

STATE LIBRARY<sup>1</sup>  
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.

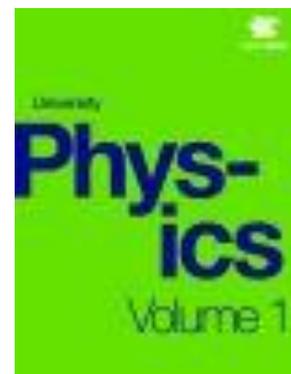
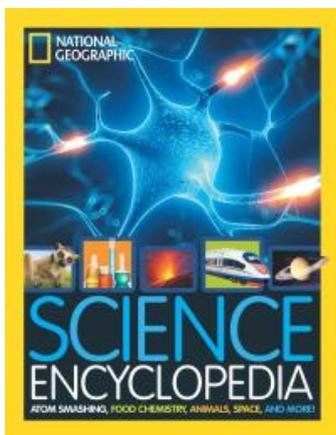
## Before you get started

[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

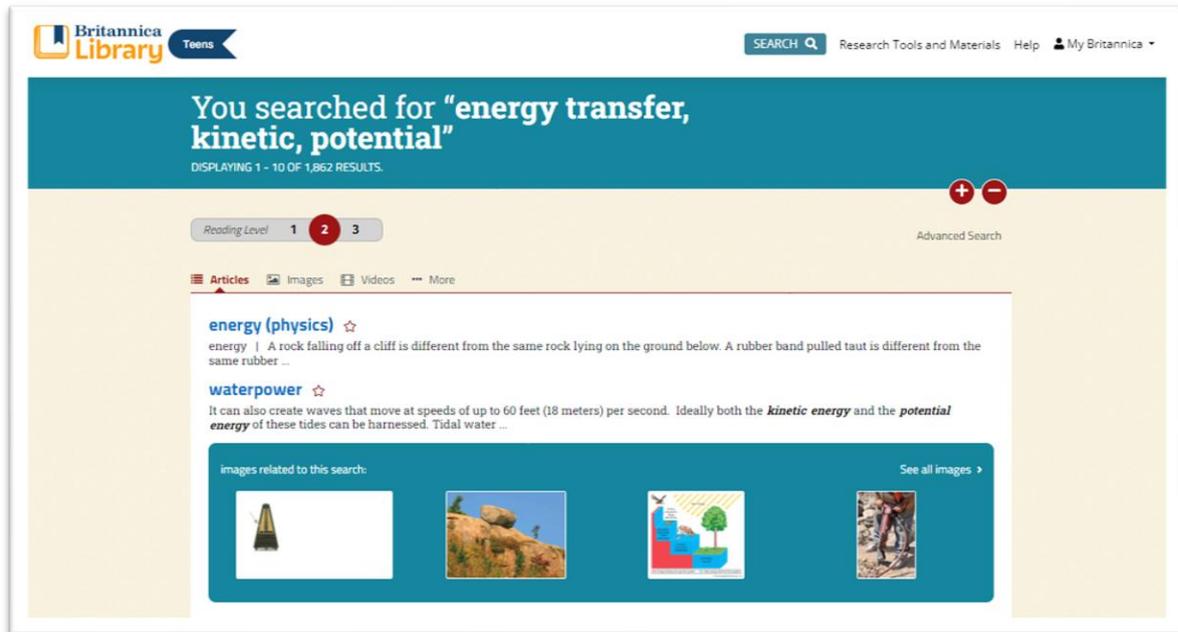
# Kinetic and Potential Energy

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

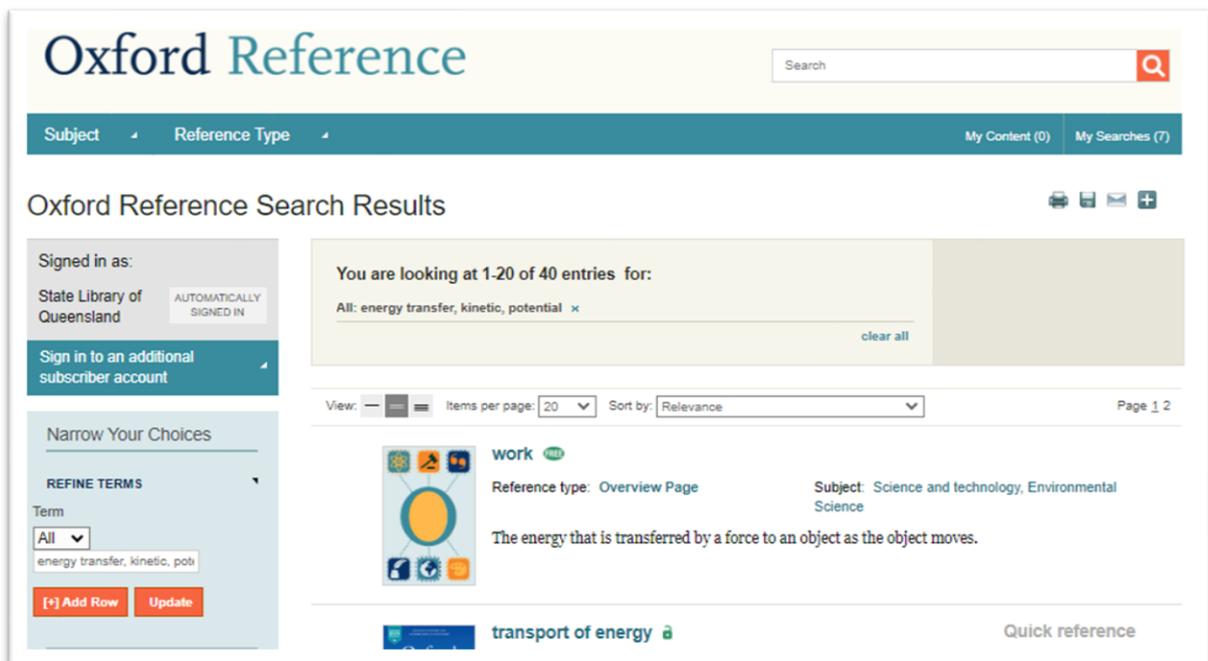
- Investigating relationships between kinetic and potential energy in a simple system such as a roller-coaster or Newton's cradle.
- Classifying types of energy as either kinetic energy such as movement, heat and electricity or potential energy such as chemical, elastic and gravitational.
- Critiquing 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 "LE PRESENTS" and "NATIONAL GEOGRAPHIC". 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" with a grid of document types: Featured Images (12), **Featured Articles (256)**, Books (55), Brief Articles (252), Videos (35), Maps (18), Map Supplements (4), Magazine Covers (3), and Advertisements (1,115). A "FEATURED ARTICLES" section is visible, with "Sort by: Newest" and a "Keywords: Keyword: energy" field. Two featured articles are shown: "The Past is Present" by Kennedy Carter, Philip Cheung, and Christopher Gregory Rivera, published in National Geographic Magazine on Tuesday, Aug. 2023, and "Life Goes On". A "FILTER YOUR RESULTS" section includes buttons for "Subjects", "Publication Title", "Publication", "Document Type", and "Search Within". A "TOPIC FINDER" section encourages users to "Discover topics and results related to your search" with a "Start the Topic Finder" button. A "TERM FREQUENCY" section is also present.

[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 displays "18,025 results" and a "Sort by: Relevance" dropdown. On the left, there is a "Refine Results" sidebar with sections 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)). The main results area shows two entries: "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, and "Transfer of Energy" from The Science Teacher, Vol. 64, No. 1 (JANUARY 1997). Each entry includes a "Download" button and "Save" and "Cite" options.

