

Gold Coast Light Rail



Science Tram

Welcome to the Gold Coast Light Rail Science Tram where we travel Queensland's first light rail system and discover the exciting science and engineering challenges that the project team have encountered to bring the system to life!

The following matrix will help you navigate the Gold Coast Light Rail Science Tram episodes and provide you with information on where the web-episodes link in with the Australian Curriculum and C2C Units.

Name	Links to Australian Curriculum and C2C Units	Learning intention	Follow up activity
Growing with science	<p>Yr 2 : Good to Grow (Biological Sciences)</p> <p><u>Science as a Human Endeavour (SHE)</u> <i>Use and Influence of Science</i></p> <ul style="list-style-type: none"> Elaboration #5 	<ul style="list-style-type: none"> Living things grow, change and have offspring similar to them. Investigate the life of the Sundale Bridge Osprey and the influence that a change in environment can make and how the Gold Coast light rail project is protecting these special birds. 	<ul style="list-style-type: none"> Storyboard/picture story and description. Create a representation of the growth and changes of a familiar living thing i.e. dog, cat, bird based on observations and experiences. Present a description of the changes making links to the resources from Earth that are required by living things.
Saving our planet	<p>Yr 2: Save Planet Earth</p> <p><u>Science as a Human Endeavour (SHE)</u> <i>Use and Influence of Science</i></p> <ul style="list-style-type: none"> Elaboration #2 <p>OR</p> <p>Yr 7: Science Understanding <i>Earth and Space sciences</i></p>	<ul style="list-style-type: none"> Investigate the earth's resources. What they are and how they can be managed so that we conserve them. Look at how the Gold Coast light rail project protects the resources around the Depot to ensure that the habitat of the endangered Wallum Froglets and Green Thighed Frog is kept safe. 	<ul style="list-style-type: none"> Look at the resources around your home (i.e. suburb / park). Present a proposal to conserve the earth's resources you find, justifying your ideas and communicating the possible consequences for inaction or people's everyday lives.
Speedy, steady and safe	<p>Yr 4: Speedy but Safe</p> <p><u>Science as a Human Endeavour (SHE)</u> <i>Use and Influence of Science</i></p> <ul style="list-style-type: none"> Elaboration #1 <p><u>Science Understanding (SU)</u> <i>Physical sciences</i></p> <ul style="list-style-type: none"> Elaboration #1 Elaboration #2 	<ul style="list-style-type: none"> Investigate how forces affect objects through direct and indirect contact and how this relates to the safety equipment i.e. the concept of push and pulls on the Gold Coast light rail's tram brakes. 	<ul style="list-style-type: none"> Look at how forces affect objects through direct and indirect contact. Investigate object likes cars, buses or skateboards and make a storyboard explaining the reaction between force and motion.

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Making materials work: Concrete	<p>Yr 5: Matter Matters</p> <p><u>Science Understanding (SU)</u> <i>Chemical sciences</i></p> <ul style="list-style-type: none"> Elaboration #1 Elaboration #4 	<ul style="list-style-type: none"> Investigate the classification of matter and how matter structures the world around you. Look into the observable properties and the making of concrete on the Gold Coast light rail project. Look at how solids, liquids and the development of composite materials meet the needs of modern society. 	<ul style="list-style-type: none"> Investigate how different ingredients mixed together make a cake. Write a hypothesis on how you think any change to the ingredients could affect the outcome and then test i.e. adding more oil or water.
Making materials work: Rail	<p>Yr 5: Matter Matters</p> <p><u>Science Understanding (SU)</u> <i>Chemical sciences</i></p> <ul style="list-style-type: none"> Elaboration #1 Elaboration #4 	<ul style="list-style-type: none"> Investigate the classification of matter and how matter structures the world around you. Look into the observable properties and how the Gold Coast light rail project welds pieces of rail together through a chemical process. Look at how solids, liquids and the development of composite materials meet the needs of modern society. 	<ul style="list-style-type: none"> Investigate how different ingredients mixed together make a cake. Write a hypothesis on how you think any change to the ingredients could affect the outcome and then test i.e. adding more oil or water.
Understanding the environment	<p>Yr 7: Organising Organisms</p> <p><u>Science Understanding (SU)</u> <i>Biological sciences</i></p> <ul style="list-style-type: none"> Descriptor 1 Elaboration #2 Elaboration #5 Descriptor 2 Elaboration #5 	<ul style="list-style-type: none"> Living things grow, change and have offspring similar to them. Investigate the life of the Sundale Bridge Osprey and the influence that a change in environment can make and how the Gold Coast light rail project is protecting these special birds. Investigates the relationship between organisms, ecosystems and human interactions. 	<ul style="list-style-type: none"> Look into an animal of your choice i.e. a whale, monkey and giraffe and investigate the habitat they live in. Make recommendations as to how these animals can be protected to ensure they aren't made extinct i.e. oils spills and whales, tree lopping and monkeys, protecting the landscape for the giraffe.

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Trams powering up	<p>Yr 6: Power Up- Electricity Usage Down</p> <p><u>Science Understanding (SU)</u> <i>Physical sciences</i></p> <ul style="list-style-type: none"> • Descriptor 1 • Descriptor 2 	<ul style="list-style-type: none"> • Investigate how energy from a variety of sources can be used to generate electricity. Look at how the Gold Coast light rail project is powering their trams and how they are conserving energy through a closed circuit and what makes it sustainable. 	<ul style="list-style-type: none"> • Why don't you look at how you can create a closed circuit system or how moving air and water can be used to generate electricity
Wash without waste	<p>Yr 7: Water - Waste Not Want Not</p> <p><u>Science as a Human Endeavour (SHE)</u> <i>Use and Influence of Science</i></p> <ul style="list-style-type: none"> • Descriptor 1 • Elaboration #2 • Elaboration #3 <p><u>Science Understanding(SU)</u> <i>Chemical sciences</i></p> <ul style="list-style-type: none"> • Descriptor 1 • Elaboration #2 • Elaboration #3 	<ul style="list-style-type: none"> • Investigate the filtration systems used on the Gold Coast light rail project to wash the trams. Look at the water treatment and recycling process. 	<ul style="list-style-type: none"> • Look around your home and see what you use water for. Come up with a persuasive argument for saving water and what issues there are with using recycled water which isn't treated.
Wheels in motion	<p>Yr 7: Moving Right Along</p> <p><u>Science Understanding (SU)</u> <i>Physical sciences</i></p> <ul style="list-style-type: none"> • Descriptor 1 • Elaboration #1 • Elaboration #2 • Descriptor 2 • Elaboration #1 	<ul style="list-style-type: none"> • Investigate how the change to an object's motion is caused by unbalanced forces acting on an object. • Look at the safety design of the Gold Coast light rail project's <i>Flexity 2</i> trams and how they have been designed as an adhesion railway. 	<ul style="list-style-type: none"> • Investigate how balanced and unbalanced forces affect the motion of an object. Why don't you look at spinning a bucket of water around your head – why doesn't the water come out.

No viewer should rely upon any matter contained in these web-episodes without considering and, if necessary taking appropriate professional advice upon his or her own particular circumstance. The contents of these web-episodes do not constitute advice.

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