

STATE LIBRARY<sup>1</sup>  
QUEENSLAND

# Year 10 Physical Sciences

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

© 2026. This work is licensed under the Attribution-NonCommercial-ShareAlike 4.0 International Creative Commons ([CC BY-NC-SA 4.0 license](https://creativecommons.org/licenses/by-nc-sa/4.0/)) by the State Library of Queensland. You are free to share and adapt the work under the following terms: you must give appropriate credit, it is for a non-commercial purpose and, if you remix, transform, or build upon the materials, you must distribute your contributions under the same license as the original.

For other uses please contact State Library at [copyright@slq.qld.gov.au](mailto:copyright@slq.qld.gov.au)



**Date prepared:** 04 March 2026

### **Copyright information for teachers**

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](#).

Please also note that State Library has digitised a range of material such as diaries, and out of copyright publications held in our collections. There are no restrictions on the use of this material as part of a teaching program – and no requirement to be a member of the library to use this material. They are easily findable searching our catalogue using the "SLQ digitised collections" option in the dropdown menu.

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

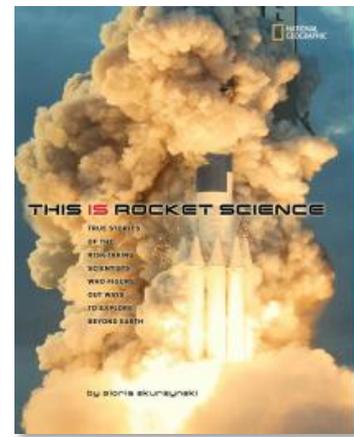
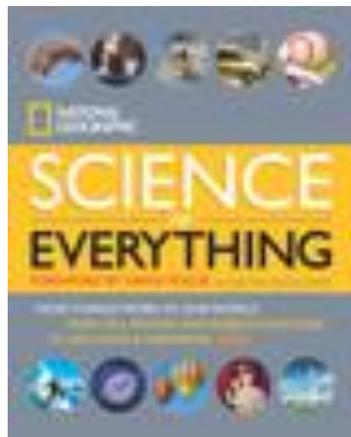
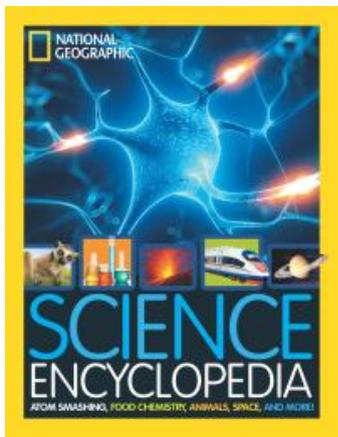
## Before you get started

[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, a search bar contains the text "force, mass and acceleration". Below the search bar, it indicates "44295 book results". On the left side, there are filters for "Refine your search", including "SORT BY" (set to Relevance), "RESULTS PER PAGE" (set to 10), "BOOK STATUS" (with checkboxes for "Owned and subscribed to by my library", "Unlimited Print, Copy, & Download", and "Course Reserve"), "YEAR PUBLISHED" (with checkboxes for 2024 (14), 2023 (638), and 2022 (979)), and "SUBJECT" (with checkboxes for "social science / sociology / general" (1334), "business & economics / general" (1304), "political science / general" (1269), and "technology & engineering /" (1714)). 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 description for "Questioning the Universe" states: "Offers the nonscientist an alternative view: one that demonstrates how physics is perpetually evolving and shows how so many seemingly diverse concepts are intimately connected. This book aims to tell readers the story of what we have learned about nature so far and how we have done it." A green dot indicates the book is "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 teens. At the top, the logo "Britannica Library" is visible, along with "Teens" and a search bar containing "laws of motion". Below the search bar, it says "You searched for 'laws of motion'" and "DISPLAYING 1 - 10 OF 3,966 RESULTS.". There are navigation buttons for "Reading Level" (1, 2, 3) and "Advanced Search". Below the search results, there are tabs for "Articles", "Images", "Videos", and "More". The first result is under the "science" category, titled "Kepler's Laws of Planetary Motion". The description reads: "Kepler's **Laws of Planetary Motion** | Johannes Kepler spent years trying to work out the orbit of the planet Mars by means of a small circle (epicycle) moving ...". Below this, there are two more results: "Newton's Discoveries" and "Galileo's Work with the Telescope". The "Newton's Discoveries" result says: "In his book Principia , which appeared in 1687, Newton set forth three basic **laws of motion** and described the gravitational attraction between bodies. The ...". The "Galileo's Work with the Telescope" result says: "Galileo's Work with the Telescope | While Kepler was working out his **laws of planetary motion**, Galileo Galilei proved that Copernicus was right in stating ...". At the bottom, there is a "physics (science)" category link.

