



## Links to the Western Australian Curriculum

This scope and sequence provides an overview of how *ScienceWorld 8* covers the Western Australian Curriculum. The focus is on the Science Understanding strand, although only some of the Science as a Human Endeavour content and elaborations are covered in this version of the scope and sequence. Included online in the teacher support are curriculum scope and sequence guides that detail how *ScienceWorld* covers the Western Australian Curriculum content descriptions across all four books, and these also include a full mapping of the Science as a Human Endeavour and Science Inquiry Skills strands.

### Abbreviations:

BS: Biological Sciences

CS: Chemical Sciences

ESS: Earth and Space Sciences

PS: Physical Sciences

## ScienceWorld 8

| Chapter & Unit titles              | Science Understanding  | Elaborations   |
|------------------------------------|--|--|
| <b>1 Let's experiment</b>          |  |  |
| 1.1 What is science?               | Science Inquiry Skills   |  |
| 1.2 Experimenting                  | Science Inquiry Skills   |  |
| 1.3 Solving problems               | Science Inquiry Skills   |  |
| <b>2 Solids, liquids and gases</b> |  |  |
| 2.1 Properties of matter           | CS: Properties of the different states of matter can be explained in terms of the motion and arrangement of particles (ACSSU151)   |  |
| 2.2 Solid–liquid–gas               | CS: Properties of the different states of matter can be explained in terms of the motion and arrangement of particles (ACSSU151)   | <ul style="list-style-type: none"> <li>modelling the arrangement of particles in solids, liquids and gases</li> <li>using the particle model to explain observed phenomena linking the energy of particles to temperature changes</li> </ul>   |
| 2.3 Using the particle theory      | CS: Properties of the different states of matter can be explained in terms of the motion and arrangement of particles (ACSSU151)   | <ul style="list-style-type: none"> <li>modelling the arrangement of particles in solids, liquids and gases</li> <li>using the particle model to explain observed phenomena linking the energy of particles to temperature changes</li> </ul>   |
| <b>3 Introducing energy</b>        |  |  |
| 3.1 What is energy?                | PS: Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems (ACSSU155) |  |
| 3.2 Forms of energy                | PS: Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems (ACSSU155) | <ul style="list-style-type: none"> <li>recognising that kinetic energy is the energy possessed by moving bodies</li> <li>recognising that potential energy is stored energy, such as gravitational, chemical and elastic energy</li> <li>using flow diagrams to illustrate changes between different forms of energy</li> <li>investigating different forms of energy in terms of the effects they cause, such as gravitational potential causing objects to fall and heat energy transferred between materials that have a different temperature</li> </ul> |



|                                   |   |  |
|-----------------------------------|---|--|
| 3.3 Energy comes—<br>energy goes  | PS: Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems (ACSSU155)  | <ul style="list-style-type: none"> <li>• recognising that kinetic energy is the energy possessed by moving bodies</li> <li>• recognising that potential energy is stored energy, such as gravitational, chemical and elastic energy</li> <li>• recognising that heat energy is often produced as a by-product of energy transfer, such as brakes on a car and light globes</li> <li>• using flow diagrams to illustrate changes between different forms of energy</li> </ul>                   |
| <b>4 Cells of life</b>            |   |  |
| 4.1 Cells                         | BS: Cells are the basic units of living things; they have specialised structures and functions (ACSSU149)<br><br>BS: Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150) | <ul style="list-style-type: none"> <li>• examining a variety of cells using a light microscope, by digital technology or by viewing a simulation</li> <li>• distinguishing plant cells from animal and fungal cells</li> <li>• identifying structures within cells and describing their function</li> <li>• recognising that some organisms consist of a single cell</li> <li>• examining the specialised cells and tissues involved in structure and function of particular organs</li> </ul> |
| 4.2 Cell processes                | BS: Cells are the basic units of living things; they have specialised structures and functions (ACSSU149)<br><br>BS: Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150) | <ul style="list-style-type: none"> <li>• examining a variety of cells using a light microscope, by digital technology or by viewing a simulation</li> <li>• distinguishing plant cells from animal and fungal cells</li> <li>• identifying structures within cells and describing their function</li> <li>• examining the specialised cells and tissues involved in structure and function of particular organs</li> </ul>   |
| 4.3 Investigating cells           | BS: Cells are the basic units of living things; they have specialised structures and functions (ACSSU149)   |  |
| <b>5 Elements and compounds</b>   |   |  |
| 5.1 Atoms and molecules           | CS: Differences between elements, compounds and mixtures can be described at a particle level (ACSSU152)  | <ul style="list-style-type: none"> <li>• modelling the arrangement of particles in elements and compounds</li> </ul>   |
| 5.2 Elements and compounds        | CS: Differences between elements, compounds and mixtures can be described at a particle level (ACSSU152)  | <ul style="list-style-type: none"> <li>• modelling the arrangement of particles in elements and compounds</li> <li>• recognising that elements and simple compounds can be represented by symbols and formulas</li> </ul>  |
| 5.3 Making and breaking compounds | CS: Differences between elements, compounds and mixtures can be described at a particle level (ACSSU152)<br><br>CS: Chemical change involves substances reacting to form new substances (ACSSU225)  | <ul style="list-style-type: none"> <li>• modelling the arrangement of particles in elements and compounds</li> <li>• recognising that elements and simple compounds can be represented by symbols and formulas</li> <li>• identifying evidence that a chemical change has taken place</li> <li>• investigating simple reactions such as combining elements to make a compound</li> </ul>   |

