

STATE LIBRARY
OF QUEENSLAND

Year 10 Physical Sciences

Cover: Selection of databases available through State Library, 2023.

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This research guide is designed for individual use by students.

Please note, due to licensing arrangements, State Library's subscription databases and eBooks are for private research and study purposes only. They may not be used as teaching resources in classroom environments in schools or other educational institutions and students must not be required to access specific databases or eBooks as part of the curriculum.

Teachers can advise students on State Library's resources and encourage their use to help with their studies and research. Students are encouraged to access State Library's resources at school, but not during class time.

Teachers are most welcome to advise students what is available via State Library, and to encourage students to make use of eBooks and databases to help with their studies. It is permissible for a teacher to demonstrate the use of State Library's catalogue, and to point out how various online material can be accessed.

It is also permissible for students to access State Library's online resources at school – but this must not be during class time. An example of permitted use might be where students have a spare period when they work on assignments or homework, and they are accessing databases as private members of the State Library. Information about joining the State Library is here.

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For other information visit [Understanding copyright](#) or contact State Library at copyright@slq.qld.gov.au

Overview

As Queensland's leading research library, State Library is a great place to find information to complete your research-based assessments.

State Library's One Search catalogue is the gateway to an extensive suite of national and international journals, databases, eBooks, encyclopedias, newspaper archives, and collections of thousands of historical images, letters, artworks, diaries, and artefacts to interrogate as sources.

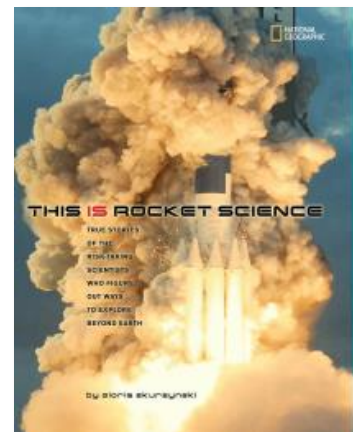
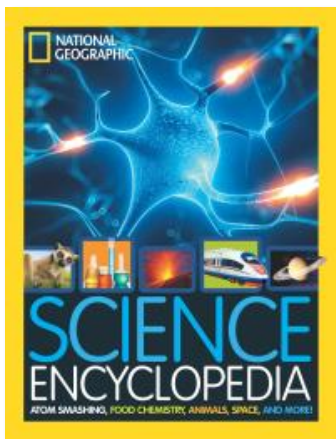
Before you get started

[Become a member](#) of State Library of Queensland (it's free!).

Once you have joined State Library, [log in](#) to your account in One Search so you can use the links in this research guide to access the featured collection items.

You can search our [OneSearch catalogue](#) or begin exploring by clicking on some of the featured items contained in this research guide.

E-Books



Newton's Laws of Motion

Investigate Newton's laws of motion and quantitatively analyse the relationship between force, mass and acceleration of objects.

- Investigating a moving object to analyse and propose relationships between distance and time, speed, force and acceleration.
- Using mathematical representations including graphs and algebraic formulas to quantitatively relate force, speed, acceleration and mass.
- Investigating how First Nations Australians achieve an increase in speed and subsequent impact force through the use of spearthrowers and bows.
- Modelling how a change in net force acting on an object affects its motion and relating to the purpose of safety features such as seatbelts, airbags and crumple zones in vehicles.
- Investigating the application of Newton's laws in sport and how these are applied to improve an athlete's performance or safety.
- Constructing an argument, supported by data, to support lower speed limits near schools or for trucks in urban environments.
- Investigating how driverless vehicles apply Newton's laws of motion to brake in time.

Featured Databases

[ProQuest Ebook Central](#) is a database of Ebooks free to access through your SLQ Membership.

The screenshot shows the ProQuest Ebook Central interface. At the top, the search bar contains the text "force, mass and acceleration" and shows "44295 book results". On the left, there are filters for "Refine your search", including "SORT BY" (set to Relevance), "RESULTS PER PAGE" (set to 10), "BOOK STATUS", "YEAR PUBLISHED" (with a table showing counts for 2024, 2023, and 2022), and "SUBJECT". The main results area shows two book entries: "Questioning the Universe : Concepts in Physics" by Sadoff, Ahren, published by CRC Press LLC in 2008, and "Physics by Example" by Prichard, Tim, published by Brown Dog Books in 2019. Each entry includes a small book cover image, the title, author, publisher, year, ISBN, and edition information. A green dot indicates that the books are available.

