



STATE LIBRARY⁷
QUEENSLAND

Year 8

Physical Sciences

Student research guide

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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.

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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.
- Complete the [Student research with State Library](#) module for a guide to navigating State Library's resources. Or visit the [One Search help page](#) for tips & tricks for searching One Search.
- You can search our [OneSearch catalogue](#) or begin exploring by clicking on some of the featured items contained in this research guide.

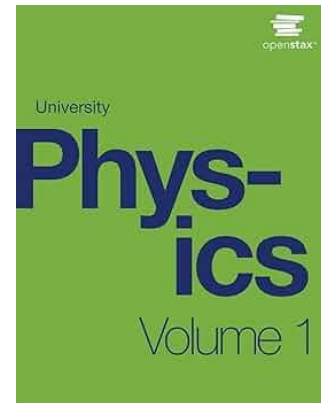
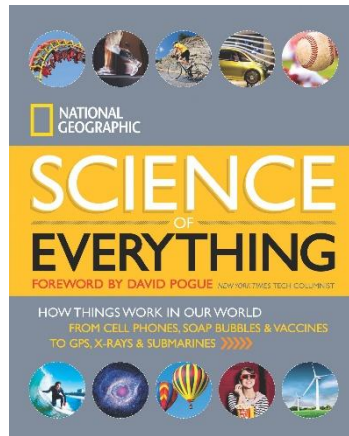
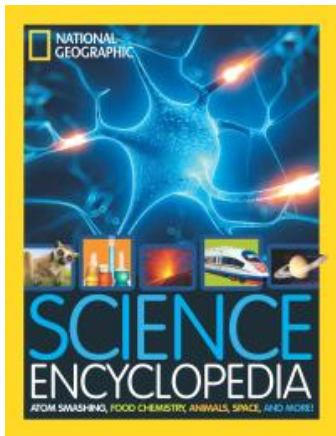
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Feel more confident navigating State Library's resources to find high quality information sources for your assessments.

[Start module](#) 