| <b>6 Heat energy</b>                 |  |   |
|--------------------------------------|--|---|
| 6.1 Heat and temperature             | PS: Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems (ACSSU155) |   |
| 6.2 Heat transfer                    | PS: Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems (ACSSU155) | <ul style="list-style-type: none"> <li>• using flow diagrams to illustrate changes between different forms of energy</li> <li>• investigating different forms of energy in terms of the effects they cause, such as gravitational potential causing objects to fall and heat energy transferred between</li> <li>• recognising that heat energy is often produced as a by-product of energy transfer, such as brakes on a car and light globes</li> </ul>   |
| 6.3 Exploring heat                   | PS: Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems (ACSSU155) | <ul style="list-style-type: none"> <li>• using flow diagrams to illustrate changes between different forms of energy</li> <li>• investigating different forms of energy in terms of the effects they cause, such as gravitational potential causing objects to fall and heat energy transferred between materials that have a different temperature</li> <li>• recognising that heat energy is often produced as a by-product of energy transfer, such as brakes on a car and light globes</li> </ul> |
| <b>7 The human body</b>              |  |   |
| 7.1 How muscles work                 | BS: Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150)   | <ul style="list-style-type: none"> <li>• examining the specialised cells and tissues involved in structure and function of particular organs</li> <li>• describing the structure of each organ in a system and relating its function to the overall function of the system</li> </ul>   |
| 7.2 Digestion                        | BS: Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150)   | <ul style="list-style-type: none"> <li>• examining the specialised cells and tissues involved in structure and function of particular organs</li> <li>• describing the structure of each organ in a system and relating its function to the overall function of the system</li> <li>• identifying the organs and overall function of a system of a multicellular organism in supporting life processes</li> </ul>   |
| 7.3 Body systems                     | BS: Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150)   | <ul style="list-style-type: none"> <li>• examining the specialised cells and tissues involved in structure and function of particular organs</li> <li>• describing the structure of each organ in a system and relating its function to the overall function of the system</li> <li>• identifying the organs and overall function of a system of a multicellular organism in supporting life processes</li> </ul>   |
| <b>8 Chemical reactions</b>          |  |   |
| 8.1 Physical and chemical properties | CS: Chemical change involves substances reacting to form new substances (ACSSU225)   | <ul style="list-style-type: none"> <li>• identifying the differences between chemical and physical changes</li> <li>• identifying evidence that a chemical change has taken place</li> <li>• investigating simple reactions such as combining elements to make a compound</li> </ul>  |
| 8.2 What is a chemical reaction?     | CS: Chemical change involves substances reacting to form new substances (ACSSU225)   | <ul style="list-style-type: none"> <li>• identifying the differences between chemical and physical changes</li> <li>• identifying evidence that a chemical change has taken place</li> <li>• investigating simple reactions such as combining elements to make a compound</li> </ul>  |
| 8.3 Some common gases                | CS: Chemical change involves substances reacting to form new substances (ACSSU225)   | <ul style="list-style-type: none"> <li>• investigating simple reactions such as combining elements to make a compound</li> </ul>  |



| <b>9 Growth and reproduction</b> |  |   |
|----------------------------------|--|---|
| 9.1 Growth                       | BS: Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150)               | <ul style="list-style-type: none"> <li>examining the specialised cells and tissues involved in structure and function of particular organs</li> </ul>   |
| 9.2 Reproduction                 | BS: Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150)               | <ul style="list-style-type: none"> <li>examining the specialised cells and tissues involved in structure and function of particular organs</li> <li>describing the structure of each organ in a system and relating its function to the overall function of the system</li> <li>identifying the organs and overall function of a system of a multicellular organism in supporting life processes</li> <li>comparing reproductive systems of organisms</li> <li>comparing similar systems in different organisms such as digestive systems in herbivores and carnivores, respirator systems in fish and mammals</li> </ul> |
| 9.3 Reproduction and survival    | BS: Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150)               | <ul style="list-style-type: none"> <li>examining the specialised cells and tissues involved in structure and function of particular organs</li> <li>describing the structure of each organ in a system and relating its function to the overall function of the system</li> <li>identifying the organs and overall function of a system of a multicellular organism in supporting life processes</li> <li>comparing reproductive systems of organisms</li> </ul>  |
| <b>10 The rock cycle</b>         |  |   |
| 10.1 Rocks from fire             | ESS: Sedimentary, igneous and metamorphic rocks contain minerals and are formed by processes that occur within Earth over a variety of timescales (ACSSU153) | <ul style="list-style-type: none"> <li>recognising that rocks are a collection of different minerals</li> <li>considering the role of forces and energy in the formation of different types of rocks and minerals</li> <li>identifying a range of common rock types using keys based on observable physical and chemical properties</li> </ul>  |
| 10.2 Weathering and erosion      | ESS: Sedimentary, igneous and metamorphic rocks contain minerals and are formed by processes that occur within Earth over a variety of timescales (ACSSU153) | <ul style="list-style-type: none"> <li>recognising that rocks are a collection of different minerals</li> <li>considering the role of forces and energy in the formation of different types of rocks and minerals</li> <li>identifying a range of common rock types using a key based on observable physical and chemical properties</li> </ul>   |
| 10.3 The rock cycle              | ESS: Sedimentary, igneous and metamorphic rocks contain minerals and are formed by processes that occur within Earth over a variety of timescales (ACSSU153) | <ul style="list-style-type: none"> <li>recognising that rocks are a collection of different minerals</li> <li>considering the role of forces and energy in the formation of different types of rocks and minerals</li> <li>identifying a range of common rock types using a key based on observable physical and chemical properties</li> </ul>   |