

STATE LIBRARY
OF QUEENSLAND

Year 8 Chemical Sciences

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

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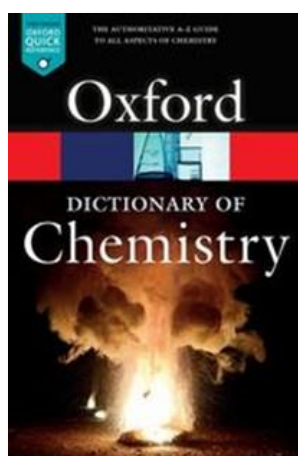
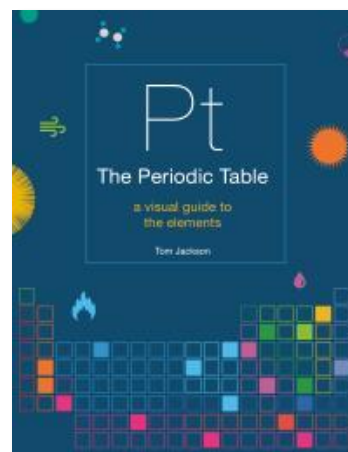
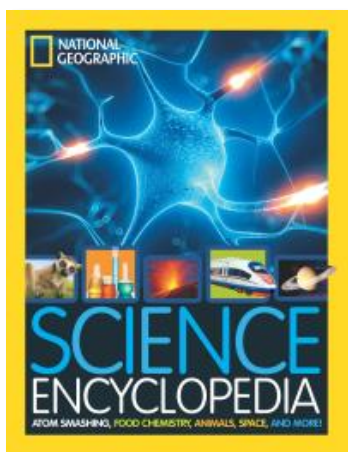
Overview

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

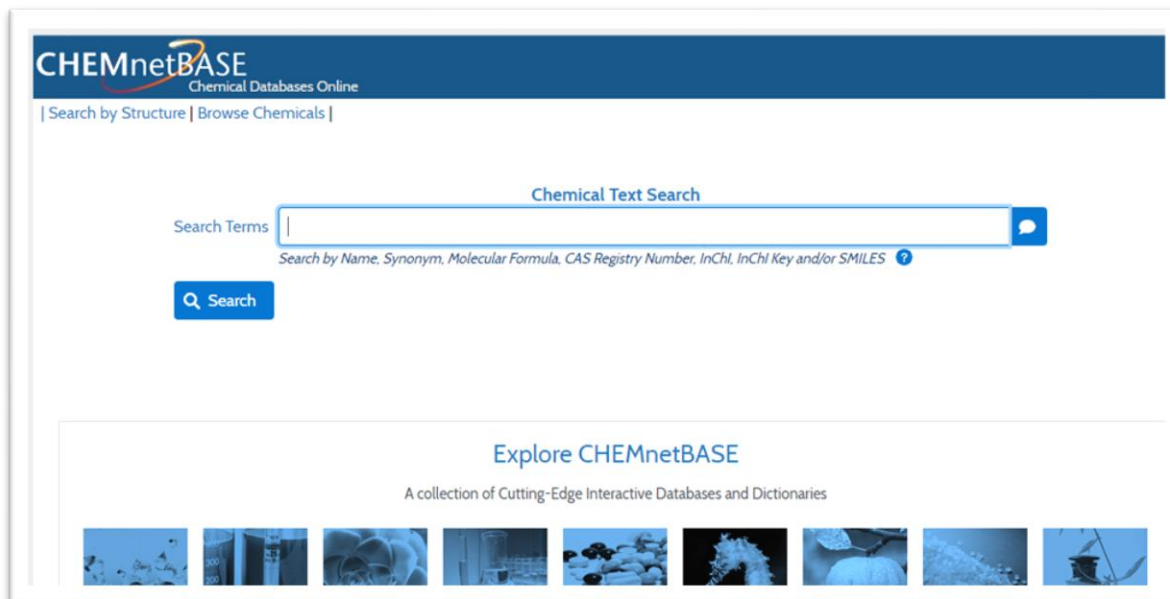
[Become a member](#) of State Library of Queensland (it's free!). Once you have joined State Library, [log in](#) to your account in One Search so you can use the links in this research guide to access the featured collection items. You can search our [OneSearch catalogue](#) or begin exploring by clicking on some of the featured items contained in this research guide.

