



Connecting Indigenous Knowledges to the classroom

Curriculum links

Indigenous STEM Education Resources Fire-starting

NSW Curriculum links

Stage 4

Change

SC4-CHG-01

Describes the role, structure and function of a range of living systems and their components.

Energy transfers

Identify conduction, convection and radiation as different ways that energy can be transferred, and distinguish between these forms.

Describe, using the terms 'potential energy' (PE) or 'kinetic energy' (KE), how systems can store different forms of energy, including thermal, elastic, chemical and gravitational energy.

Identify examples of how energy can change from one form into another.

Use practical investigations and representations to illustrate energy transformations in a system.

Define open and closed systems to describe how energy is transferred into and out of systems, and how it cycles within a system.

Apply the Law of Conservation of Energy to familiar examples.

Use representations to illustrate energy transformations.

SC4-OTU-01

Explains how observations are used by scientists to increase knowledge and understanding of the Universe.

Working scientifically

Observing

SC4-WS-01

Uses scientific tools and instruments for observations.

Questioning and predicting

SC4-WS-02

Identifies questions and makes predictions to guide scientific investigations.

Conducting investigations

SC4-WS-04

Follows a planned procedure to undertake safe and valid investigations.

Processing data and information

SC4-WS-05

Uses a variety of ways to process and represent data.

Analysing data and information

SC4-WS-06

Uses data to identify trends, patterns and relationships, and draw conclusions.

Communicating

SC4-WS-08

Communicates scientific concepts and ideas using a range of communication forms.

Can be adapted for:

Stage 5

Energy

SC5-EGY-01

Evaluates current and alternative energy use based on ethical and sustainability considerations.

Law of conservation of energy

Use the Law of Conservation of Energy, and calculations, to explain that total energy is maintained in energy transfers and transformations in a closed system.

Explain efficiency in relation to energy transfers.

Explain how to improve energy efficiency in energy transfers and transformations.

Materials

SC5-MAT-01

Assesses the uses of materials based on their physical and chemical properties.

Resources

Explain how Aboriginal and Torres Strait Islander Peoples used minerals and resources for a wide range of purposes.

Australian Curriculum links

Year 8

Physical sciences

AC9S8U05

Classify different types of energy as kinetic or potential and investigate energy transfers and transformations in simple systems.

Science and a human endeavour

Nature and development of science

AC9S7H02

Investigate how cultural perspectives and world views influence the development of scientific knowledge.

Science inquiry

Questioning and predicting

AC9S7I01

Develop investigable questions, reasoned predictions and hypotheses to explore scientific models, identify patterns and test relationships.

Planning and conducting

AC9S7I02

Plan and conduct reproducible investigations to answer questions and test hypotheses, including identifying variables and assumptions and, as appropriate, recognising and managing risks, considering ethical issues and recognising key considerations regarding heritage sites and artefacts on Country/Place.

Processing, modelling and analysing

AC9S7I04

Select and construct appropriate representations, including tables, graphs, models and mathematical relationships, to organise and process data and information.

AC9S7I05

Analyse data and information to describe patterns, trends and relationships and identify anomalies.

Evaluating

AC9S7I06

Analyse methods, conclusions and claims for assumptions, possible sources of error, conflicting evidence and unanswered questions.

AC9S7I07

Construct evidence-based arguments to support conclusions or evaluate claims and consider any ethical issues and cultural protocols associated with using or citing secondary data or information.

Communicating

AC9S7I08

Write and create texts to communicate ideas, findings and arguments for specific purposes and audiences, including selection of appropriate language and text features, using digital tools as appropriate.

Can be adapted for:

Year 9

Physical sciences

AC9S9U05

Apply the Law of Conservation of Energy to analyse system efficiency in terms of energy inputs, outputs, transfers and transformations.