



Energy transformations 4: Car choices

Components

	NAME	DESCRIPTION	AUDIENCE
	<i>Car choices</i> teacher guide	This guide contains instructions for an activity comparing cars using different energy sources.	teachers
	<i>Which vehicle?</i> worksheet	Students compare features of cars that use different energy sources. They analyse information from <i>Vehicle specs</i> data sheet to identify the most suitable vehicle for range of different buyers' requirements.	students
	<i>Vehicle specs</i> data sheet	These cards provide information about different vehicles involved in the activity.	students

Purpose

To **Elaborate** on students' understanding of different energy sources used by vehicles. They apply their knowledge using specific criteria to select the best vehicle for a particular purpose. The activity involves thinking, discussing and explaining.

Outcomes

Students:

- recognise all vehicles contain an electric motor or a combustion engine, or both;
- identify different energy sources used by different vehicles;
- understand energy can come from a range of different sources that may be renewable or non-renewable;
- identify key information required to make a decision to buy a vehicle; and
- discuss potential advantages and disadvantages of each vehicle, reach a group consensus, and communicate recommendations to others.

Activity summary

ACTIVITY	POSSIBLE STRATEGY
Use the vehicle cards (see below, Teacher notes) to introduce students to vehicles that use different technologies and energy sources.	whole class or small groups
Students work through five different buyer scenarios and recommend a vehicle for each buyer. You may choose to allocate one buyer to each group, or ask them to select vehicles for more than one buyer.	small groups
A spokesperson from each group presents their vehicle recommendations to the class. Discuss recommendations: see Teacher notes below for suggested discussion questions.	whole class

Technical requirements

The teacher guide, worksheet and fact sheet require Adobe Reader (version 5 or later), which is a free download from www.adobe.com. The worksheet is also provided in Microsoft Word format.

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Teacher notes

Time required: approximately one 45-minute lesson

Teacher preparation

The data sheet, *Vehicle specs*, contains six pages, each of which provides specifications for a different vehicle. Mount each page on card and laminate to form a set of six cards. Each group requires a set. Alternatively, photocopy pages and distribute a set to each group or distribute electronically to each student.

Running the activity

1. Group organisation

Students work in groups of three.

Each group selects: organiser, recorder and spokesperson.

- The organiser facilitates discussion to decide which vehicle best fits each buyer.
- The recorder takes notes and records key points discussed and decisions made.
- The spokesperson presents their group's recommendations to the class.

These roles help groups work efficiently and effectively.

2. Vehicle specs

Hand out a set of vehicle cards to each group.

3. Buyer scenarios

Allocate to each group one of the six buyers. Alternatively allocate a number of buyers to each group.

4. Group discussion

Students discuss and identify key criteria about their buyer. They consider vehicle specs and through discussion determine which vehicle(s) best meets the buyer's requirements. Each group makes a recommendation and records why this is the best fit for the buyer's needs.

5. Class discussion

The following suggestions may help promote class discussion after students' presentations.

If there are more than six groups:

- do those with the same buyer recommended the same vehicle?
- If not, what are the differences?
- What was the thinking behind these differences?

What vehicle would you suggest your family buys? Why?

The 2014 Australian Bureau of Statistics Motor Vehicle Census revealed that of the 17.6 million registered vehicles, only 2.7% of these were classed as other fuel types (electric, hybrid and LPG). Why do you think this is? How would you encourage more people to purchase and drive electric and hybrid vehicles?

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Web: spice.wa.edu.au
Email: spice@uwa.edu.au
Phone: (08) 6488 3917

Centre for Learning Technology (M016)
The University of Western Australia
35 Stirling Highway
Crawley WA 6009

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