

Understanding Sustainability

Petrol-Electric hybrid cars

How do they work and are they more sustainable?

Petrol–Electric hybrid cars

Create an advertisement or marketing leaflet for a hybrid car (45mins)

Task is suitable for independent study or homework

Level: KS3 and 4

Students work in pairs or individually.

Students research the energy changes in an electric-petrol hybrid car and produce an explanation of the technology.

Highlight the advantages of using a electric-petrol hybrid.

Produce work in the form of an advertisement or information brochure.

Activity Introduce the task with a brief discussion of the energy changes in a petrol car and a petrol-electric hybrid. See points to look for below.

- Petrol car – chemical energy to movement, heat and sound.
- Lots of energy wasted.
- Hybrids harness the wasted energy to increase efficiency.

Use the worksheet to set the problem to students.

Students research the properties of electric-petrol hybrid cars from www.sustainability-ed.org (and other sources as appropriate) before producing the advertisement or information leaflet.

Points to look for in advert / brochure

Look at the energy changes that take place in a hybrid car.

- Hybrid still uses petrol but gets greater miles per gallon of petrol and so reduces carbon dioxide emissions. Especially in urban driving.
- Petrol engine used at higher speeds (typically >25mph).
- Hybrid uses energy when slowing to charge batteries.
- Energy in batteries drive the car at slow speeds and so reduce petrol consumption.

Also the social aspects:

- Hybrids are generally more expensive than petrol equivalent. May be balanced by savings on petrol costs.
- Hybrids now have comparable performance to petrol cars. Earlier electric-only cars had poor performance.
- Technology is still relatively new. There may be comments on reliability.

Resources Access to the www.sustainability-ed.org web site.

Is this the car of the future?

This car does not look remarkable. But it is a new type of car.

It is an electric-petrol hybrid car.

It runs on both petrol and electricity.



What are hybrid cars?

Visit the sustainability web site.

1. Go to **www.sustainability-ed.org**
2. Navigate to the Sustainable Development Case Studies.
3. Go the section on Electric cars.
4. Look at the information on electric-petrol hybrid cars.

Your task

Produce a poster or brochure to advertise an electric-petrol hybrid car.

You should:

- Explain how electric-petrol hybrid cars work.
- Explain why a hybrid car gives better miles per gallon in town traffic than a normal petrol car.
- Explain the advantages to the environment of using a hybrid car.
- Persuade customers to buy a electric-petrol hybrid car.