Science (1999)

Years 1 to 10
Sourcebook Guidelines
(Part 8 of 8)

Note: The PDF version of this document has been split into sections for easier download. This file is Part 8 of 8.

Queensland Government
Queensland Studies Authority
Partnership and Innovation

Appendix 1: Examples of learning outcomes at Foundation Level

Science and Society	Earth and Beyond	Energy and Change
Key concepts *Historical and cultural factors influence the nature and direction of science which, in turn, affects the development of society.* *Science as a 'way of knowing' is shaped by the ways that humans construct their understandings.* *Decisions about the ways that science is applied have short- and long-term implications for the environment, communities and individuals.*	**Key concepts** *The Earth, solar system and universe are dynamic systems.* *Events on Earth, in the solar system and in the universe occur on different scales of time and space.* *Living things use the resources of the Earth, solar system and universe to meet their needs.*	**Key concepts** *The forces acting on objects influence their motion, shape, behaviour and energy.* *In interactions and changes, energy is transferred and transformed but is not created or destroyed.* *There are different ways of obtaining and utilising energy and these have different consequences.*
Level statement *Students are developing an understanding of the ways science affects aspects of their lives. They are developing an intuitive understanding of some common natural phenomena.*	**Level statement** *Students are developing an understanding of the features of the Earth and sky. They are developing an understanding of their immediate non-living environment and uses made of it.*	**Level statement** *Students are developing an understanding of the ways that things move and behave and can communicate some of these understandings.*
Examples of outcomes **F.1** Students identify basic cause–effect relationships across a range of environments, e.g. because the sun has set, it is night-time. Students recognise obvious weather phenomena, e.g. wind, rain, thunder, lightning. Students identify changes in plants and animals (including humans), e.g. aspects of growth; ageing; life cycles. **F.2** Students use their senses to identify differences between familiar objects, e.g. texture — food, fabrics, floor coverings; smells — food, flowers, body odour. Students use their senses to collect information about their immediate environment, e.g. classroom, school, home, playground, shop. Students participate in water-play activities to investigate, e.g. wave action in pool, pond or basin; exploring whether objects float or sink. **F.3** Students recognise familiar health-care workers, e.g. physiotherapist, occupational therapist, nurse, doctor. Students identify their own specialised equipment, e.g. wheelchair, glasses, communication board, hearing aid. Students demonstrate healthy hygiene practices when preparing food, e.g. washing hands beforehand; cleaning preparation surfaces; cleaning utensils.	**Examples of outcomes** **F.1** Students identify different aspects of a feature of the Earth, e.g. beach, garden, ocean, desert. Students identify features of the sky, e.g. stars, clouds. Students identify differences between the sun and the moon. **F.2** Students recognise aspects of their school environment, e.g. classroom, toilet, oval. Students identify aspects of their classroom, e.g. desk, table, chair, communication board. Students identify different sounds, smells and sights of their immediate environment. Students identify the difference between daytime and night-time. **F.3** Students identify activities carried out on a beach, e.g. swimming, boating, building sand castles. Students demonstrate activities appropriate to going to the shops, e.g. buying food, staying with carer, sitting appropriately in cafe. Students locate places in their immediate environment according to their use, e.g. playground is for playing, lunch area for eating lunch. Students identify and grow plants appropriate for a specific style of garden, e.g. vegetables, flowers.	**Examples of outcomes** **F.1** Students demonstrate that pushing or pulling objects on wheels will make them move. Students demonstrate that running water can make some things move. Students demonstrate that blowing some things will make them move, e.g. wind, fan, mouth. Students demonstrate that they can move their bodies in various ways. Students show that the shape of an object may change if it is dropped or thrown. **F.2** Students recognise that some objects move if pushed/pulled. Students recognise that some toys need something to make them work, e.g. pushing, batteries, electricity, winding up. Students recognise that light is needed at night-time to carry out various activities. Students demonstrate that the more energy transformed the more movement created, e.g. pushing harder on a swing makes it go faster and higher. **F.3** Students use various forms of energy to: • move an object along the floor by pushing, pulling, batteries, winding up, throwing; • move a boat on water by pushing, pulling, batteries, winding up, throwing; • move around on playground equipment in ways such as swinging, running, walking, pushing a swing, jumping; • keep warm by running, rubbing hands together, putting on a heater, lighting a fire.

Life and Living	Natural and Processed Materials
Key concepts *The characteristics of an organism and its functioning are interrelated.* *Evolutionary processes have given rise to a diversity of living things which can be grouped according to their characteristics.* *Environments are dynamic and have living and non-living components which interact.*	**Key concepts** *The properties and structure of materials are interrelated.* *Patterns of interaction between materials can be identified and used to predict and control further interactions.* *The uses of materials are determined by their properties, some of which can be changed.*
Level statement *Students are developing an understanding that some things are living and some things are non-living, and can use observable features to communicate the difference.*	**Level statement** *Students are developing and can communicate an understanding that familiar materials have different properties and particular uses, and that the properties of materials may change.*
Examples of outcomes **F.1** Students identify and label some living things, e.g. people, cat, dog, plants, flowers, insects. Students identify the observable features of particular animals, e.g. cats have fur (that can be seen and touched), legs (that can be seen or touched); miaow (that can be heard). Students identify the observable features of particular plants, e.g. rose bush — flower, petals (see, touch); perfume (smell); thorns (touch, see); leaves (touch, see); branches (touch, see). Students identify features about themselves that show they are living things, e.g. they eat, grow, breathe. **F.2** Students identify and label some non-living things, e.g. rock, car, road, house, sun, shirt, cup. Students recognise that non-living things have particular characteristics, e.g. they do not grow, breathe, reproduce. Students identify observable features that differentiate non-living things from dead animals or plants. Students identify features of a non-living object (e.g. rock, car, shirt, cup) that show that it is not living. **F.3** Students group various objects as living or non-living, e.g. person, cat, insect, rock, car. Students communicate the observable differences between living and non-living things to show an understanding of their status. Students group features of a garden according to whether they are living or non-living, e.g. trees, flowers, insects and grass are living; rocks, soil, water and garden gnomes are non-living.	**Examples of outcomes** **F.1** Students group familiar materials according to an observable property, e.g. physical state (same or different, liquid or solid, wet or dry), size (same or different, big or small). Students identify observable properties of a familiar material or object, e.g. they identify the taste, smell, texture and colour of a particular food. Students recognise their personal belongings (e.g. bag, chair, clothing), according to observable features. **F.2** Students recognise an object or material after its properties have changed, e.g. egg (raw, boiled, scrambled), writing paper (different colours, sizes, shapes), apple (red, green, tinned, dried). Students observe changes that occur in materials through: • dissolving, for example, sugar/salt/coffee/tablets; • mixing, for example, cordial/flour in water, food colouring in playdough; • burning, for example, toast, wood, marshmallows. **F.3** Students can identify different familiar materials that have similar uses, e.g. you can drink from a cup, glass or mug; to keep warm you can put on a jumper or gloves, put on a heater, eat hot food and drinking warm drinks. Students can identify different uses for familiar materials, e.g. paper can be used for drawing, cutting, gluing and folding; sand can be used to play with in a sandpit, in gardening and in collages. Students group different familiar materials according to their use, soap, detergent and cloths are used for cleaning.