The [Britannica Library](#) has articles, images and more, with a selection of resources especially for teenagers.

The screenshot shows the Britannica Library interface for teenagers. The search bar at the top contains "laws of motion" and shows "3,966 RESULTS". Below the search bar, there is a "Reading Level" filter with options 1, 2, and 3, where level 2 is selected. The results are displayed under the "Articles" tab. The first result is "science" with a star icon and the text "TOP 3 RESULTS. 1 MORE RESULTS IN SCIENCE.". Below this, there are three article snippets: "Kepler's Laws of Planetary Motion" by Johannes Kepler, "Newton's Discoveries" by Isaac Newton, and "Galileo's Work with the Telescope" by Galileo Galilei. Each snippet provides a brief description of the article's content. At the bottom, there is a "physics (science)" tag with a star icon.

[Oxford Reference](#) spans 25 different subject areas, bringing together 2 million digitised entries across Oxford University Press's dictionaries, companions, and encyclopedias.

The screenshot shows the Oxford Reference search results page. At the top, the 'Oxford Reference' logo is on the left, and a search bar is on the right. Below the logo, there are navigation tabs for 'Subject' and 'Reference Type', along with 'My Content (0)' and 'My Searches (5)'. The main heading is 'Oxford Reference Search Results'. On the left, there's a sidebar with 'Signed in as: State Library of Queensland' and 'Narrow Your Choices' section with 'REFINE TERMS' and a list of terms including 'erm', 'All', and 'orce, mass and acceleration'. The main content area shows 'You are looking at 1-20 of 137 entries for: All: force, mass and acceleration x Science and technology x'. Below this, there are filters for '137 ENTRIES' and '1 BOOKS', and options for 'View', 'Items per page: 20', and 'Sort by: Relevance'. The first result is for 'gravity', with a reference type of 'Overview Page' and subject 'Science and technology'. The definition provided is: '1 the attractive force that moves or tends to move bodies towards the centre of any celestial body such as the earth or the moon.2 the attribute of having weight.[...]'

[ProQuest Central](#) brings together 47 databases across 175 subject areas, providing easy intuitive access to an incredibly broad and comprehensive range of content.

The screenshot shows the ProQuest Central search results page. At the top, the 'ProQuest' logo is on the left, and 'Access provided by STATE LIBRARY OF QUEENSLAND' is on the right. Below the logo, there's a search bar with the query 'force, mass and acceleration'. The main heading is '268,258 results'. On the left, there's a sidebar with 'Sorted by: Relevance', 'Limit to' (Full text, Peer reviewed), 'Source type' (Scholarly Journals (156,661), Books (41), Audio & Video Works (2), Dissertations & Theses (14,476), Newspapers (7,076)), and 'Publication date' (1016 - 2024 (decades)). The main content area shows a list of results. The first result is 'McKeon's Law of Motion; Lack of Force x Mass = Marlin's Acceleration. [FINAL Edition]' by Shipley, Amy, from 'The Washington Post', Washington, D.C., 09 Sep 2003. The second result is 'Gravito-diamagnetic forces for mass independent large spatial superpositions' by Zhou, Run, Marshman, Ryan J, Bose, Sougato, Mazumdar, Anupam, from 'arXiv.org: Ithaca', Dec 1, 2023. The third result is 'The unsteady aerodynamics of insect wings with rotational stroke accelerations, a systematic numerical study' by van Veen, Wouter G, van Leeuwen, Johan L, van Oudheusden, Bas W, Mujres, Florian T, from 'Journal of Fluid Mechanics; Cambridge Vol. 936, (Apr 2022)'. Each result includes a thumbnail, title, author, source, and options for 'Abstract/Details' and 'Full text'.