[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'. On the right side, there are links for 'My Content (0)' and 'My Searches (5)'. The main heading is 'Oxford Reference Search Results'. On the left, there is a 'Signed in as:' section for 'State Library of Queensland' and a 'Narrow Your Choices' section with 'REFINE TERMS' and a search input field containing 'force, 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 of '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 is a search bar with the query 'force, mass and acceleration'. The main heading is '268,258 results'. On the left, there is a 'Sorted by' dropdown set to 'Relevance', a 'Limit to' section with checkboxes for 'Full text' and 'Peer reviewed', a 'Source type' section with various categories like 'Scholarly Journals (156,661)', 'Books (41)', 'Audio & Video Works (2)', 'Dissertations & Theses (14,476)', and 'Newspapers (7,076)', and a 'Publication date' section with a range from '1016 - 2024 (decades)'. The main content area shows a list of results. The first result is a newspaper article titled 'McKeon's Law of Motion; Lack of Force x Mass = Marlins' Acceleration. [FINAL Edition]' from 'The Washington Post, Washington, D.C. 09 Sep 2003: D.01'. The second result is a working paper titled 'Gravito-diamagnetic forces for mass independent large spatial superpositions' by Zhou, Run, Marshman, Ryan J, Bose, Sougato, Mazumdar, Anupam, published in 'arXiv.org: Ithaca, Dec 1, 2023'. The third result is a scholarly journal article titled '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, Muljres, Florian T, published in 'Journal of Fluid Mechanics, Cambridge Vol. 936, (Apr 2022)'. Each result includes a thumbnail, title, author, publication information, 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 for the query "force, mass and acceleration". The page displays 33,919 results, sorted by Relevance. On the left, there is a "Refine Results" sidebar with options for "ACCESS TYPE" (Everything, Content I can access) and "CONTENT TYPE" (Academic content: Journals, Book Chapters, Research Reports; Primary source content: Serials, Documents, Books). The main results area shows two journal articles:

- JOURNAL ARTICLE**: "A Study on Student Teachers' Misconceptions and Scientifically Acceptable Conceptions About Mass and Gravity" by Selahattin Gönen, published in *Journal of Science Education and Technology*, Vol. 17, No. 1 (FEBRUARY 2008), pp. 70-81. The abstract mentions concepts like force, mass, and acceleration.
- JOURNAL ARTICLE**: "Science 101" by Bill Robertson, published in *Science and Children*, Vol. 45, No. 7, Force and Motion (March 2008), pp. 68-71. The abstract discusses Newton's laws of motion and the term acceleration.

Each article entry includes a "Download" button, a "Save" button, and a "Cite" button.

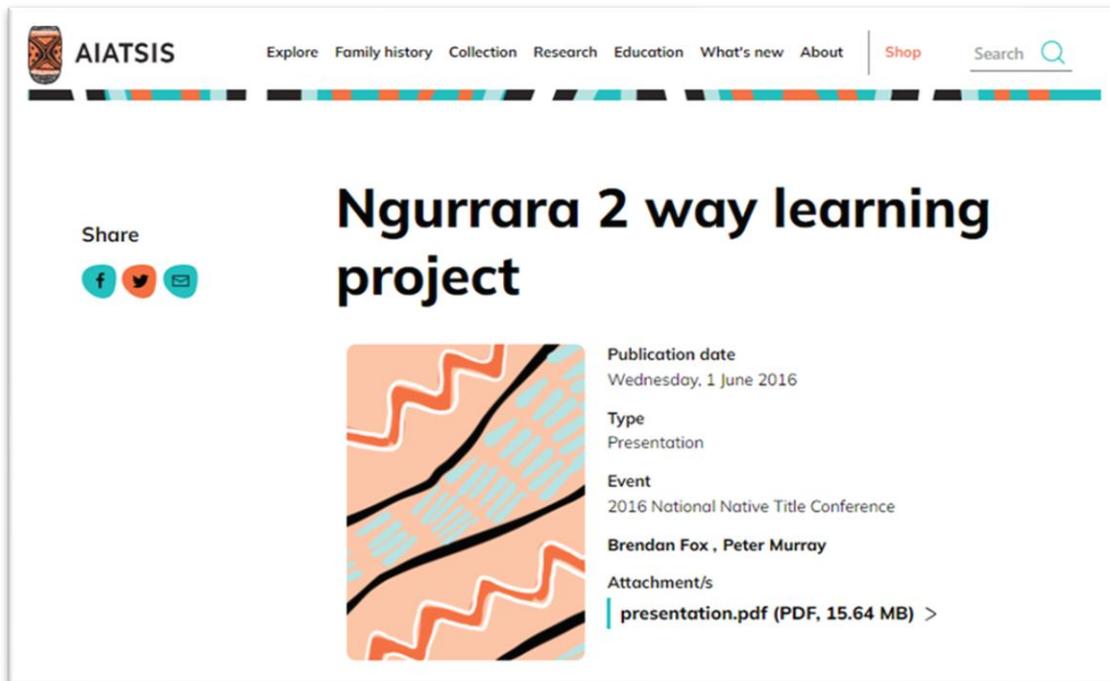
[National Geographic Virtual Library](#) is a powerful tool for research offering access to over 100+ years of magazines and hundreds of books, maps, videos, and images.

