

**Key Learning Area: Studies of Society and Environment**  
**Unit Title: Essential Energy**  
**Year Level: 7 or 8**  
**Duration: 5-6 weeks**

**This unit utilises ideas of Mr Will Inveen, Education Officer, Mugga Mugga , Australian Capital Territory, who developed the original “Essential Energy’ unit with the support of Centenary of Federation Community Projects Program.**

**Whilst it focuses on energy use, it utilises a process that could be adapted to other topics, such as, heating, food, toys, washing clothing, games, sport, transport, shelter, etc..**

Strand/s	Broad Outcomes	Outcome Levels	Across Curriculum Perspectives
<p>Time Continuity and Change</p> <p>Resources</p>	<ul style="list-style-type: none"> <li>☺ Describes different periods of time in the local area.</li> <li>☺ Describes significant events and ways of life in some periods of Australia's past.</li> <li>☺ Constructs a sequence of some major events and periods</li> <li>☺ Describes factors that affect resource use and development</li> </ul>	<p>3.1a</p> <p>4.1a</p> <p>4.2</p> <p>4.10</p>	<ul style="list-style-type: none"> <li>• Aboriginal and Torres Strait Islander Education✓</li> <li>• Australian Education✓</li> <li>• Environment Education✓</li> <li>• Information Access</li> <li>• Language for understanding across the curriculum</li> <li>• Multicultural Education✓</li> <li>• Special Needs✓</li> <li>• Work Education</li> </ul>
<p><b>Content</b></p> <ul style="list-style-type: none"> <li>☺ What are the sources of energy used in Australia today?</li> <li>☺ What sources of energy were used at the time of Federation?</li> </ul> <p>CASE STUDY: Essential energy at Mugga Mugga.</p> <ul style="list-style-type: none"> <li>☺ Where is Mugga Mugga?</li> <li>☺ Which aboriginal nation occupied the area in which Mugga Mugga exists?</li> <li>☺ How long had the Ngunnawal people been living in this area?</li> <li>☺ What is the history of European settlement in the Canberra area?</li> <li>☺ When was Mugga Mugga settled by its original owners?</li> <li>☺ What was the effect of Federation on the Canberra region?</li> <li>☺ What light sources were used at Mugga Mugga in the 19<sup>th</sup> and 20<sup>th</sup> Centuries? How would changing light sources affect daily lives?</li> <li>☺ What were the means of cooling foods in the 19<sup>th</sup> and 20<sup>th</sup> Centuries? How would the ability to cool food would affect daily life?</li> </ul>	<p><b>Teaching Resources</b></p> <p>Mugga Mugga Historic site, Narrabundah Lane, Canberra, ACT</p> <p>ACT Museums Unit</p> <p><u>First Light on the Limestone Plains Historic Photographs of Canberra and Queanbeyan</u>, E. Lea-Scarlett &amp; Tim Robinson, Hale &amp; Ironmonger, Sydney, 1986</p> <p><u>A Long Journey Duntroon, Mugga Mugga &amp; Three Careers</u>, Sylvia Curley, ACT Government, 1998</p> <p><u>Sites of Significance in the ACT, Vol Five, Majura, Kowen and Associated Areas</u>, National Capital Planning Authority, Canberra, 1990</p> <p>Microsoft Encarta</p> <p>Coolgardie safe explained in various web sites through search engine: <a href="http://www.google.com">www.google.com</a></p> <p>Lux metre</p> <p>Different light sources: slush lamp, oil lamp, kerosene lamp, a range of electric light sources (filament, fluorescent, compact fluorescent)</p> <p>Local museums</p>	<p><b>Teaching/Learning Strategies</b></p> <p>Brainstorm energy sources used to produce light, heating and cooling in Australia in 2001.</p> <p>Library research on the location, brief history of the Ngunnawal people in the Canberra region and the energy sources they used.</p> <p>Utilise library resources to investigate the history of sources of light: open fire, candle, oil lamp, kerosene lamp, gas lamp, filament light, fluorescent light.</p> <p>Use Internet sites or written references to investigate the history of Mugga Mugga, ACT.</p> <p>Collaboratively construct a giant rope timeline of light sources used on Mugga Mugga from the beginning of European settlement (Use details in notes attached from Will Inveen's notes)</p> <p>Use a lux metre to establish the effectiveness of different light sources.</p> <p>Discuss the effect of changing light sources on daily life.</p> <p>Use Internet site: to discover the principles of the a Coolgardie safe and write details as book notes or draw an annotated diagram.</p> <p>Build a Coolgardie safe/ students write an explanation of how it kept food cool.</p> <p>Make a class display of sources of light used at Mugga Mugga from the mid-1800's-1950's.</p> <p>Visit Mugga Mugga Education Centre to participate</p>	<p><b>Assessment</b></p> <ul style="list-style-type: none"> <li>☺ Create a poster to illustrate the energy sources used in Australia today.</li> <li>☺ Survey student families to establish light source throughout their parents' lives. Use class results to construct a wall chart.</li> <li>☺ Research and present the energy sources used through your parents' lives and send findings by email to the teacher.</li> <li>☺ Design a wall timeline to illustrate sources of light energy in the Mugga Mugga area.</li> <li>☺ Make a model of the Coolgardie safe and explain its operation to the class.</li> <li>☺ Research the development of the National Capital and present findings as Powerpoint presentation to the class showing how it developed around Mugga Mugga.</li> <li>☺ Write a newspaper article for the local newspaper on how the changes in light energy changed the lives of Australians over the past 100 years. Or, a similar article could be written on the means of cooling food.</li> </ul>

	<p>Notes from “Essential Energy” by Will Inveen, Education Centre, Mugga Mugga, ACT.</p>	<p>in the ‘hands on’ Essential Energy activity.</p> <p>Follow sequence of activities outlined in Will Inveen’s attached notes from “Essential Energy”</p>	
<p><b>Links with other KLA’s</b>  Science  Mathematics  Arts  Technology  English</p>	<p><b>Literacy Demands</b>  Reading  Speaking  Listening  Writing genres.</p>	<p><b>Numeracy Demands</b>  Estimating  Measurement</p>	<p><b>Evaluation Strategies</b>  Student participation in activities  Level of student engagement in activities as seen in quality of work.  Student evaluations  Teacher observations</p>