

Classroom Activity

10 Big Question: Where will nanoscience revolution take us?*

How does the energy density of a rechargeable battery compare with that of petrol (13,000 Wh/kg)?

You will need:

- 1x rechargeable AA or AAA battery
- 1x kitchen scale

Method:

On the battery's label, find its voltage [a number followed by units of volts (V)] and current capacity [a number followed by units of milliamp-hours (mAh)].

Calculate the battery's energy capacity in milliwatt-hours (mWh) by multiplying the voltage by the current capacity.

Weigh the battery and divide its energy capacity by its weight in grams to get its energy density in watt-hours per kilogram (Wh/kg).

This classroom activity was suggested by Dr David Huang, a Lecturer in Chemistry and Coordinator of the Bachelor of Science (Nanoscience & Materials) degree at the University of Adelaide.

* To find out more about the 10 Big Questions, go to:
<http://www.sciences.adelaide.edu.au/learning-teaching/10bg/>

Further Information

Ph: (08) 8313 5673
Fax: (08) 8313 4386
Email: faculty.sciences@adelaide.edu.au
Web: www.sciences.adelaide.edu.au