Featured ebooks



This is an advanced reading resource

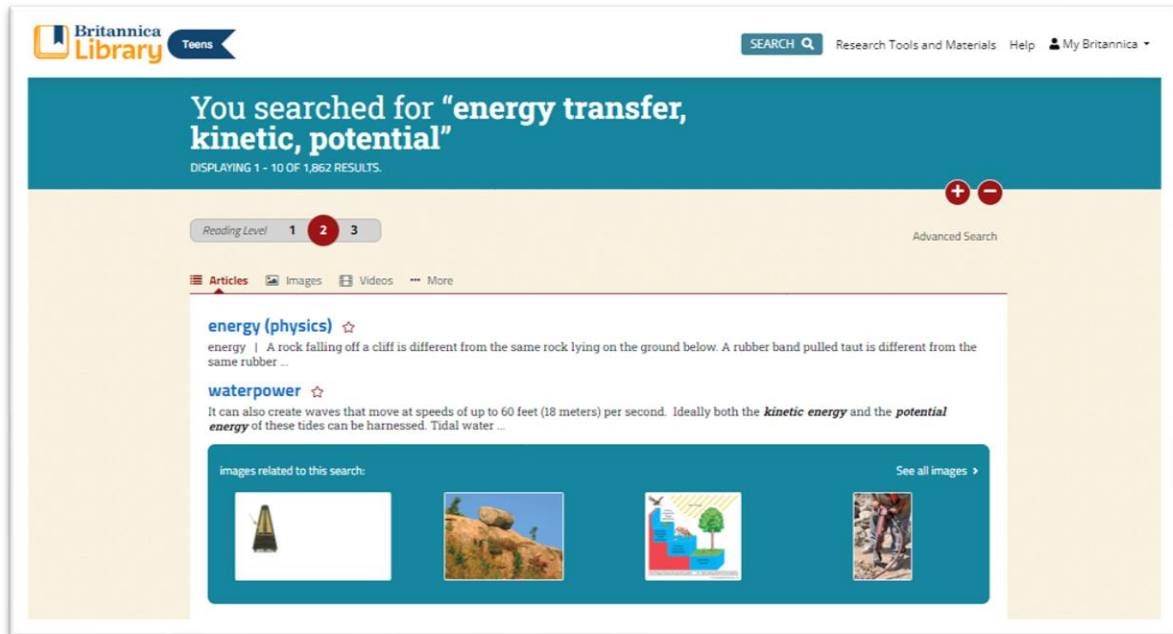
Kinetic and Potential Energy

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

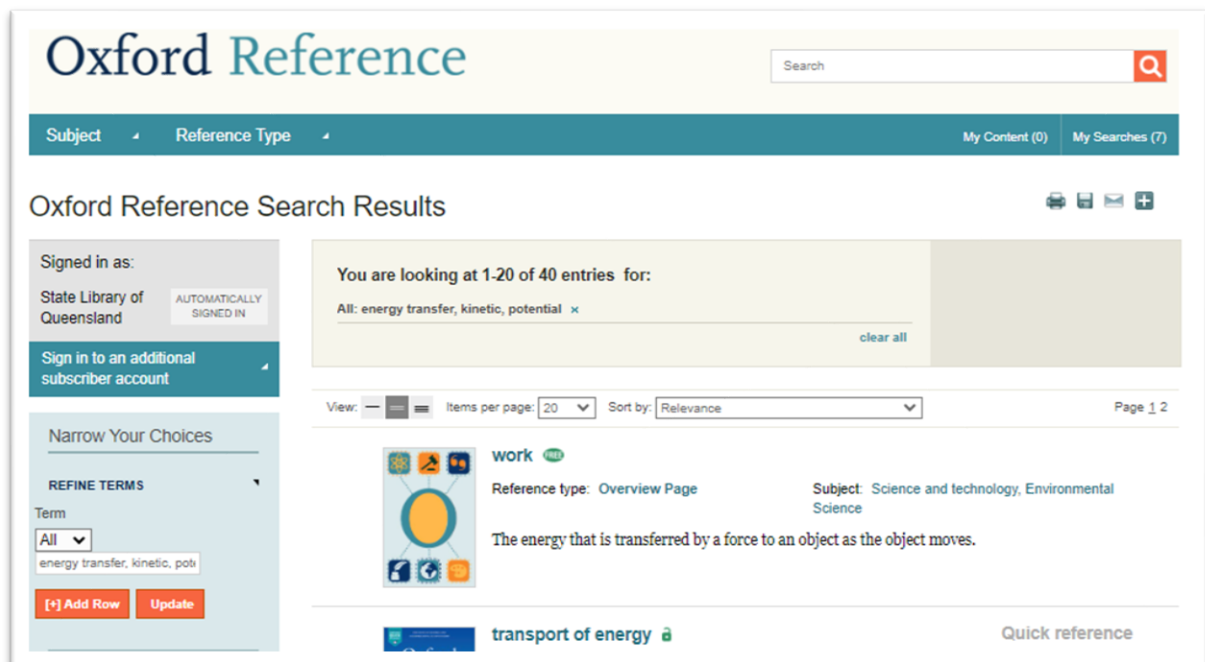
- Investigating relationships between kinetic and potential energy in a simple system such as a roller-coaster or Newton's cradle.
- Classifying types of energy as either kinetic energy such as movement, heat and electricity or potential energy such as chemical, elastic and gravitational.
- Critiquing 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.

