and its implications.
<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Materials and Their Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Learning Outcomes</strong></td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>explain what is climate change and identify some signs of climate change.</td>
</tr>
<tr>
<td>Level 7</td>
<td>describe how electricity is produced in a power station and its environmental implications.</td>
</tr>
<tr>
<td>Level 6</td>
<td>describe that power stations are one of the main sources of recognise that various forms of energy can be used to generate electricity.</td>
</tr>
<tr>
<td>Level 5</td>
<td>identify the power station as the main local source of electricity.</td>
</tr>
<tr>
<td>Level 4</td>
<td>know about a range of physical phenomena and recognise and describe similarities and differences associated with them.</td>
</tr>
<tr>
<td>Level 3</td>
<td>show interest in a wide variety of objects, handling and observing them and begin to record their findings.</td>
</tr>
<tr>
<td>Level 2</td>
<td>begin to show interest in a wide range of objects.</td>
</tr>
<tr>
<td>Level 1</td>
<td>start to respond consistently to objects and activities means of obtaining desired environmental events.</td>
</tr>
</tbody>
</table>

| Objective 2 | Teachers will engage students to investigate the products of burning fuels. |
| Strand/s | Materials and Their Properties |
| **Learning Outcomes** | Students can: |
| Level 8 | link the burning of fuels with air quality and describe some examples. |
| Level 7 | Describe an experiment to test the products of combustion of a fuel and write a chemical word equation for this reaction. |
| Level 6 | identify some products of combustion of a fuel and write the word equation for combustion. |
| Level 5 | recall that heat energy is given out when fuels burn. |
| Level 4 | will start to recognise that burning fuels produces air pollution. |
| Level 3 | show interest in a wide variety of objects, handling and observing them and record their findings. |
| Level 2 | begin to show interest in a wide range of the objects that are shown. |
| Level 1 | identify (by touch or pointing towards) fuels such as wood or coal. |

### Objective 3

**Teacher will help students to explore the environmental implications of using fossil fuels and issues re climate change.**

<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Materials and Their Properties</th>
</tr>
</thead>
</table>

### Learning Outcomes

**Students can:**

<p>| Level 8 | explain the implications of some changes in lifestyle on the environment and identify action on a larger scale. |
| Level 7 | describe that the CO₂ produced by burning fossil fuels contributes to an increase in air pollution, the greenhouse effect and global warming and state examples of how to reduce their personal carbon footprint. |
| Level 6 | be aware that the way we use energy in our daily life has consequences on the amount of fossil fuels burned and on the amount of pollution that is created. |
| Level 5 | link the burning of fossil fuels with air pollution. |
| Level 4 | |
| Level 3 | |</p>
<table>
<thead>
<tr>
<th>Level 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 4</th>
<th>Teacher will guide students to identify examples of renewable and non-renewable sources of energy and the advantages and disadvantages of each source of energy.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Materials and Their Properties</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Students can:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 8</td>
<td>suggest ways of persuading people to use renewable sources of energy even though these will not necessarily come cheaper than using fossil fuels.</td>
</tr>
<tr>
<td>Level 7</td>
<td>describe the main advantages and disadvantages of using different types of renewable sources of energy.</td>
</tr>
<tr>
<td>Level 6</td>
<td>state that the use of renewable sources of energy reduces pollution but that even these sources create challenges for the users.</td>
</tr>
<tr>
<td>Level 5</td>
<td>state that energy sources can be classified as renewable or non-renewable.</td>
</tr>
<tr>
<td>Level 4</td>
<td>learn about different energy sources.</td>
</tr>
<tr>
<td>Level 3</td>
<td>show interest in a wide variety of objects, handling and observing them and begin to record their findings.</td>
</tr>
<tr>
<td>Level 2</td>
<td>begin to show interest in a wide range of objects.</td>
</tr>
<tr>
<td>Level 1</td>
<td>these activities may not be appropriate for (Level 1).</td>
</tr>
<tr>
<td>Unit code and title</td>
<td>SCI 8.10 CLIMATE CHANGE (II) - ENVIRONMENTAL CHEMISTRY</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------</td>
</tr>
</tbody>
</table>