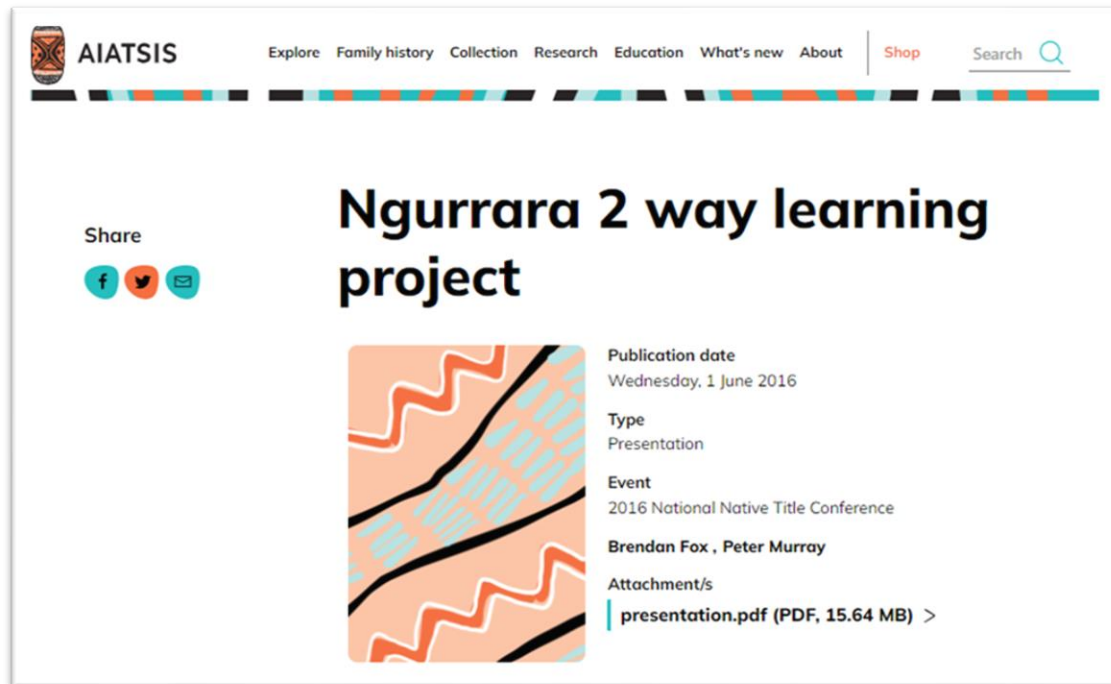
[JSTOR](#) provides access to more than 12 million scholarly journal articles and eBooks, and is especially good for primary sources.

The screenshot shows the JSTOR search results page. At the top, there is a search bar with the query 'force, mass and acceleration' and a 'Workspace' link. Below the search bar, the page displays '33,919 results'. On the left side, there is a 'Refine Results' sidebar with sections for 'ACCESS TYPE', 'SEARCH WITHIN RESULTS', and 'CONTENT TYPE'. The 'CONTENT TYPE' section is expanded to show 'Academic content' and 'Primary source content'. The main results area shows two journal articles. The first article is 'A Study on Student Teachers' Misconceptions and Scientifically Acceptable Conceptions About Mass and Gravity' by Selahattin Gönen, published in the *Journal of Science Education and Technology*, Vol. 17, No. 1 (FEBRUARY 2008), pp. 70-81. The second article is 'Science 101' by Bill Robertson, published in *Science and Children*, Vol. 45, No. 7, Force and Motion (March 2008), pp. 68-71. Each article has a 'Download', 'Save', and 'Cite' button.

[National Geographic Virtual Library](#) is a powerful tool for research offering access to over 100+ years of magazines and hundreds of books, maps, videos, and images.

