

CURRICULUM RESOURCE EARTH SUN MOON

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



OVERVIEW

This resource provides a structured, multi-modal framework for teaching Earth and Space Sciences. Designed to demystify complex orbital mechanics for Grades 3–6, the unit bridges the gap between abstract cosmic concepts and hands-on inquiry, focusing on the interactions between the Earth, Sun, and Moon, celestial cycles, and planetary geology.



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.

- **Tactile Orbital Mechanics**

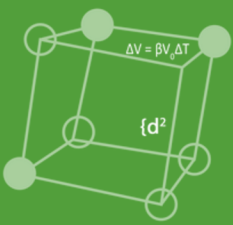
Utilising physical modelling (including the season "myth-buster" and lunar cycle simulations) to transform 2D diagrams into 3D spatial understanding.

- **Conceptual Mastery**

Debunking common student misconceptions regarding axial tilt, gravity, and tidal forces to prepare students for secondary-level physics.

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

- **Lunar Phase Mapping**

Chronological modelling of the lunar cycle to master celestial positioning.

- **Earth - Sun - Moon interactions**

Visualising the mechanics of eclipses and the gravitational influence on oceanic tides.

- **The Seasons**

Hands-on modelling of axial tilt and the "wobble" to analyse thermal distribution (seasons).



IMPLEMENTATION & DATA PRIVACY

- **Resource Neutral**

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

- **Privacy Compliance**

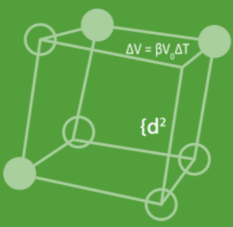
100% student data security. The platform requires zero student accounts, ensuring no PII (Personally Identifiable Information) is collected or stored.

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

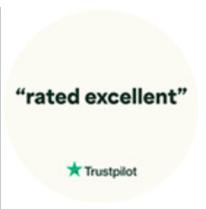
- **4 Million+ Students**

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.