[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:
 

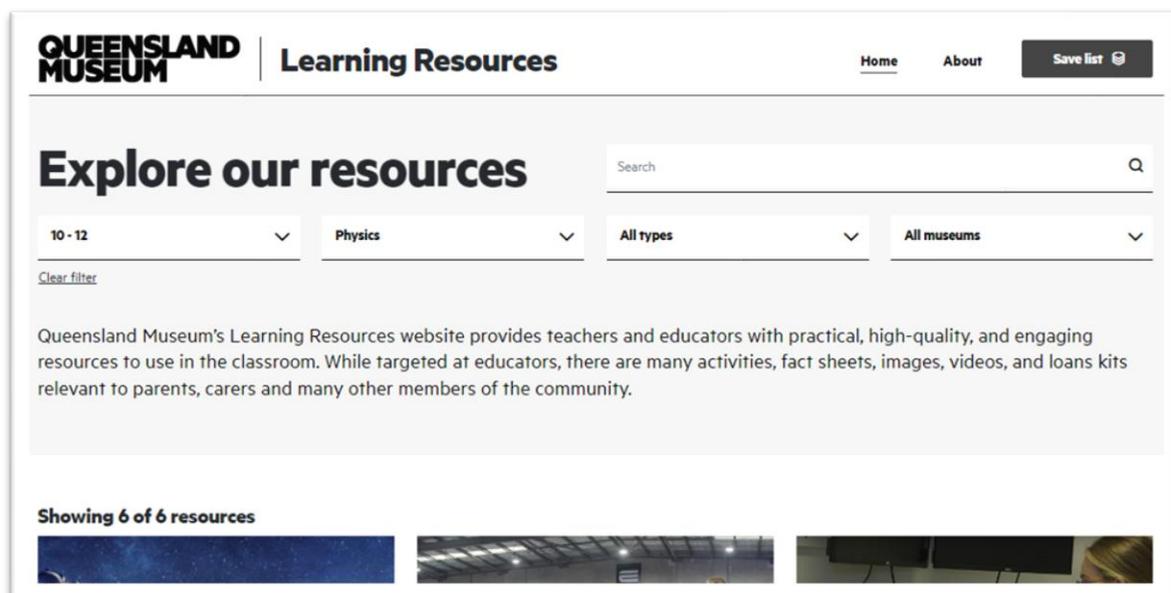
- Ionization Energy**: Explains ionization energy and trends across the periodic table. Standards: Atoms, NGSS-HS-PS1-4, CCSS.ELA-Literacy.RST.9-10.2, CCSS.ELA-Literacy.RST.9-10.5.
- Digestive System**: Describes the digestive system's role in converting food. Standards: NGSS-HS-LS1-2, CCSS.ELA-Literacy.RST.11-12.2, CCSS.ELA-Literacy.RST.11-12.4.
- Geyser**: Explains how geothermal energy creates geysers. Standards: Geology, CCSS.ELA-Literacy.RST.9-10.2, CCSS.ELA-Literacy.RST.9-10.4, CCSS.ELA-Literacy.RST.9-10.7.
- Periodic Table Blocks**: Explains how the periodic table is divided into blocks based on electron shells. Standards: NGSS-HS-PS1-1, CCSS.ELA-Literacy.RST.9-10.2, CCSS.ELA-Literacy.RST.9-10.4.
- Earthquake**: Describes the sudden shaking of Earth's surface. Standards: Geology, NGSS-HS-ESS2-1, CCSS.ELA-Literacy.RST.11-12.5, CCSS.ELA-Literacy.RST.9-10.5.

[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 content area shows '10 results' and a 'Refine your search' section with filters for 'SORT BY' (Relevance), 'RESULTS PER PAGE' (10), 'BOOK STATUS', 'YEAR PUBLISHED' (2023, 2022, 2021), and 'SUBJECT'. The 'SUBJECT' filter is expanded to show 'science / physics / general' selected. On the right, there are 'APPLIED FILTERS' for 'basic science / physics / general'. Below this, there are two book results:
 

- Physics Olympiad - Basic To Advanced Exercises**: By The Committee Of Japan Physics Olympiad Japan, World Scientific Publishing Company, 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. Through the exercises, we aim at introducing the appeal and interest of modern physics to high-school students. In particular, the pro... Status: Available.
- Basic Physics : A Self-Teaching Guide**: By Kuhn, Karl F.; Noschese, Frank, John Wiley & Sons, Incorporated, 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 terms. The expert authors take a flexible and interactive approach...

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



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