

# CURRICULUM RESOURCE ELECTRICITY & MAGNETISM



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

## OVERVIEW

This resource provides a streamlined framework for teaching Physical Sciences (Electricity & Magnetism). Designed to simplify abstract concepts, the unit bridges the gap between theory and reality, focusing on series and parallel circuits, static charge, and electromagnetism for Grades 3–6.



## 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.

- **Series vs Parallel circuits**

Students learn the fundamentals in how electricity flows in a circuit

- **Circuit components**

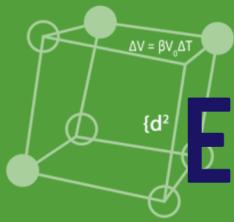
Switches, LEDs, resistors and more are introduced to students

- **Energy Transformation**

By constructing functional models, students visualise how electrical energy is converted into kinetic motion and magnetic force.

## 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

- **Electrostatics & Charge**

Students manipulate electron transfer between surfaces to investigate how stationary charges exert force

- **Electrochemical Energy**

Students construct batteries from common materials to explore the chemical origins of electrical current and voltage variables.

- **Circuit building**

Learning about series and parallel circuits, path of least resistance and how electromagnetism works.



## IMPLEMENTATION & DATA PRIVACY



- **Resource Neutral**

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

- **Privacy Compliance**

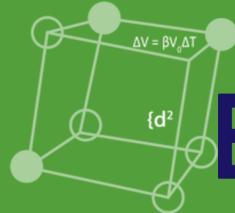
100% student data security. The platform requires zero student accounts, ensuring no PII (Personally Identifiable Information) is collected or stored.

## 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**



"rated excellent"

★ Trustpilot

## 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.