

STATE LIBRARY  
OF QUEENSLAND

# Year 8 Physical Sciences

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

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## 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.

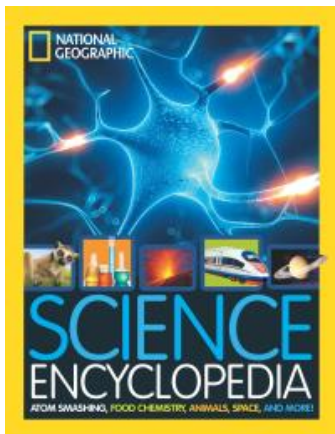
## Before you get started

[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



This is an advanced reading resource

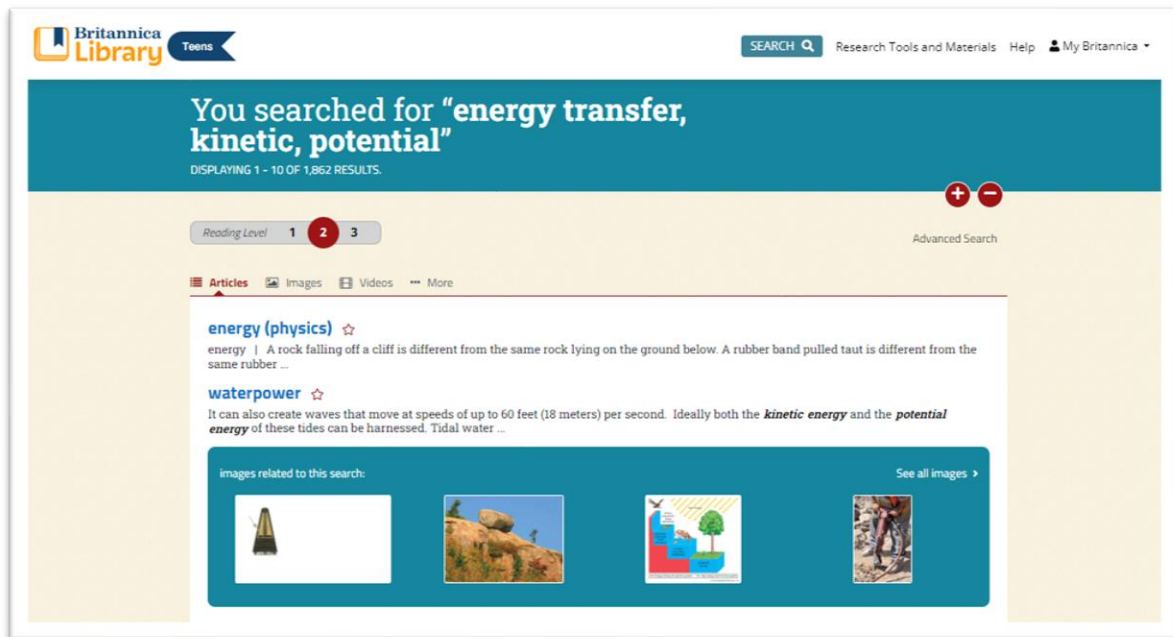
# Kinetic and Potential Energy

classify different types of energy as kinetic or potential and investigate energy transfer and transformations in simple systems.