E-Books



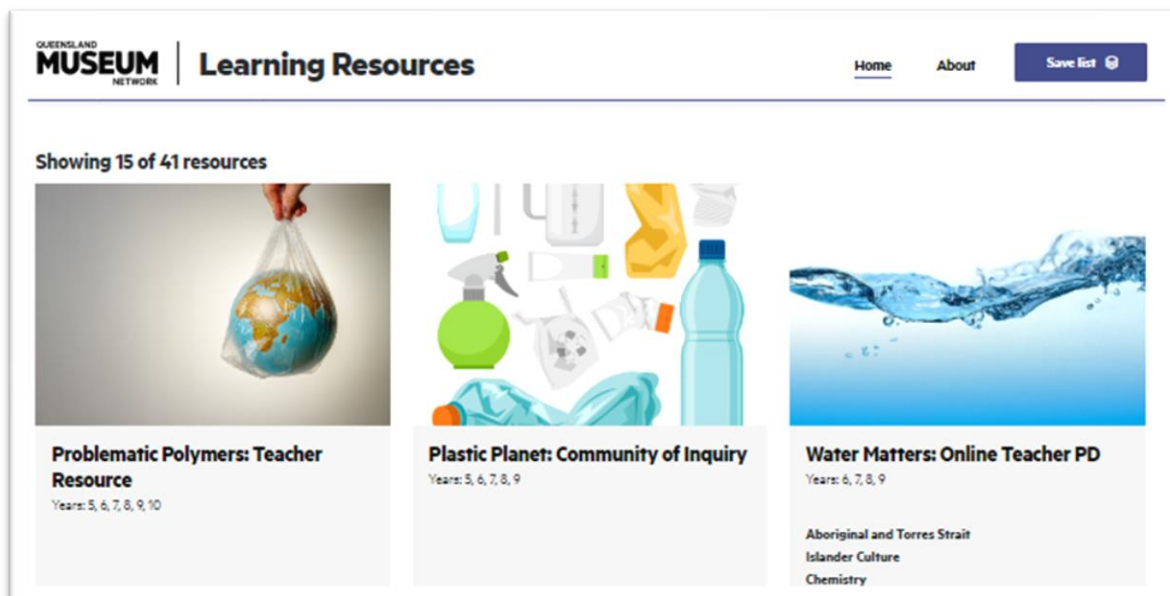
Featured Databases

[CHEMnetBASE](#) provides a comprehensive database of chemicals and their uses, as well as chemical equations and properties.



The screenshot shows the CHEMnetBASE website. At the top, it says "CHEMnetBASE Chemical Databases Online" with navigation links for "Search by Structure" and "Browse Chemicals". Below this is a "Chemical Text Search" section with a search input field labeled "Search Terms" and a "Search" button. A note below the input field states: "Search by Name, Synonym, Molecular Formula, CAS Registry Number, InChI, InChI Key and/or SMILES". Below the search section is an "Explore CHEMnetBASE" section with the subtitle "A collection of Cutting-Edge Interactive Databases and Dictionaries" and a row of nine small thumbnail images representing different chemical resources.

[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 NETWORK" logo, the title "Learning Resources", and navigation links for "Home", "About", and "Save list". Below the header, it says "Showing 15 of 41 resources". Three resource cards are displayed:

- Problematic Polymers: Teacher Resource**
Years: 5, 6, 7, 8, 9, 10
- Plastic Planet: Community of Inquiry**
Years: 5, 6, 7, 8, 9
- Water Matters: Online Teacher PD**
Years: 6, 7, 8, 9
Aboriginal and Torres Strait Islander Culture
Chemistry

Classifying Matter

Classify matter as elements, compounds or mixtures and compare different representations of these, including 2-dimensional and 3-dimensional models, symbols for elements and formulas for molecules and compounds.

