

SCIENCENTRE AT QUEENSLAND MUSEUM

Australian Curriculum Links for Years 3-4 - Term 3 2017

Sciencentre exhibits link to the Australian National Science Curriculum specifically in the strands of Science Understanding and Science Inquiry Skills. Links to general capabilities and other learning areas may also be relevant.

Direct links below indicate content that is directly covered within the exhibition, while indirect links indicate content that is dependent on how people use and facilitate various exhibits.

General capabilities relevant to Sciencentre exhibits

Direct links	
<p>Literacy Comprehending texts through listening, reading and viewing.</p> <p>Numeracy Recognise and using patterns and relationships.</p>	<p>Critical and Creative Thinking Inquiring – identifying, exploring and organising information and ideas. Generating ideas, possibilities and actions. Reflecting on thinking and processes. Analysing, synthesising and evaluating reasoning and procedures.</p>

[Action Stations - Sciencentre](#)

Get hands-on with everyday science. Science is everywhere - at home, school, work and play. Discover what makes everyday things tick.

	Direct link	Indirect link	Sample exhibits that support the curriculum
Year 3	Physical sciences (ACSSU049) Heat can be produced in many ways and can move from one object to another.	Nature and development of science (ACSHE050) Science involves making predictions and describing patterns and relationships. Processing and analysing data and information (ACSIS215) Compare results	<ul style="list-style-type: none"> Staying cool – exploring how heat made from light energy is soaked up by different colours.

		with predictions, suggesting possible reasons for findings.	
Year 4	<p>Chemical sciences (ACSSU074) Natural and processed materials have a range of physical properties that can influence their use.</p> <p>Physical sciences (ACSSU076) Forces can be exerted by one object on another through direct contact or from a distance.</p>	Nature and development of science (ACSHE061) Science involves making predictions and describing patterns and relationships.	<ul style="list-style-type: none"> • Hand battery – what metals can you use to create electricity. • Feel the force – physically feel the forces acting from a distance between large magnets. • Newton’s Cradle – explore forces exerted through direct contact as large balls strike stationary balls. • Pulley yourself up – pull on a rope across multiple pulleys to lift yourself up.

Body Zone - Sciencentre

Your body - like you’ve never seen it before. Challenge it, move it, re-assemble it, confuse it. Collect your vital statistics. For a total hands-on, minds-on, body-on experience – jump in!

	Direct link	Indirect link	Sample exhibits that support the curriculum
Year 3		Processing and analysing data and information (AC SIS215) Compare results with predictions, suggesting possible reasons for findings.	
Year 4	<p>Chemical sciences (ACSSU074) Natural and processed materials have a range of physical properties that can influence their use.</p> <p>Physical sciences (ACSSU076) Forces can be exerted by one object on another through direct contact or from a distance.</p>	Nature and development of science (ACSHE061) Science involves making predictions and describing patterns and relationships.	<ul style="list-style-type: none"> • Feel the difference – use your senses to feel what is inside the box. Different objects are made of different materials. • Hold and squeeze - Test out your hand and arm strength and observe the force you exert with each hand. • Bullseye – vary the force with which you throw the ball and notice the change in

			<p>speed and accuracy.</p> <ul style="list-style-type: none"> • Biking with Boney – explore direct contact forces as you pedal a bike and watch a skeleton move alongside you.
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[Mathamazing - Sciencentre](#)

Until 3 September 2017

Mathamazing encourages students to playfully explore maths concepts through 22 hands-on exhibits, five floor-based Mega Maths Puzzles and sixty Puzzle Placemats. Each *Mathamazing* experience will inspire mathematical curiosity and confidence, and build greater understanding of mathematical concepts. These concepts all link to real world experiences. For example:

- Use a simple scale to compare objects of different masses. Which is lightest and which is heaviest?
- Build a strong catenary arch shape and discuss the forces acting on the blocks.
- Work together to build a giant cube out of different shapes. Can you make other shapes? What forces are acting on the edges or angles of the shapes?
- Race two balls down a track. Which will win, the shortest path or the steepest?

Students will leave the exhibition thinking that there is a lot more to maths than previously thought!

This exhibition is targeted at students in year 6 and over, but can be enjoyed by all year levels.

Five floor-based Mega Maths Puzzles are built to an oversized scale, so they have strong visual impact and they offer highly interactive maths experiences for groups and individuals and/or younger students.

Mathamazing. Developed by Questacon – The National Science and Technology Centre, Canberra.

[Fire and Ice Show - Sciencentre](#)

School show topic 10 July – 8 December 2017

From supercool liquid nitrogen to fireworks, things are heating up in the Sciencentre with the Fire and Ice Science Theatre Show. We will bring the temperature down as we rapidly cool, freeze and condense liquids and gases with some unexpected results. Things won't stay cool forever, as we burn our way through chemical reactions and hot colourful flames. This cool show will fire your imagination as we explore the science of fire and ice.

The Fire and Ice Show supports investigation of concepts in the **Chemical** and **Physical Sciences** sub-strands in the Australian Curriculum. Students will also apply **Science Inquiry Skills**, including questioning, predicting, observing cause and effect relationships and explaining.

The Fire and Ice Show is an interactive show where student volunteers are part of the show and students are encouraged share their observations, answer and ask questions and share their explanations.

Concepts explored in a Yr 3-4 show include:	Demonstrations and materials
States of matter – exploring properties and behaviours of solids and liquids	<ul style="list-style-type: none"> • Water vs ice
States of matter – changing state from a solid to a liquid and liquid to solid	<ul style="list-style-type: none"> • Instant ice blocks and challenge (liquid nitrogen) • Frozen bubbles (liquid nitrogen)
States of matter – changing state from a liquid to a gas	<ul style="list-style-type: none"> • Tin can pop (liquid nitrogen)
Making changes to materials can be reversible or irreversible	<ul style="list-style-type: none"> • Paper moon rocket
Chemical reactions such as combustion	<ul style="list-style-type: none"> • Burning paper – Yr 4 • Sparkler • Coloured flames

	Direct link	Indirect link
Year 3	<p>Chemical sciences (ACSSU046) A change of state between solid and liquid can be caused by adding or removing heat.</p> <p>Physical sciences (ACSSU049) Heat can be produced in many ways and can move from one object to another.</p> <p>Nature and development of science (ACSHE050) Science involves making predictions and describing patterns and relationships.</p>	<p>Questioning and predicting (AC SIS053) With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge.</p> <p>Communicating (AC SIS060) Represent and communicate observations, ideas and findings using formal and informal representations.</p>
Year 4	<p>Chemical sciences (ACSSU074) Natural and processed materials have a range of physical properties that can influence their use.</p> <p>Nature and development of science (ACSHE061) Science</p>	<p>Questioning and predicting (AC SIS064) With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge.</p> <p>Communicating (AC SIS071) Represent and communicate</p>

	involves making predictions and describing patterns and relationships.	observations, ideas and findings using formal and informal representations.
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