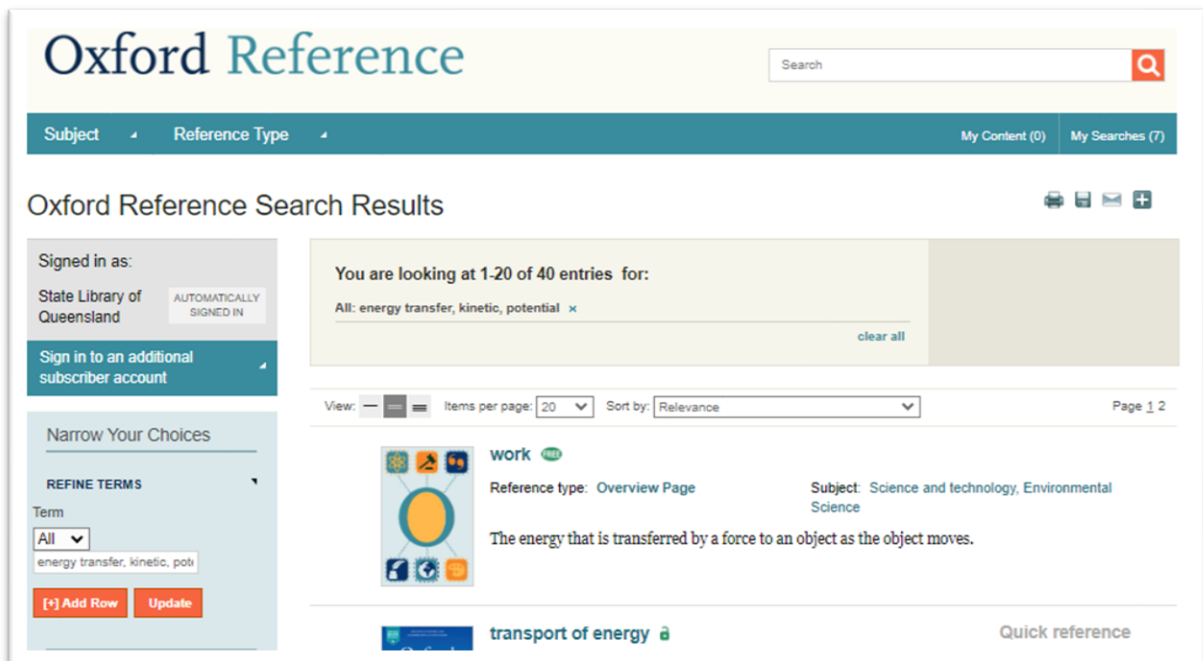
- Investigating relationships between kinetic and potential energy in a simple system such as a roller-coaster or Newton's cradle.
- Classifying types of energy as either kinetic energy such as movement, heat and electricity or potential energy such as chemical, elastic and gravitational.
- Critiquing and using representations such as flow diagrams to illustrate changes between different forms of energy in a system.
- Identifying where heat energy is produced as a by-product of energy transfer, such as filament light globes, exercise, and battery charging and use.
- Using electrical circuits and components to demonstrate electrical energy transfer and its transformation into heat, light and sound.
- Observing a Rube Goldberg machine and identifying the energy transfers and transformations involved.
- Investigating traditional fire-starting methods used by First Nations Australians and their understandings of the transformation of energy.

# Featured Databases

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



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



[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 "energy". The page features a header with "FILE PRESENTS" and "NATIONAL GEOGRAPHIC" over a background image of elephants. Below the header is a search bar with "Advanced Search" and navigation links for "Browse Magazines", "About", "Explore Topics", and "Search History".

The main content area displays "SEARCHING RESULTS FOR energy" and a list of document types:
 

- Featured Images (12)
- Featured Articles (256)
- Books (55)
- Brief Articles (252)
- Videos (35)
- Maps (18)
- Map Supplements (4)
- Magazine Covers (3)
- Advertisements (1,115)

Under "FEATURED ARTICLES", there is a "Sort by: Newest" dropdown and a "Keywords: Keyword: energy" field with a "Revise Search" link. The first featured article is "The Past is Present" by Kennedy Carter, Philip Cheung, and Christopher Gregory Rivera, published in National Geographic Magazine on Tuesday, Aug. 2023, Volume 244, Issue 02, p. 74. It is noted as being found in the National Geographic Archive 1995+.

Other features include a "FILTER YOUR RESULTS" section with buttons for "Subjects", "Publication Title", "Publication", "Document Type", and "Search Within". There is also a "TOPIC FINDER" section with a "Start the Topic Finder" button and a "TERM FREQUENCY" section.

[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 for the keyword "energy transfer, kinetic, potential". The page includes the JSTOR logo, a search bar with the query, and navigation links for "Workspace", "Search", and "Browse".

The main content area displays "18,025 results" and a "Sort by: Relevance" dropdown. The first result is a journal article titled "The Change of Molecular Kinetic Energy into Molecular Potential Energy: The Entropy Principle and Molecular Association" by William D. Harkins, published in the Proceedings of the National Academy of Sciences of the United States of America, Vol. 5, No. 12 (Dec. 22, 1919), pp. 539-546. It is marked as "FREE" and includes a snippet of the abstract: "...September 16, 1919 My work on the orientation of molecules in the surfaces of liquids (Langmuir has also worked on orientation) has led to the recognition of a remarkable new principle or law concerning the change of molecular kinetic energy into molecular potential energy. None of the kinetic relations..."