- Using virtual and physical models to distinguish between elements and compounds in terms of types of atoms.
- Examining how Dmitri Mendeleev arranged the elements in the first version of the periodic table and comparing his arrangement with the current version.
- Explaining why elements are represented by symbols, compounds and molecules by formulas and mixtures by percentages.
- Using representations to show the classification of matter as elements, compounds and different types of mixtures such as solutions, suspensions and colloids.
- Examining the information conveyed by different types of representations of elements and compounds and identifying where and why these different representations are used.
- Creating a timeline or models to show how the concept of an element has changed over time from Democritus to John Dalton.

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

The screenshot shows the Britannica Library search interface. At the top, a teal banner reads "You searched for 'elements, compounds or mixtures'" and "DISPLAYING 1 - 10 OF 1,476 RESULTS." Below this is a navigation bar with "Reading Level" tabs for 1, 2 (selected), and 3, and an "Advanced Search" link. A menu bar includes "Articles", "Images", "Videos", and "More". The main content area is titled "chemistry" and lists "TOP 3 RESULTS. 16 MORE RESULTS IN CHEMISTRY." The results include:

- Elements, Compounds, and Mixtures**: A sample of a pure element contains atoms that are chemically the same, but different from those of all other *elements* ...
- Chromatography**: Chromatography consists of a collection of methods that can be used to separate the substances dissolved in a liquid or gas *mixture* ...
- Evaporation**: Evaporation is used to separate a soluble solid from a liquid *mixture*. In the lab, an open container of the *mixture* is heated. As the temperature ...

A link for "sulfur (chemical element)" is also visible.

[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 interface. The search bar contains "elements, compounds or mixtures" and shows "10,785 results". The left sidebar has "Refine Results" with "ACCESS TYPE" options: "Everything" (unselected) and "Content I can access" (selected). Below is a "SEARCH WITHIN RESULTS" box. The "CONTENT TYPE" section is set to "Academic content:". The main results area shows a "JOURNAL ARTICLE" titled "CONNECTING THE VISIBLE WORLD WITH THE INVISIBLE: Particulate diagrams deepen student understanding of chemistry" by Thomas Pentecost, Sarah Weber, and Deborah Herrington. The article is from *The Science Teacher*, Vol. 83, No. 5, Systems and Models (Summer 2016), pp. 53-58. A snippet of the article text is visible: "...point depression data collected in lab. properties) Post-assessment After completing a lab activity where students had to classify both macroscopic (elements , compounds , and and particulate representations of matter (Classifying Chemical Substances Oh mixtures..."

[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. At the top, there's a navigation bar with 'Gale Interactive' and 'Science'. Below it, a large interactive 3D model of a laptop is displayed. The laptop's keyboard is replaced by a grid of blue spheres, and the screen shows a colorful molecular model. A mouse cursor is hovering over the laptop, with a 'Hover for mouse hints' label. Below the laptop, there are several buttons: 'Start Over', 'Start Activity', and 'Use these buttons to make the view bigger'. To the right of the laptop, there's a search bar and buttons for 'Advanced Search', 'Cite', and 'Send To...'. Below the laptop, there's a section titled 'States of Matter: Introduction' with a description: 'This session explores the properties of solids, liquids, and gases.' It also lists standards: 'Molecules and Compounds NGSS-HS-PS1-4 CCSS.ELA-Literacy.RST.9-10.3 CCSS.ELA-Literacy.RST.9-10.9'. There are social media share buttons and 'Link to Activity' and 'Link to Slide' options. On the right side, there's a text panel titled 'Matter' with a definition: 'In chemistry, matter is defined as anything that has mass and occupies space. In ancient Greece, some philosophers, most notably Heraclitus (c. 535--c. 475 BC), believed that everything in the world was in a state of fluctuation. Others argued that there must be some permanence. Otherwise it would not be possible to see anything as being real. The fifth century Greeks were apparently the first thinkers to attribute structure to'.