The screenshot shows the National Geographic Virtual Library search results page for the query "mass acceleration physics". The page features the National Geographic logo and a search bar with "Advanced Search" options. Below the search bar, it indicates "SHOWING RESULTS FOR" and lists content types: "All Content Types", "Featured Articles (5)", "Books (26)", and "Advertisements (6)".

The search results section shows "ALL CONTENT TYPES" and "Search Terms: Similar Articles : mass acceleration physics". It states, "Your search had no exact matches. Here are results with some of your terms." Under "FEATURED ARTICLES (5)", two articles are displayed:

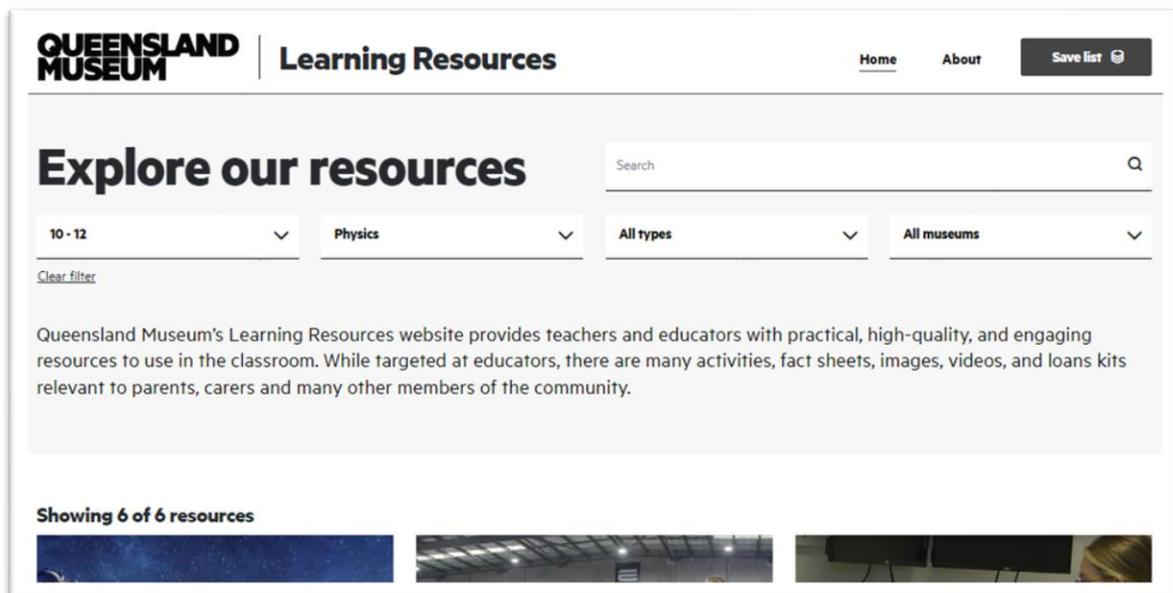
- A First Glimpse of the Hidden Cosmos**: Authors: Timothy Ferris and Robert Clark; Publication: National Geographic Magazine; Jan. 2015, Volume 227, Issue 1, p. 108, Article; Found in National Geographic Archive 1995+.
- At the Heart of All Matter: The God Particle**: Authors: Joel Achenbach and Peter Ginter; Publication: National Geographic Magazine; Mar. 2006, Volume 213, Issue 3, p. 90, Article.

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, About, Shop, and Search. Below the navigation bar is a decorative horizontal line with a pattern of black, orange, and teal. 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. To the right of the heading is a thumbnail image with a pattern of orange, black, and teal. Below the thumbnail is a metadata section with the following information: Publication date: Wednesday, 1 June 2016; Type: Presentation; Event: 2016 National Native Title Conference; Authors: Brendan Fox, Peter Murray; Attachment/s: presentation.pdf (PDF, 15.64 MB) >

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



The screenshot shows the Queensland Museum Learning Resources website. At the top, there is a navigation bar with the Queensland Museum logo, the text "Learning Resources", and links for Home, About, and a Save list button. Below the navigation bar is a large heading "Explore our resources" and a search bar. Below the search bar are four filter buttons: "10 - 12", "Physics", "All types", and "All museums". Below the filter buttons is a "Clear filter" link. Below the "Clear filter" link is a paragraph of text: "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." Below the paragraph is a section titled "Showing 6 of 6 resources" with three thumbnail images.

### **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](#).