**Objective 1**  
Teacher will guide students to explore sources of air pollution and their effects.

<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Materials and Their Properties</th>
</tr>
</thead>
</table>

**Learning Outcomes**  
Students can:

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 8</td>
<td>explain alternate ways of doing things and thus reducing the sources of air pollution.</td>
</tr>
<tr>
<td>Level 7</td>
<td>describe some sources of air pollution and possible effects.</td>
</tr>
<tr>
<td>Level 6</td>
<td>identify some sources of air pollution.</td>
</tr>
<tr>
<td>Level 5</td>
<td>link clean air with healthy living.</td>
</tr>
<tr>
<td>Level 4</td>
<td>recognise basic sources of air pollution.</td>
</tr>
<tr>
<td>Level 3</td>
<td>communicate their awareness of changes.</td>
</tr>
<tr>
<td>Level 2</td>
<td>respond to options and choices with actions or gestures.</td>
</tr>
<tr>
<td>Level 1</td>
<td>co-operate in shared exploration and supported participation.</td>
</tr>
</tbody>
</table>

**Objective 2**  
Teacher will guide students to explore sources of land pollution and their effects.

<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Materials and Their Properties</th>
</tr>
</thead>
</table>

**Learning Outcomes**  
Students can:
| Level 8 | explain different themes related to land pollution and link together as one issue of waste management. |
| Level 7 | identify and describe the 3 R’s as the basis of waste management to avoid pollution. |
| Level 6 | identify some sources of land pollution. |
| Level 5 | link a clean place with healthy living. |
| Level 4 | recognise some sources of land pollution. |
| Level 3 | explore and observe similarities, differences, patterns and changes. |
| Level 2 | engage in experimentation with a range of equipment. |
| Level 1 | communicate consistent preferences and effective responses. |

**Objective 3**  
Teacher will guide students to explore sources of water pollution and their effects

**Strand/s**  
Materials and Their Properties

**Learning Outcomes**  
Students can:

<p>| Level 8 | describe the long term effects of some sources of sea pollution. |
| Level 7 | describe some sources of sea pollution and their effects. |
| Level 6 | identify some sources of sea pollution. |
| Level 5 | link a clean sea with healthy living. |</p>
<table>
<thead>
<tr>
<th>Level 4</th>
<th>recognise possible sources of water pollution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 3</td>
<td>actively join in activities related to exploring sources of water pollution</td>
</tr>
<tr>
<td>Level 2</td>
<td>engage in experimentation with a range of equipment</td>
</tr>
<tr>
<td>Level 1</td>
<td>co-operate in shared exploration and supported participation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>SCI 8.11 EARTH AND SPACE (I)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective 1</strong></td>
<td>Teacher will illustrate the movement of the Earth around the Sun and help students describe day/night and a year.</td>
</tr>
<tr>
<td><strong>Strand/s</strong></td>
<td>Physical Properties</td>
</tr>
<tr>
<td><strong>Learning Outcomes</strong></td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>evaluate terms like sun ‘rising’ and sun ‘setting’ and describe that days are longer in Summer and shorter in Winter.</td>
</tr>
<tr>
<td>Level 7</td>
<td>illustrate the orbit of the Earth around the Sun and describe day and night.</td>
</tr>
<tr>
<td>Level 6</td>
<td>describe day/night in terms of a spinning Earth and explain what an orbit is.</td>
</tr>
<tr>
<td>Level 5</td>
<td>know that there are 365 days in a year.</td>
</tr>
<tr>
<td>Level 4</td>
<td>describe changes when questioned directly.</td>
</tr>
<tr>
<td>Level 3</td>
<td>observe some of the simple properties of light and begin to record their findings.</td>
</tr>
<tr>
<td>Level 2</td>
<td>communicate their awareness of light.</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Level 1</td>
<td>co-operate in shared exploration and supportive participation.</td>
</tr>
</tbody>
</table>

**Objective 2**  
Teacher will help students to explain the causes of seasons.

<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Physical Properties</th>
</tr>
</thead>
</table>

