

STATE LIBRARY¹
QUEENSLAND

Year 7 Physical Sciences

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

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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

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.

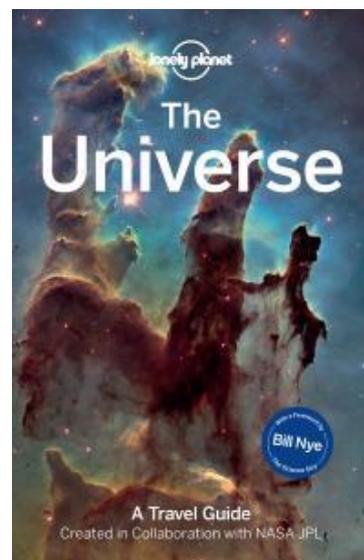
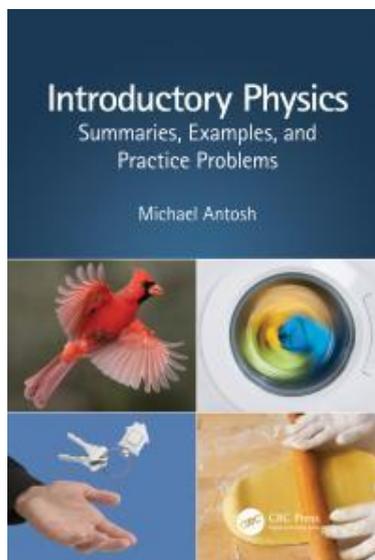
Before you get started

[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.

Featured E-Books



Forces

Investigate and represent balanced and unbalanced forces, including gravitational force, acting on objects, and relate changes in an object's motion to its mass and the magnitude and direction of forces acting on it.

- Investigating the effects of applying different forces to familiar objects of the same and different mass.
- Analysing the effect of balanced and unbalanced forces on an object's motion, such as starting, stopping and changing direction.
- Measuring the magnitude of a force using a force meter and representing the magnitude and direction of forces acting on an object using force arrow diagrams.
- Investigating how Earth's gravitational force is the attractive force which pulls objects to the centre of Earth and its magnitude is related to the mass of an object.
- Investigating how simple machines such as levers and pulleys are used to change the magnitude of force needed to perform a task.
- Examining how gravity affects objects in space, including moons, planets, stars, galaxies and black holes.
- Analysing the forces acting on boomerangs and how early First Peoples of Australia designed an air foil profile which allowed for multiple variations and applications.
- Investigating the effect of forces through the application of simple machines, such as the bow and arrows used by Torres Strait Islander Peoples or the spearthrowers used by First Peoples of Australia.

Featured Databases

For easy reference

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

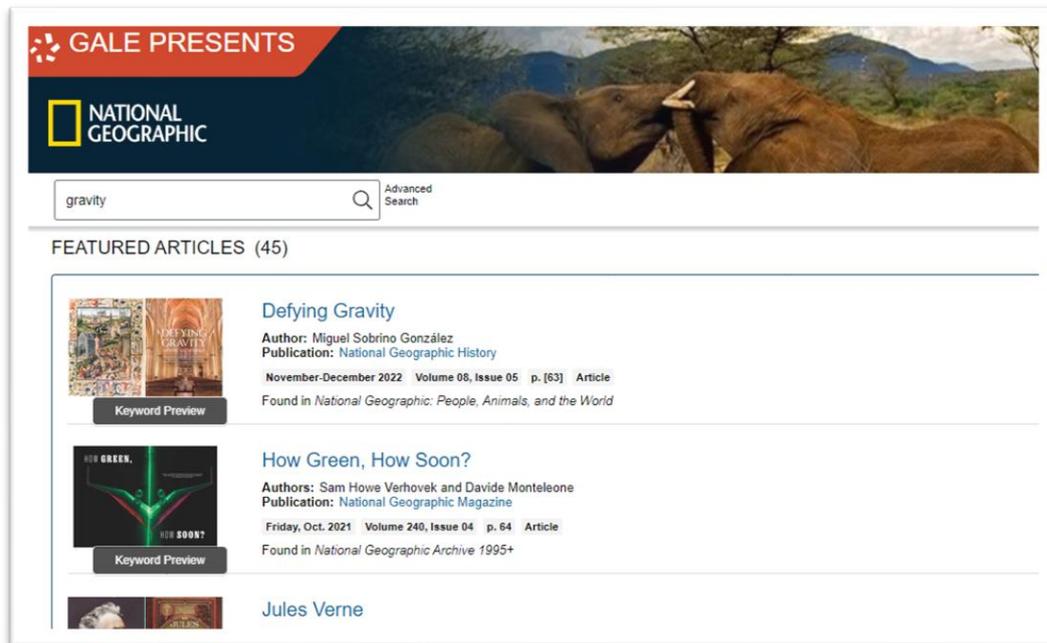
The screenshot shows the Oxford Reference search results page for the term 'gravity'. The page is titled 'Oxford Reference Search Results' and indicates that the user is looking at 1-20 of 3,994 entries. The search term 'gravity' is entered, and a suggestion 'Did you mean gravitic, gravitics' is shown. The page includes a sidebar with 'Narrow Your Choices' and 'REFINE TERMS' options. The main content area shows an overview of 'gravity' with its subject 'Science and technology' and a definition: '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 ...'. The Oxford logo and 'gravity' are visible at the bottom of the search results.