[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 interface. At the top, there's a search bar with the text 'elements, compounds or mixtures' and a magnifying glass icon. Below the search bar, there's a section titled 'FEATURED ARTICLES (28)'. There are three featured articles listed:

- The Secrets of Chinese Medicine**
Authors: Peter Guin and Fritz Hoffmann
Publication: National Geographic Magazine
Jan. 2016 Volume 235, Issue 01 p. 66-100 Article
Found in National Geographic Archive 1995+
- Desperate for a Cure**
Author: Maridh Kohut
Publication: National Geographic Magazine
July 2017 Volume 232, Issue 1 p. [75] Article
Found in National Geographic Archive 1995+
- Barcelona, Star of the New Europe**
Authors: T. D. Allman and David Alan Harvey
Publication: National Geographic Magazine
Dec. 1995 Volume 194, Issue 6 p. [43] Article
Found in National Geographic Archive 1995+

Energy Change in Reactions

Compare physical and chemical changes and identify indicators of energy change in chemical reactions.

- Performing simple chemical reactions to identify the indicators of chemical change such as gas production, solid production, colour change and temperature change.
- Analysing and interpreting data on the properties of substances before and after the substances interact to determine if a chemical or physical change has occurred.
- Investigating and identifying energy changes in different chemical reactions such as differences in temperature.
- Examining how the physical and chemical properties of a substance will affect its production or use.
- Discussing where indicators of chemical change are used for identifying the presence of particular substances, such as in soil, water and medical testing kits.

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

The screenshot shows a search results page from the Britannica Library. At the top, a blue banner reads "You searched for 'physical and chemical changes in chemical reactions'" and "DISPLAYING 1 - 10 OF 337 RESULTS." Below this is a navigation bar with "Reading Level" tabs for 1, 2, and 3, where level 2 is selected. There are also icons for "+", "-", and "Advanced Search". A menu bar includes "Articles", "Images", "Videos", and "More". The main content area features a result titled "Physical Versus Chemical Changes" from the article "chemical reaction". A snippet of text follows: "chemical reaction | A chemical reaction is a process in which one or more substances are converted to one or more different substances. In the reaction, the ...". Below this is a section for "chemistry" with a sub-section for "Chemical Change". The text states: "The process by which substances are **changed** into other substances is called a **chemical reaction**. In addition to **chemical change**, matter can also undergo two other ...".

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

The screenshot shows a search results page from JSTOR. The search bar contains the query "physical and chemical changes in chemical reactions". The page displays "57,259 results". On the left, there is a "Refine Results" sidebar with "ACCESS TYPE" options: "Everything" (unselected) and "Content I can access" (selected). Below this is a "SEARCH WITHIN RESULTS" field. The "CONTENT TYPE" section is set to "Academic content:". The main results area shows a "Sort by: Relevance" dropdown and a "JOURNAL ARTICLE" checkbox. The article title is "Teaching Through TRADE BOOKS: Understanding Chemical and Physical Changes" by Christine Anne Royce, published in "Science and Children, Vol. 57, No. 5, TAKE-HOME SCIENCE (JANUARY 2020), pp. 18-28". A snippet of the article's text is visible: "...Understanding **Chemical and Physical Changes** By Christine Anne Royce While students may be able to describe **changes** they SYNOPSISsee everyday, such as getting taller or seeing chang-es in the weather, they may have trouble identify- Information about heat and how energy can be used to cook ing the difference between a **physical change**...

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

INTERACTIVE Science Search Activities Browse Activities

Search... Advanced Search

Conservation of m

Some of the most important sci laws known to humankind are c conservation laws; that is, laws demonstrating that certain phys properties remain constant, nev changing. Mass is one of these

[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.

NATIONAL GEOGRAPHIC

elements, compounds or mixtures Advanced Search

FEATURED ARTICLES (16)

Living Longer—and Better
Authors: Fran Smith, Jasper Doest, David Gutenfelder, Nichole Sobocki, and Melanie Wenger
Publication: National Geographic Magazine
Sunday, Jan. 2023 Volume 243, Issue 01 p. 34 Article
Found in National Geographic Archive 1995+

Too Hot to Live
Publication: National Geographic Magazine
Thursday, July 2021 Volume 240, Issue 01 p. 40 Article
Found in National Geographic Archive 1995+

The Addicted Brain
Authors: Fran Smith and Max Aguilera-Melweg
Publication: National Geographic Magazine
Sept. 2017 Volume 232, Issue 3 Article
Found in National Geographic Archive 1995+

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