

Te Paepae o Aotea Science Badge

ENERGY			
<i>Complete 20 stars</i>			
Rating	No	Exercises in Energy	Sign
*	1	Find and mount pictures of 6 different energy converter devices. State what kind of energy each type of device produces	
**	2	Write a short account, in your own words, of someone famous for his / her work in ENERGY	
*	3	Design a bumper sticker on Energy	
***	4	Build a working candle operated steam turbine from simple materials	
*	5	Make a collection of newspaper and / or magazine articles on the oil industry	
**	6	Give a 3 minute illustrated talk on the Maui Gas field or the Synthetic Petrol Plant, or any other large-scale New Zealand energy producing project	
*	7	Make a large wall chart showing what <i>Conservation of Energy</i> means	
***	8	Build a simple wind powered generator, using a small electric motor	
*	9	Write a brief report on an unusual or unconventional energy producer	
***	10	Build a working model of a solar water heating system using everyday materials	
***	11	Design, conduct and record an experiment which shows that different colours absorb different amounts of solar radiation	
**	12	Build simple cell. Operate a small torch bulb from your cell(s)	
*	13	Units of energy are usually measured in Joules (J). For 10 different common foods, plot a graph of their energy content	

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**	14	When burning, a candle changes chemical energy into heat energy. Perform and report on an experiment you did to find the heat energy given out by a piece of candle (birthday candles are suitable)	
**	15	Build a simple device (or toy) which shows that the more a rubber band is twisted or stretched, the more energy it contains	
***	16	Stand in a safe place near the road. Conduct a survey of the cars going past in a given time. Show, as part of your survey, the number of people in each car	
**	17	Construct, and then use, a questionnaire to find out what people think about the uses of Energy in 100 years from now. Summarise your findings in a chart	
***	18	Explain how solar cells work and where they are used	
**	19	Design and conduct an experiment to demonstrate that objects gain energy the higher they are lifted above the ground	
***	20	Make a water-wheel that makes a small bulb glow	
*	21	Use a simple machine (eg. A cycle) to locate places where friction occurs. On a diagram, show where that friction hinders and helps that machine to operate	