

CURRICULUM RESOURCE ACIDS & BASES



EDUCATION LEAD: BEN NEWSOME CF
UTS CHANCELLOR'S AWARD FOR EXCELLENCE
& CHURCHILL FELLOW

OVERVIEW

This resource provides a comprehensive, multi-modal framework for teaching Chemical Sciences (Acids & Bases). Designed to support primary practitioners in navigating abstract chemical concepts, the unit bridges the gap between theoretical molecular change and hands-on inquiry, focusing on pH scales, indicators, and reversible/irreversible reactions.



PEDAGOGICAL FRAMEWORK: VARIABLE-LED INQUIRY

While the content is highly engaging, the underlying pedagogy is rooted in the Scientific Method.

- **Variable Isolation**

Designed to teach students how to identify, change, and measure variables.

- **Indicators & Analysis**

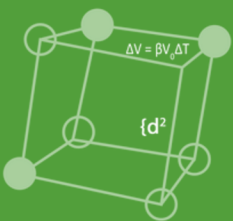
Students utilise natural plant pigments (Anthocyanins/Curcumin) to quantify acidity and alkalinity, transforming qualitative observations into quantitative data.

- **Secondary Readiness**

The curriculum focus shifts from observing gases to analysing chemical reactions and the production of new substances (CO₂ capture), preparing students for the transition to secondary laboratory chemistry.

REGULATORY COMPLIANCE & DOCUMENTATION

- Comprehensive alignment with Australian Curriculum v9.0, NSW 2024 Syllabus, Victorian F-10 v2.0, IB PYP & MYP, Cambridge International, US NGSS, The Ontario Curriculum & The New Zealand Curriculum
- Assessment Tools with formative knowledge quizzes and summative marking rubrics for student projects.



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CORE INVESTIGATIONS

- **Corrosive Variables**

Controlled longitudinal study of liquid interaction with metals.

- **Natural pH Synthesis**

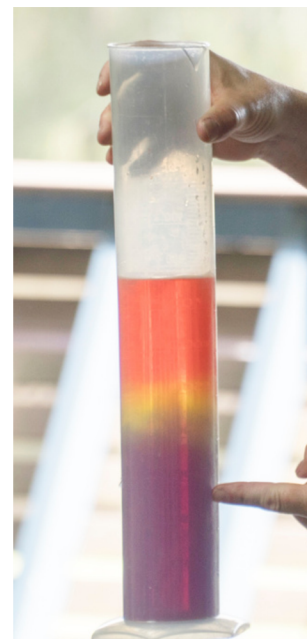
Extraction of plant-based indicators to map the pH scale of household items.

- **Chemical Synthesis**

Capturing and measuring gas production from acid/base reactions.

- **Enzymatic & Thermal Reactions**

Investigating invisible ink and pigment changes in natural dyes.



IMPLEMENTATION & DATA PRIVACY

- **Resource Neutral**

Evidence-based experiments are designed around safe, accessible, everyday materials to minimise departmental overhead & reduce risk.

- **Privacy Compliance**

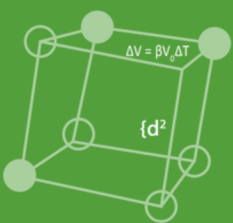
100% student data security. The platform requires zero student accounts, ensuring no PII (Personally Identifiable Information) is collected or stored.

RESOURCE ACCESS SUMMARY

- **Instructional Access**

On-demand expert video guest-teaching (30-day or 12-month access).

- **Permanent Library** with all technical documentation, safety frameworks, and student worksheets retained by the school as permanent teaching assets on download



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ABOUT FIZZICS EDUCATION

Founded in 2004, Fizzics Education is a global leader in the design and delivery of high-impact science education. Our mission is to provide educators with the tools and expertise required to foster deep inquiry and scientific literacy in the primary classroom.

PROVEN GLOBAL IMPACT

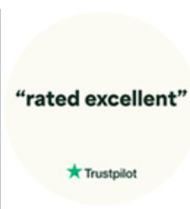
- **4 Million+ Students**

Our programs have been delivered to students across Australia, the USA, and over 40 countries via live video conferencing and in-person workshops.

- **Corporate & Government Partnerships**

We provide STEM outreach for leading organisations, including the NRMA, Optus, the GWS Giants and many more

- **Award-Winning Pedagogy**



EXPERT LEADERSHIP: BEN NEWSOME CF

Ben Newsome CF is a qualified science teacher, 2013 Churchill Fellow, and founder of Fizzics Education. Having reached over 4 million students, his work has earned the UTS Chancellor's Award for Excellence and a spot as an ASETNSW Ambassador. Author of 'Be Amazing!' and host of the FizzicsEd Podcast,



Ben serves on international boards such as Educating for Leadership (Alaska) and as a board advisor to the Center for Interactive Learning & Collaboration to advance global STEM learning.