

Tales of the Todd: NTCF – Science Links

Outcomes	Weather and climate	Seasons	Catastrophic events / Natural Disasters
<p>B2 Earth and Beyond (Sc - EB) – link changes in the environment to physical processes on or beyond Earth and to human activities</p>		<p>collect information on the local landscape over a period eg a billabong / creek, soil samples (Sc - EB)</p> <p>investigate local indigenous seasonal calendars (Sc - EB)</p>	
<p>B3 Earth and Beyond (Sc - EB) – investigate patterns of use of natural resources and how they have changed over time</p>	<p>describe ways information is gathered about the earth and its resources eg how satellite imaging contributes to our understanding of the earth, ways in which geologists collect information, the process that meteorologists use to gather information about and predict weather patterns (Sc - EB)</p>		<p>describe the interaction between changes in the earth’s surface and catastrophic events eg volcanic eruptions, weathering (Sc - EB)</p> <p>describe interactions between atmospheric changes and catastrophic events eg cyclones, floods, drought (Sc - EB)</p>
<p>B5 Earth and Beyond (Sc – EB) – critically analyse scientific theories that explain differences and changes in the physical environment and universe</p> <p>Life and Living (Sc – LL) – analyse concepts and principles relating to interactions, balance, continuity and change in living things</p>	<p>investigate the effects of extreme environmental conditions on interactions within an ecosystem eg fire, flood, cyclones (Sc – LL)</p>		<p>investigate the effects of extreme environmental conditions on interactions within an ecosystem eg fire, flood, cyclones (Sc – LL)</p> <p>use scientific theories to explain how events over time have led to catastrophic events on earth (Sc – EB)</p> <p>explain techniques to better monitor and manage natural disasters (Sc – EB)</p>

Outcomes	The Local Environment	Mapping	Landforms
<p>B1 Earth and Beyond (Sc – EB) – describe changes in their physical environment including the sky and how they are affected</p>	<p>describe changes that occur in the local environment eg to a creek after building, to desert after rain (Sc – EB)</p>		
<p>B2 Earth and Beyond (Sc - EB) – link changes in the environment to physical processes on or beyond Earth and to human activities</p>			<p>describe how features of the landscape are altered by physical processes (wind, water, weather) (Sc - EB)</p>
<p>B3 Earth and Beyond (Sc – EB) – investigate patterns of use of natural resources and how they have changed over time</p>			<p>describe the interaction between changes in the earth’s surface and catastrophic events eg weathering (Sc – EB); make connections between physical changes to the surface of the earth and physical processes eg why Australia does not have many high mountains, river drying up in the dry season and a lowering of the water table (Sc – EB); describe ways information is gathered about the earth and its resources eg how satellite imaging contributes to our understanding of the earth, ways in which geologists collect information, the process that meteorologists use to gather information about and predict weather patterns (Sc – EB)</p>
<p>B4 Earth and Beyond (Sc – EB) – use scientific ideas to explain changes in the physical environment in terms of cycles and human exploitation</p>			<p>describe the formation or causes of geological features eg intrusive and extrusive rocks, mountain ranges, earthquakes (Sc – EB)</p>

Outcomes	Natural systems	Living Together
<p>B1 Life and Living (Sc – LL) – describe how the needs, features and functions of living things are related to change over time</p>		<p>describe how living things depend on each other for food and shelter, different ways humans use the land and sea, how living things live in social groups – colonies, herds, families (Sc – LL)</p> <p>describe the relationships between living things and people (Sc – LL)</p>
<p>B3 Life and Living (Sc - LL) – explain that living systems can interact and that such interactions can lead to change</p>	<p>identify and classify relationships between living things which help them survive in a habitat eg food chains, relate feeding relationships to survival, identify interdependent relationships within a group of animals (Sc - LL)</p>	<p>identify and classify relationships between living things which help them survive in a habitat eg food chains, relate feeding relationships to survival, identify interdependent relationships within a group of animals (Sc - LL)</p> <p>report on relationships between living things in an observed ecosystem (Sc - LL)</p> <p>describe the factors that led to disturbance in a local ecosystem, and explore alternatives for the future (Sc - LL)</p>
<p>B5 Life and Living (Sc - LL) – analyse concepts and principles relating to interactions, balance, continuity and change in living things</p>	<p>explain and quantify how the interactions of the natural and physical components of an ecosystem affect its viability (Sc – LL)</p> <p>analyse the effects of environmental change on living things and ecosystems eg the use of a species for biological control of a pest, the effects of introducing herbicides or pesticides on ecosystems* (Sc – LL)</p>	<p>analyse and report on the associations between different systems in living organisms eg circulatory and respiratory in vertebrates / invertebrates, photosynthetic tissues and transport systems in plants (Sc – LL)</p> <p>investigate the effect of external environmental changes on the internal functioning of organisms eg effect of temperature changes on blood flow, response of plants to light (Sc – LL)</p> <p>investigate the effects of extreme environmental conditions on interactions within an ecosystem eg fire, flood, cyclones (Sc – LL)</p> <p>use theories and scientific models to describe how genetic continuity is maintained from generation to generation naturally and artificially (Sc – LL)</p> <p>analyse the effects of environmental change on living things and ecosystems eg the use of a species for biological control of a pest, the effects of introducing herbicides or pesticides on ecosystems (Sc – LL)</p>

