Big idea: Energy Perimeter Institute

These workshops introduce ways of visualising energy and show how they can be used to support a deeper understanding of energy concepts in Physics.

This workshop is targeted at teachers of Stage 6 Physics but would also be suitable for physics students with teacher support. Energy flow diagrams and work-energy bar charts are flexible and powerful tools for analysing energy in systems and can be applied across all the Year 12 modules in Physics. Relevant topics include the photoelectric effect, nuclear transmutations and satellites in gravitational fields.

These video workshops refer to classroom resources including videos, editable worksheets and teacher background information available from the Perimeter Institute.   
Further information regarding these resources is provided below.

<Insert Video 1 – Visualising energy>

<Insert Video 2 – Nuclear transmutations: Fusion>

The Perimeter Institute for Theoretical Physics is a world-class physics institute located in Ontario, Canada. In addition to excellence in research, Perimeter values outreach and helping teachers, help students to learn better.

These videos refer to the following resources. All resources are free and available for download from the [Perimeter Institute Resource Centre](https://resources.perimeterinstitute.ca/).

* [A deeper understanding of energy](https://resources.perimeterinstitute.ca/products/a-deeper-understanding-of-energy)  
  In this inquiry-based resource, students explore energy transformations through hands-on activities. Students model energy transformations using energy flow diagrams and work-energy bar charts. Includes nuclear transformations, mass-energy equivalence and nucleosynthesis.
* [Tools for teaching science](https://resources.perimeterinstitute.ca/collections/lesson-compilations/products/tools-for-teaching-science)  
  This is a reference resource for science teachers working with students in years 7-12. It includes a wide range of teaching tools that promote student engagement and understanding. Each tool is presented along with an analysis of its strengths, limitations and examples of how/why it could be used in the classroom.
* [Fields](https://resources.perimeterinstitute.ca/collections/lesson-compilations/products/fields)  
  This teacher resource includes activities that guide student exploration of the nature of electric, magnetic and gravitational fields. Students develop a deep understanding of fields, the models used to represent them and how fields store and transfer both energy and momentum.

If you wish to stay updated on new resources, teacher training or other upcoming events from the Perimeter Institute, [register now by creating a free account.](https://resources.perimeterinstitute.ca/account/register)

These workshops are intended for use by NSW teachers in NSW schools. While they may be used and modified for this purpose, they remain the copyright of Perimeter Institute.