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

The screenshot shows the Britannica Library search results page for the term 'gravity'. The page is titled 'You searched for "gravity"' and indicates that 262 results are displayed. The search term 'gravity' is entered, and a suggestion 'gravity (physics)' is shown. The page includes a sidebar with 'Reading Level' options (1, 2, 3) and 'Advanced Search' options. The main content area shows an overview of 'gravity (physics)' with its subject 'physics' and a definition: 'gravity | Gravity, or gravitation, is the attraction of all matter for all other matter. It is both the most familiar of the natural forces and the least ...'. The Britannica logo and 'gravity (physics)' are visible at the bottom of the search results.

For engaging reading

[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 for the keyword "gravity". The page features a search bar with "gravity" entered and an "Advanced Search" button. Below the search bar, there are "FEATURED ARTICLES (45)". The first article is "Defying Gravity" by Miguel Sobrino González, published in National Geographic History, November-December 2022, Volume 08, Issue 05, p. [63]. The second article is "How Green, How Soon?" by Sam Howe Verhovek and Davide Monteleone, published in National Geographic Magazine, Friday, Oct. 2021, Volume 240, Issue 04, p. 64. The third article is "Jules Verne".

NASA

NASA's online educational portal contains simulations, videos, activities, and games that help build understanding of gravity and its effects on celestial and earthly objects.



The screenshot shows the NASA Space Place website. The header includes the NASA logo, "Space Place", and "Explore Earth and Space!". There is a search bar and a "Search" button. Below the header, there are six icons representing different topics: Earth, Sun, Solar System, Universe, Science and Tech, and Educators. The main content area features a lesson titled "What Is Gravity?". The text explains that gravity is the force by which a planet or other body draws objects toward its center. It also includes a section titled "What else does gravity do?" with the text "Why do you land on the ground when you jump up instead of". To the right of the text is a "More about gravity!" section with an image of a black hole.

[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 "balanced and unbalanced forces, physics". The page displays 1,186 results, sorted by Relevance. On the left, there is a "Refine Results" sidebar with filters for Access Type (Everything, Content I can access), Search Within Results, and Content Type (Academic content: Journals, Book Chapters, Research Reports; Primary source content: Serials, Books, Documents, Images). The main results list includes three journal articles:

- Elementary Design Challenges** by Jonathan W. Gerlach, *Science and Children*, Vol. 47, No. 7, STEM: Science, Technology, Engineering, and Mathematics (March 2010), pp. 43-47. Includes a preview snippet: "...schools in which students seem to lack the most background knowl- edge when it comes to science. In a fifth-grade classroom, I taught a lesson on forces and motion while discussing how more than one force affects an object at the same time. I set the stage by telling students that..."
- Exploring Acceleration: A Dive Into Newton's Second Law of Motion** by Kelly Rose Kosa, Rommel J. Miranda, *Science Scope*, Vol. 44, No. 1, STRAIGHT FROM THE HEADLINES (SEPTEMBER/OCTOBER 2020), pp. 70-77. Includes a preview snippet: "...After watching, the to understanding forces velp a coherent understanding teacher instructs students to dis- and interactions, and it can help of forces and interactions. cuss with a partner and together students to predict the behavior In this article, we present a lesson compile some ideas on their ac- of objects..."
- Dear "Science Scope"**

Each result has a "Download" button and a "Save" button. A "Cite" button is also present for the first two results.

[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, the text "Learning Resources", and navigation links for "Home", "About", and "Save list". The main heading is "Explore our resources". Below this, there are filter dropdowns for "10 - 12", "Physics", "All types", and "All museums". A "Clear filter" link is also present. The main content area contains a paragraph: "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 this, it says "Showing 6 of 6 resources" and displays three thumbnail images of educational resources.

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](#).