**Learning Outcomes**  
Students can:

<table>
<thead>
<tr>
<th>Level 8</th>
<th>explain how the tilt of the earth causes seasons.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 7</td>
<td>link seasons with the tilt of the Earth.</td>
</tr>
<tr>
<td>Level 6</td>
<td>describe and identify patterns in seasonal variation</td>
</tr>
<tr>
<td>Level 5</td>
<td>identify the four seasons</td>
</tr>
<tr>
<td>Level 4</td>
<td>describe their observations using scientific vocabulary and engage in simple recording of such observations where appropriate.</td>
</tr>
<tr>
<td>Level 3</td>
<td>start to explore and observe similarities, differences, patterns and changes in the features of seasons.</td>
</tr>
<tr>
<td>Level 2</td>
<td>group objects and materials in terms of seasonal features.</td>
</tr>
<tr>
<td>Level 1</td>
<td>react to new activities and experiences.</td>
</tr>
</tbody>
</table>

**Objective 3**  
Teacher will guide students to explore the movement of the Moon around the Earth.

<table>
<thead>
<tr>
<th>Strand/s</th>
<th>Physical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Outcomes</td>
<td>Students can:</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Level 8</td>
<td>describe why the shape of the Moon appears to change during its orbit of the Earth.</td>
</tr>
<tr>
<td>Level 7</td>
<td>refer to the different shapes of the Moon as Phases of the Moon and name some of them.</td>
</tr>
<tr>
<td>Level 6</td>
<td>describe that the orbit of the Moon around the Earth takes 28 days.</td>
</tr>
<tr>
<td>Level 5</td>
<td>show that the shape of the Moon is a sphere.</td>
</tr>
<tr>
<td>Level 4</td>
<td></td>
</tr>
<tr>
<td>Level 3</td>
<td></td>
</tr>
<tr>
<td>Level 2</td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 4</th>
<th>Teacher will engage students to explain what happens during an eclipse.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strand/s</td>
<td>Physical Properties</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>describe what happens during a solar or a lunar eclipse.</td>
</tr>
<tr>
<td>Level 7</td>
<td>draw diagrams to explain a solar or a lunar eclipse and indicate the correct position of the Sun, Earth and Moon in both eclipses.</td>
</tr>
<tr>
<td>Level 6</td>
<td>use models to show how a solar or a lunar eclipse take place.</td>
</tr>
<tr>
<td>Level 5</td>
<td>recognise pictures of an eclipse.</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Level 4</td>
<td>make their own observations of changes that result from movement of the Earth and Moon.</td>
</tr>
<tr>
<td>Level 3</td>
<td>engage in experimentation with a range of equipment and answer simple scientific questions.</td>
</tr>
<tr>
<td>Level 2</td>
<td>remember learned responses over short periods of time.</td>
</tr>
<tr>
<td>Level 1</td>
<td>accept and engage in co-active exploration.</td>
</tr>
</tbody>
</table>

**Objective 5**  
**Teacher will engage students to explore the main features of the Solar System.**

**Strand/s**  
Physical Properties

**Learning Outcomes**  
Students can:

<table>
<thead>
<tr>
<th>Level 8</th>
<th>explain the scientific concepts underlying the main features of the Solar System.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 7</td>
<td>describe the Solar System as made up of the Sun and all the planets orbiting it and identify some of their features.</td>
</tr>
<tr>
<td>Level 6</td>
<td>identify the Sun and the planets as the main components of the Solar System.</td>
</tr>
<tr>
<td>Level 5</td>
<td>name some planets</td>
</tr>
<tr>
<td>Level 4</td>
<td>recognise some of the main features of the solar system.</td>
</tr>
<tr>
<td>Level 3</td>
<td>actively participate in activities related to the solar system.</td>
</tr>
<tr>
<td>Level 2</td>
<td>show an interest in the Solar System.</td>
</tr>
</tbody>
</table>
### Unit code and title