		compare and describe how different animals and plants respond to changes in environmental conditions to ensure their survival over time eg physical, behavioural or functional adaptations (Sc – LL)
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Outcomes	Land Use	Human Impact
B2 Earth and Beyond (Sc – EB) – link changes in the environment to physical processes on or beyond Earth and to human activities	research and report on how land is used in the local region	describe how features of the landscape are altered by human processes (farming, mining, urbanisation) (Sc – EB) describe the consequences on the environment of different methods of farming / mining / building and the steps taken to reduce degradation * (Sc – EB)
Outcomes	Land Use	Human Impact
B3 Place, Landforms and Features (SOSE - PLF) – describe and predict, from a scientific perspective, the impacts of changes in the physical environment and the universe Natural Systems (SOSE - NS) – describe features of ecosystems, explain their location and deduce the conditions that contribute to their distribution and / or change Environmental Awareness and Care (SOSE - EAC) – report on how organisations promote environmental monitoring and protection	organise and use field work to gather data about resource management and land use (SOSE - PLF) research places with similar land use or resources, and explain how these areas have changed over time (SOSE - PLF) examine how human impact can change environments eg introduced species, damming, tourism * (SOSE - PLF) survey and describe different viewpoints of groups and individuals about people changing a natural system eg building a dam * (SOSE - PLF) critically analyse how conflict arises when different groups want to use the same resource for different purposes within a local context eg environmentalist versus developers * (SOSE - EAC) explore the response of people, plants and animals to	evaluate the impact of innovations which may have negative and positive effects on the environment eg introduction of cane toads, refrigerators * #(SOSE - EAC) identify how natural systems respond to changing conditions and research / debate issues arising eg bushfire, invasion of new species (SOSE - NS) research and report how alterations to environments can interrupt natural cycles and flows eg rainforests, coral reefs, Antarctica (SOSE - NS)

	changes in a natural system (SOSE - PLF)	
Outcomes	Land Use	Human Impact
<p>Place, Landforms and Features (SOSE - PLF) - examine and discuss the cause / effect relationship of physical forces in the formation of land features</p> <p>Constructive Learner: 4 (Con 4) – Identifies environmental and social issues within the local and global community and takes steps to promote change</p> <p>Environmental Awareness and Care (SOSE - EAC) - identify the key stakeholders in issues arising from current resources and land use</p>	See B2, B3, B5	<p>consider costs and benefits of projects eg the environmental and social impact of a mining industry * (Con 4)</p> <p>analyse and create a presentation based on predictions for the changing face of an environment eg Ilparpa Claypans * (SOSE – PLF)</p> <p>use maps and field observations to describe changes in a natural environment (SOSE – PLF)</p> <p>analyse the effect of human land use on environmental degradation from the perspectives of the various stakeholders eg increased salinity* (SOSE – EAC)</p> <p>critically analyse positions individuals and groups express on an issue to do with the impact of people’s actions on a natural system eg mining, introduced species * (SOSE – EAC)</p>

Outcomes	Resources	Urbanisation and the Natural Environment
<p>B3</p> <p>Earth and Beyond (Sc – EB) – investigate patterns of use of natural resources and how they have changed over time</p>	<p>describe ways information is gathered about the earth and its resources eg how satellite imaging contributes to our understanding of the earth, ways in which geologists collect information, the process that meteorologists use to gather information about and predict weather patterns (Sc – EB)</p> <p>describe processes used for extracting and processing materials from the earth and the positive and negative impacts of these (Sc – EB)</p>	
Outcomes	Resources	Urbanisation and the Natural Environment

<p>B4 Earth and Beyond (Sc - EB) - use scientific ideas to explain changes in the physical environment in terms of cycles and human exploitation</p>	<p>illustrate the use of science ideas to monitor and guide the establishment of national parks and heritage areas, and manage resources in fishing / forestry / farming * (Sc – EB)</p>	
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Outcomes	Research / monitoring	Issues and decision making	Community
<p>B2 Earth and Beyond (Sc - EB) – link changes in the environment to physical processes on or beyond Earth and to human activities</p>			<p>investigate ways different groups use science in tackling community problems eg species loss, pollution * (Sc - EB)</p>
<p>B4 Earth and Beyond (Sc – EB) – use scientific ideas to explain changes in the physical environment in terms of cycles and human exploitation</p>	<p>identify patterns of global wind, air and ocean currents and how these are monitored eg thermal imaging (Sc – EB)</p> <p>investigate the ways that science has contributed to reducing impact of mining on a community eg revegetation schemes (Sc – EB)</p> <p>illustrate the use of science ideas to monitor and guide the establishment of national parks and heritage areas, and manage resources in fishing / forestry / farming (Sc – EB)</p> <p>explain how present day features, events and methods can be used to make inferences about changes in the earth and beyond eg use of fossil and satellite evidence (Sc – EB)</p>		

B5 Earth and Beyond (Sc - EB) – critically analyse scientific theories that explain differences and changes in the physical environment and universe	research and explain scientific techniques used to monitor the earth and stellar objects (Sc – EB) explain techniques to better monitor and manage natural disasters (Sc – EB)		