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

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

5 SEARCH RESULTS

- Ionization Energy**
This session explains ionization energy, the amount of energy needed to pull an electron out of its orbit around an atom. Explore trends for this characteristic across the periodic table.
[Atoms](#) [NGSS-HS-PS1-4](#) [CCSS.ELA-Literacy.RST.9-10.2](#) [CCSS.ELA-Literacy.RST.9-10.5](#)
- Digestive System**
The digestive system is a group of organs that convert food into absorbable chemicals that are then used to provide energy for growth and repair.
[NGSS-HS-LS1-2](#) [CCSS.ELA-Literacy.RST.11-12.2](#) [CCSS.ELA-Literacy.RST.11-12.4](#) [Digestive System](#)
- Geyser**
There are some places where geothermal energy heats water to create geysers, which periodically fire columns of steam as much as hundreds of feet into the air.
[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**
This session explains how the periodic table is divided into blocks based on how electrons fill the shells, or energy levels, where they reside. The Aufbau principle is discussed.
[NGSS-HS-PS1-1](#) [CCSS.ELA-Literacy.RST.9-10.2](#) [CCSS.ELA-Literacy.RST.9-10.4](#) [Periodic Table](#)
- Earthquake**
An earthquake is a sudden, rapid shaking of Earth's surface that occurs when underground rocks move. This movement releases large amounts of energy and sends shock waves into the ground.
[Geology](#) [NGSS-HS-ESS2-1](#) [CCSS.ELA-Literacy.RST.11-12.5](#) [CCSS.ELA-Literacy.RST.9-10.5](#)

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Physics Olympiad - Basic To Advanced Exercises

The Committee Of Japan Physics Olympiad Japan
World Scientific Publishing Company 2014
ISBN: 9789814556675, 9789814556682
EDITION: 1

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...

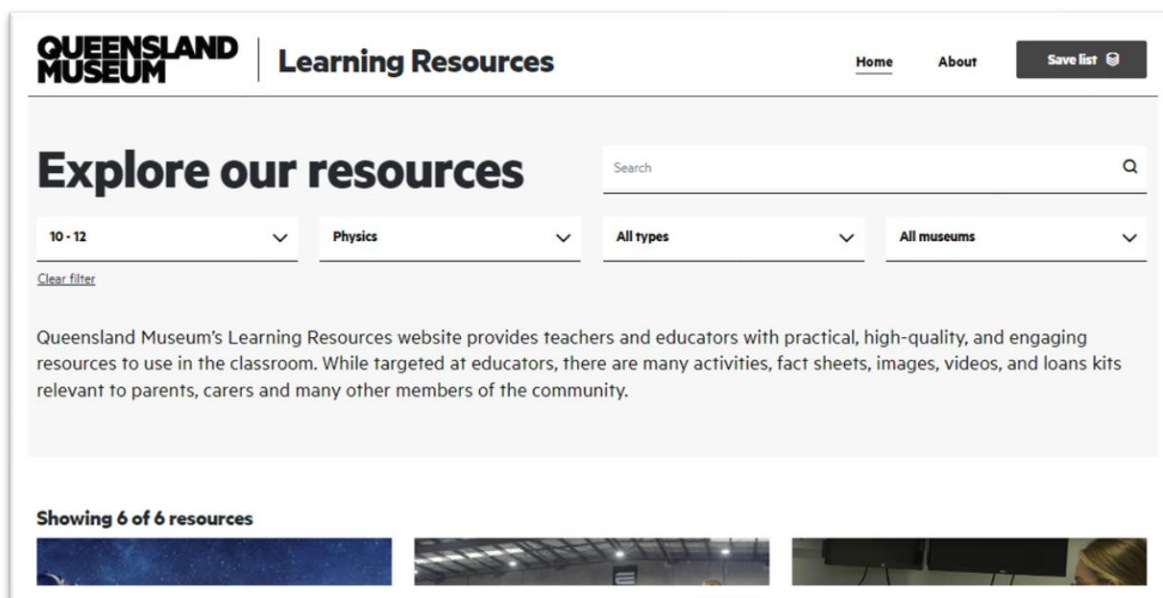
Available

Basic Physics : A Self-Teaching Guide

Kuhn, Karl F.; Noschese, Frank
John Wiley & Sons, Incorporated 2020
ISBN: 9781119629900, 9781119629917
EDITION: 3

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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[State Library staff](#) are available to advise on keywords and search strategies and suggest databases to help you carry out independent research.

Please note that librarians can guide and support your research process, but they cannot complete your assessment, select sources for you or provide answers to assessment questions.