

# Year 7

## Science Understanding

### Biological sciences

Content Descriptor	Lesson Names
Classification helps organise the diverse group of organisms	<p><i>What is Classification?</i></p> <ul style="list-style-type: none"> <li>• Introduction to Classification</li> </ul> <p><i>Living or Non-Living?</i></p> <ul style="list-style-type: none"> <li>• Living or Non-Living?</li> <li>• MRS GREN</li> </ul> <p><i>Dichotomous Keys</i></p> <ul style="list-style-type: none"> <li>• Introduction to Dichotomous Keys</li> <li>• Branching Keys</li> <li>• Circular Keys</li> <li>• Tabular Keys</li> <li>• Classifying Dinosaurs</li> </ul> <p><i>Linnaean Classification</i></p> <ul style="list-style-type: none"> <li>• Kangaroo Counter</li> <li>• Linnaean Classification</li> <li>• Binomial Nomenclature</li> <li>• Species and Hybrids</li> <li>• Carl Linnaeus</li> </ul> <p><i>Examples of Classification</i></p> <ul style="list-style-type: none"> <li>• Dragons in the Deep</li> <li>• Identifying Species</li> <li>• Introduction to Plant Classification</li> <li>• Tardigrades in Parking Lots</li> <li>• The Platypus</li> <li>• Animal Phyla</li> </ul>
Interactions between organisms, including the effects of human activities can be represented by food chains and food webs	<p><i>Ecosystems</i></p> <ul style="list-style-type: none"> <li>• Ecology</li> <li>• Species vs Organism</li> <li>• Ecosystems</li> <li>• Biotic and Abiotic Factors</li> <li>• Interdependent Relationships</li> </ul> <p><i>Food Chains and Food Webs</i></p> <ul style="list-style-type: none"> <li>• Food Chains</li> <li>• Predators, Prey and Competition</li> </ul>

	<ul style="list-style-type: none"> <li>• Food Webs</li> <li>• Decomposers</li> <li>• Consumers</li> </ul> <p><i>Changes in the Environment</i></p> <ul style="list-style-type: none"> <li>• Deforestation</li> <li>• Introduced Species</li> <li>• Cane Toads as an Introduced Species</li> <li>• An Agricultural Affair</li> <li>• Harnessing Fire in Australia</li> <li>• Oil Pollution and Industrial Waste</li> <li>• Pesticides</li> <li>• The Palm Oil Predicament</li> </ul> <p><i>Organisms in Ecosystems</i></p> <ul style="list-style-type: none"> <li>• Antarctica</li> <li>• Saving the Tasmanian Devil</li> <li>• Australian Bushfires</li> <li>• Climate Change</li> <li>• Introduced and Invasive Species</li> <li>• Invasive Species in Australia</li> <li>• Pollution and Ecosystems</li> <li>• What is Pollution?</li> </ul>
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## Chemical sciences

Content Descriptor	Lesson Names
Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques	<p><i>Mixtures and Substances</i></p> <ul style="list-style-type: none"> <li>• Introduction to Mixtures</li> <li>• Pure and Impure Substances</li> <li>• Graphs and Tables of Mixtures</li> <li>• Identifying Mixtures</li> <li>• Separating a Basic Mixture</li> </ul> <p><i>Solutions</i></p> <ul style="list-style-type: none"> <li>• Solute and Solvent</li> <li>• Concentration</li> <li>• Saturation and Line Graphs</li> </ul> <p><i>Suspensions</i></p> <ul style="list-style-type: none"> <li>• Colloids</li> <li>• Suspensions</li> <li>• Emulsions</li> </ul> <p><i>Separating Suspensions</i></p> <ul style="list-style-type: none"> <li>• Introduction to Separation</li> <li>• Filtration</li> </ul>

	<ul style="list-style-type: none"> <li>• Centrifuging</li> <li>• Magnetic and Electrostatic Separation</li> </ul> <p><i>Separating Solutions</i></p> <ul style="list-style-type: none"> <li>• Evaporation</li> <li>• Distillation</li> <li>• Extension: Crystallisation</li> <li>• orption</li> <li>• omatography</li> <li>• Open-Ended Separation Investigation</li> <li>• Separating Mixtures</li> </ul> <p><i>Mixtures around us</i></p> <ul style="list-style-type: none"> <li>• Blood as a Mixture</li> <li>• Indigenous Art using Mixtures</li> <li>• Recycling Sewage</li> <li>• Separation in Food</li> <li>• Separation in Industries</li> <li>• The Cave of the Crystals</li> <li>• The Mystery of Opals</li> <li>• The Zombie Apocalypse Water Shortage</li> <li>• Water Treatment</li> </ul>
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## Earth and space sciences

Content Descriptor	Lesson Names
Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon	<p><i>Universe</i></p> <ul style="list-style-type: none"> <li>• The Universe</li> <li>• Gravity and Orbits</li> <li>• Comets</li> <li>• Asteroids and Meteoroids</li> <li>• Planetary Motion</li> <li>• Why Doesn't Earth Have Rings?</li> </ul> <p><i>Earth, Moon and Sun</i></p> <ul style="list-style-type: none"> <li>• Earth, Moon and Sun</li> <li>• Day and Night</li> <li>• Seasons</li> <li>• Time Zones</li> <li>• Days, Seasons and Time</li> </ul> <p><i>Moon and Eclipses</i></p> <ul style="list-style-type: none"> <li>• Lunar Eclipse</li> <li>• Phases of the Moon</li> <li>• Tides</li> <li>• Solar Eclipse</li> <li>• Tides and the Moon</li> </ul>