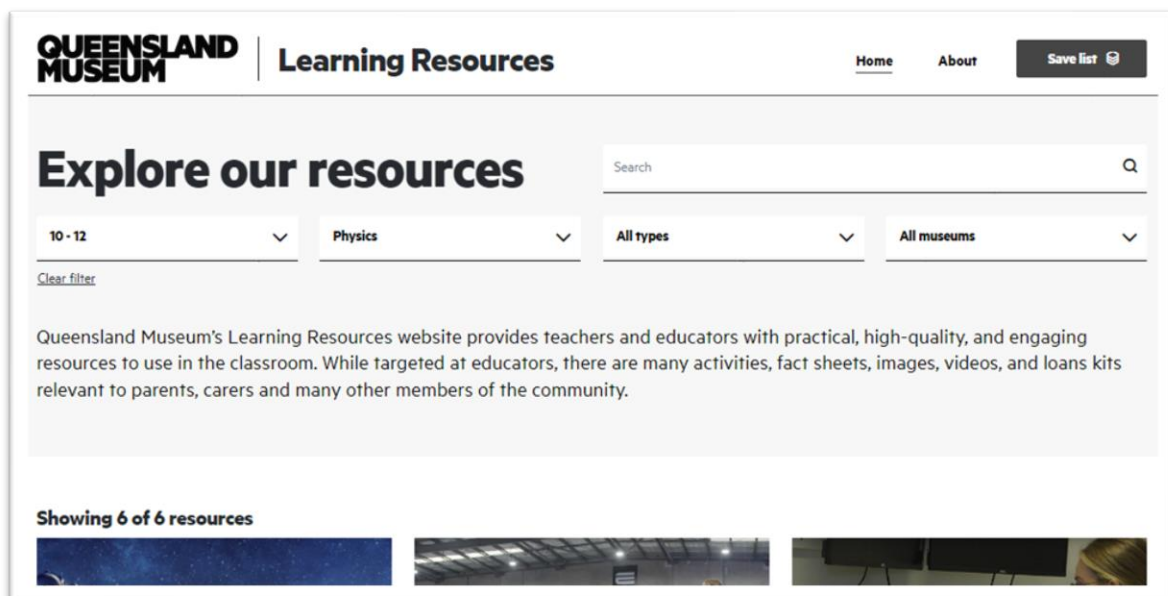
The screenshot shows the National Geographic Virtual Library search results page. At the top, there is a search bar with the query 'mass acceleration physics' and a 'Advanced Search' link. Below the search bar, the page displays 'SHOWING RESULTS FOR' and 'All Content Types' with sub-sections for 'Featured Articles (5)', 'Books (26)', and 'Advertisements (6)'. The 'ALL CONTENT TYPES' section shows 'Search Terms: Similar Articles : mass acceleration physics' and 'Revise Search'. Below this, it states 'Your search had no exact matches. Here are results with some of your terms.' The 'FEATURED ARTICLES (5)' section shows two featured articles. The first article is 'A First Glimpse of the Hidden Cosmos' by Timothy Ferris and Robert Clark, published in *National Geographic Magazine*, Jan. 2015, Volume 227, Issue 1, p. 108. The second article is 'At the Heart of All Matter: The God Particle' by Joel Achenbach and Peter Ginter, published in *National Geographic Magazine*, Mar. 2008, Volume 213, Issue 3, p. 90.

The [Australian Institute Aboriginal and Torres Strait Islander Studies](#) is a powerful tool for First Nations reading and research. Their online database and research projects can provide incredible insight into science from the First Nations perspective.



The screenshot shows the AIATSIS website interface. At the top, there is a navigation bar with the AIATSIS logo and links for 'Explore', 'Family history', 'Collection', 'Research', 'Education', 'What's new', and 'About'. There is also a 'Shop' link and a search bar. The main content area features a large heading 'Ngurrara 2 way learning project' and a 'Share' button with social media icons for Facebook, Twitter, and Email. Below the heading is a thumbnail image with a pattern of orange, black, and teal lines. To the right of the image, there is a list of metadata: 'Publication date: Wednesday, 1 June 2016', 'Type: Presentation', 'Event: 2016 National Native Title Conference', 'Brendan Fox, Peter Murray', and 'Attachment/s: presentation.pdf (PDF, 15.64 MB) >'. The website has a decorative horizontal bar with a repeating pattern of black, orange, and teal squares.

[Queensland Museum](#) provide Learning Resources website students with many activities, fact sheets, images, and videos.



The screenshot shows the Queensland Museum Learning Resources website. The header includes the 'QUEENSLAND MUSEUM' logo and the text 'Learning Resources'. There are navigation links for 'Home' and 'About', and a 'Save list' button. The main heading is 'Explore our resources'. Below this is a search bar and several filter buttons: '10 - 12', 'Physics', 'All types', and 'All museums'. A 'Clear filter' link is also present. A paragraph of text describes the resources: 'Queensland Museum's Learning Resources website provides teachers and educators with practical, high-quality, and engaging resources to use in the classroom. While targeted at educators, there are many activities, fact sheets, images, videos, and loans kits relevant to parents, carers and many other members of the community.' At the bottom, it says 'Showing 6 of 6 resources' and displays three thumbnail images: a blue starry space scene, a museum interior with a large display, and a close-up of a person's face.

Borrow items.

Order items online through State Library's One Search catalogue and [borrow items from State Library's collections](#) when you visit us onsite.

Ask a librarian

Ask one of State Library's expert librarians for [help with your research inquiry](#).