| Level 1 | accept and engage in co-active exploration. |

<table>
<thead>
<tr>
<th><strong>Unit code and title</strong></th>
<th>SCI 8.12  EARTH AND SPACE (II)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective 1</strong></td>
<td>Teacher will help students describe what gravity is and recognise that it keeps things in orbit.</td>
</tr>
<tr>
<td><strong>Strand/s</strong></td>
<td>Physical Properties</td>
</tr>
<tr>
<td><strong>Learning Outcomes</strong></td>
<td>Students can:</td>
</tr>
<tr>
<td><strong>Level 8</strong></td>
<td>describe what happens to the gravitational pull as the distance between objects and mass of object increase.</td>
</tr>
<tr>
<td><strong>Level 7</strong></td>
<td>describe the force of gravity and identify gravity as the force that keeps things in orbit.</td>
</tr>
<tr>
<td><strong>Level 6</strong></td>
<td>link the downward movement of objects to gravity.</td>
</tr>
<tr>
<td><strong>Level 5</strong></td>
<td>show that falling objects move downwards.</td>
</tr>
<tr>
<td><strong>Level 4</strong></td>
<td>communicate observations of changes in movement.</td>
</tr>
<tr>
<td><strong>Level 3</strong></td>
<td>sort materials using simple criteria and communicate their observations of materials in terms of their properties.</td>
</tr>
<tr>
<td><strong>Level 2</strong></td>
<td>know that certain actions produce predictable results.</td>
</tr>
<tr>
<td><strong>Level 1</strong></td>
<td>co-operate with shared exploration and supported participation.</td>
</tr>
<tr>
<td>Objective 2</td>
<td>Teacher will illustrate the difference between mass and weight.</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Strand/s</strong></td>
<td>Physical Properties</td>
</tr>
<tr>
<td><strong>Learning Outcomes</strong></td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>describe the mass and weight of an object on different planets and relate this to gravity.</td>
</tr>
<tr>
<td>Level 7</td>
<td>describe the difference between mass and weight and convert mass to weight correctly and vice versa</td>
</tr>
<tr>
<td>Level 6</td>
<td>measure mass and weight correctly with appropriate units.</td>
</tr>
<tr>
<td>Level 5</td>
<td>put a number of objects in order according to their mass.</td>
</tr>
<tr>
<td>Level 4</td>
<td></td>
</tr>
<tr>
<td>Level 3</td>
<td></td>
</tr>
<tr>
<td>Level 2</td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 3</th>
<th>Teacher will present the Sun and stars as light sources and help students understand light.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strand/s</strong></td>
<td>Physical Properties</td>
</tr>
<tr>
<td><strong>Learning Outcomes</strong></td>
<td>Students can:</td>
</tr>
<tr>
<td>Level 8</td>
<td>elaborate on stars as being distant light sources and explain their distance in terms of light years.</td>
</tr>
<tr>
<td>Level 7</td>
<td>identify the Sun and stars as light sources and describe that light travels in straight lines at very high speed.</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Level 6</td>
<td>correctly describe the stars as distant light sources.</td>
</tr>
<tr>
<td>Level 5</td>
<td>identify the Sun as our main source of light.</td>
</tr>
<tr>
<td>Level 4</td>
<td>understand that the Sun is a luminous object that shines its light on other planets such as the Earth and Moon.</td>
</tr>
<tr>
<td>Level 3</td>
<td>start to understand that there are many stars in the universe and these are luminous at night.</td>
</tr>
<tr>
<td>Level 2</td>
<td>show interest in luminous objects.</td>
</tr>
<tr>
<td>Level 1</td>
<td>accept and engage in co-active exploration.</td>
</tr>
</tbody>
</table>

**Objective 4**  
Teacher will engage students to explore space exploration and describe why satellites are useful.

**Strand/s**  
Physical Properties

**Learning Outcomes**  
Students can:

<table>
<thead>
<tr>
<th>Level 8</th>
<th>explain in more detail some benefits of space explorations such as the use of GPS and communication.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 7</td>
<td>identify some examples of the benefits of space exploration.</td>
</tr>
<tr>
<td>Level 6</td>
<td>understand that space exploration took place gradually.</td>
</tr>
<tr>
<td>Level 5</td>
<td>recognise that objects and humans have been sent in space.</td>
</tr>
<tr>
<td>Level 4</td>
<td>recognise and identify the key terms related to space and its exploration.</td>
</tr>
<tr>
<td>Level 3</td>
<td>begin to understand some of the key terms related to space and its exploration.</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Level 2</td>
<td>these activities may not be relevant at (Level 2)</td>
</tr>
<tr>
<td>Level 1</td>
<td>these activities may not be relevant at (Level 1)</td>
</tr>
</tbody>
</table>