	<p><i>Astronomy</i></p> <ul style="list-style-type: none"> <li>• Calendars and the Solar Year</li> <li>• Changing Seasons</li> <li>• Earth's Structure</li> <li>• Exploring Space</li> <li>• Exploring the Moon, Mars and Beyond</li> <li>• Indigenous Constellations</li> <li>• Models of the Solar System</li> <li>• Pluto - The Big Little Planet</li> <li>• Satellites</li> <li>• Space Travel: The Weight Loss Sensation!</li> <li>• Telescopes</li> <li>• Extension: Earth's Magnetic Field</li> </ul>
<p>Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon</p>	<p><i>Universe</i></p> <ul style="list-style-type: none"> <li>• The Universe</li> <li>• Gravity and Orbits</li> <li>• Comets</li> <li>• Asteroids and Meteoroids</li> <li>• Planetary Motion</li> <li>• Why Doesn't Earth Have Rings?</li> </ul> <p><i>Earth, Moon and Sun</i></p> <ul style="list-style-type: none"> <li>• Earth, Moon and Sun</li> <li>• Day and Night</li> <li>• Seasons</li> <li>• Time Zones</li> <li>• Days, Seasons and Time</li> </ul> <p><i>Moon and Eclipses</i></p> <ul style="list-style-type: none"> <li>• Lunar Eclipse</li> <li>• Phases of the Moon</li> <li>• Tides</li> <li>• Solar Eclipse</li> <li>• Tides and the Moon</li> </ul> <p><i>Astronomy</i></p> <ul style="list-style-type: none"> <li>• Calendars and the Solar Year</li> <li>• Changing Seasons</li> <li>• Earth's Structure</li> <li>• Exploring Space</li> <li>• Exploring the Moon, Mars and Beyond</li> <li>• Indigenous Constellations</li> <li>• Models of the Solar System</li> <li>• Pluto - The Big Little Planet</li> <li>• Satellites</li> <li>• Space Travel: The Weight Loss Sensation!</li> <li>• Telescopes</li> </ul>

<p>Some of Earth's resources are renewable, including water that cycles through the environment, but others are non-renewable</p>	<ul style="list-style-type: none"> <li>• Extension: Earth's Magnetic Field</li> </ul> <p><i>Introduction to Earth's Resources</i></p> <ul style="list-style-type: none"> <li>• Introduction to Earth's Resources</li> <li>• Renewable and Non-Renewable Energy Sources</li> </ul> <p><i>Non-Renewable Resources</i></p> <ul style="list-style-type: none"> <li>• Fossil Fuels as a Resource</li> <li>• Soil as a Resource</li> <li>• Minerals and Ores as Resources</li> <li>• Mining</li> <li>• Nuclear Fuel as a Resource</li> </ul> <p><i>Renewable Resources</i></p> <ul style="list-style-type: none"> <li>• Living Things as a Resource</li> <li>• Air as a Resource</li> <li>• Wind as a Resource</li> <li>• Wind Turbines</li> <li>• Solar Energy</li> <li>• Water Power</li> <li>• Geothermal Energy</li> <li>• A limitless Source Of Energy</li> <li>• Choosing Renewables</li> <li>• The Power of Sunshine</li> <li>• Types of Resources</li> </ul> <p><i>Ecological Energy</i></p> <ul style="list-style-type: none"> <li>• Antarctica, a Shared Continent</li> <li>• Changing Seasons</li> <li>• Investigation: Coal vs. Solar for Australia's Future</li> <li>• Renewable Energy</li> </ul> <p><i>The Water Cycle</i></p> <ul style="list-style-type: none"> <li>• Water on Earth</li> <li>• Water Cycle</li> <li>• States of Water</li> <li>• The Water Cycle as a Closed System</li> <li>• Influences on the Water Cycle</li> <li>• Cloudy with a Chance of Hamburgers</li> <li>• Reading a Weather Map</li> <li>• The Water Cycle</li> <li>• Water on Earth</li> </ul> <p><i>Water Management</i></p> <ul style="list-style-type: none"> <li>• Aquifers</li> <li>• Hydroelectricity</li> <li>• Irrigation</li> <li>• Our Water Use</li> <li>• Science, Tradition and Modern Medicine</li> </ul>
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	<ul style="list-style-type: none"> <li>• The Great Artesian Basin</li> <li>• Water Conservation</li> <li>• Water Management</li> </ul>
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## Physical sciences

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Change to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object	<p><i>Introduction to Forces</i></p> <ul style="list-style-type: none"> <li>• What are Forces?</li> <li>• Drawing Forces</li> <li>• Balanced and Unbalanced Forces</li> <li>• What are Forces?</li> <li>• Drawing Forces</li> <li>• Balanced and Unbalanced Forces</li> </ul> <p><i>Types of Forces</i></p> <ul style="list-style-type: none"> <li>• Contact and Non-Contact Forces</li> <li>• Gravity</li> <li>• Magnetism</li> <li>• Electrostatic Force</li> <li>• Forces</li> </ul> <p><i>Simple Machines</i></p> <ul style="list-style-type: none"> <li>• Levers</li> <li>• Wheels, Axles and Pulleys</li> <li>• Inclined Planes</li> <li>• Gears</li> <li>• Bicycle Investigation</li> <li>• Gear Ratio</li> </ul> <p><i>Forces in Everyday Life</i></p> <ul style="list-style-type: none"> <li>• Friction</li> <li>• Ancient Tools and Weapons</li> <li>• Comparing Robots</li> <li>• Earth's Magnetic Field</li> <li>• Fact or Friction?</li> <li>• How Planes Stay Up</li> <li>• Maglev Trains</li> <li>• Planetary Motion</li> <li>• Safety Systems</li> <li>• Sports Science</li> <li>• Tides</li> </ul>