The second result is a journal article titled "Transfer of Energy" published in The Science Teacher, Vol. 64, No. 1 (JANUARY 1997). It includes a snippet: "...Grades 5-8 Grades 9-12 • motions and forces • motions and forces • transfer of energy • conservation of energy and the increase in disorder • interactions of energy and matter The style of illustration used on the front of this poster was popularized by the American artist Rube Goldberg..."

Both results have "Download", "Save", and "Cite" buttons.

On the left side, there is a "Refine Results" section with filters for "ACCESS TYPE" (Everything, Content I can access), "SEARCH WITHIN RESULTS", and "CONTENT TYPE" (Academic content: Journals (16,980), Book Chapters (97), Research Reports (224); Primary source content: Documents (325), Serials (310), Books (86)).

[Gale Interactive: Science](#) provides a comprehensive view of the most-studied science subjects. Authoritative, high-quality digital content is paired with interactive 3D models.

The screenshot shows the Gale Interactive Science interface. On the left, there is a 'FILTER BY CATEGORY' sidebar with expandable sections for Biology (91), Chemistry (74), Earth Science (23), Common Core State Standards (213), Next Generation Science Standards (164), and Human Anatomy (35). Each section contains sub-topics with checkboxes. On the right, '5 SEARCH RESULTS' are displayed, each with a small image, a title, a brief description, and associated standards. The results include:
 

- Ionization Energy**: Explains ionization energy and trends across the periodic table.
- Digestive System**: Describes the digestive system's role in converting food into energy.
- Geysers**: Explains how geothermal energy creates geysers.
- Periodic Table Blocks**: Discusses how the periodic table is divided into blocks based on electron shells.
- Earthquake**: Describes the sudden shaking of Earth's surface caused by underground rock movement.

[ProQuest Ebook Central](#) Compiles a library of topic specific ebooks for you to access free through your SLQ membership.

The screenshot shows the ProQuest Ebook Central interface. At the top, there is a search bar with the text 'ansfer, kinetic, potential' and a search icon. Below the search bar, there are options for 'Advanced Search' and 'Save this search'. The main area displays '10 results' and a 'Refine your search' section. The 'Refine your search' section includes:
 

- Sort by**: Relevance
- Results per page**: 10
- Book Status**: Options for 'Owned and subscribed to by my library', 'Unlimited Print, Copy, & Download', and 'Course Reserve'.
- Year Published**: A list of years (2023, 2022, 2021) with corresponding result counts (3, 9, 8).
- Subject**: A list of subjects with counts, including 'science / physics / general' (786), 'technology & engineering / materials science / general' (1465), 'science / chemistry / general' (878), 'science / environmental science' (601), 'science / chemistry / physical & theoretical' (564), and 'science / general' (554).

 The search results are filtered to 'BASIC science / physics / general'. Two book results are visible:
 

- Physics Olympiad - Basic To Advanced Exercises** by The Committee Of Japan Physics Olympiad Japan, published by World Scientific Publishing Company in 2014. ISBN: 9789814556675, 9789814556682. Edition 1. Description: 'This book contains some of the problems and solutions in the past domestic theoretical and experimental competitions in Japan for the International Physics Olympiad...'.
- Basic Physics: A Self-Teaching Guide** by Kuhn, Karl F.; Noschese, Frank, published by John Wiley & Sons, Incorporated in 2020. ISBN: 9781119629900, 9781119629917. Edition 3. Description: 'Learn physics at your own pace without an instructor Basic Physics: A Self-Teaching Guide, 3rd Edition is the most practical and reader-friendly guide to understanding all basic physics concepts and topics...'.

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

**QUEENSLAND MUSEUM** | Learning Resources Home About Save list

## Explore our resources

Search

10 - 12 Physics All types All museums

[Clear filter](#)

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.

Showing 6 of 6 resources

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### **Ask a librarian**

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