



## Sustainability

### Curriculum Links:

- **Science** Environmental awareness and care
- **Geography** Human environments
- **SPHE** Myself and the wider world

### Lesson objectives:

To revise material covered in Module 1. To discuss the effect that overuse of the earth's resources has on the environment and what methods are used to stop this.

### Teacher guidelines

It is suggested that the teacher ensures that students are familiar with the vocabulary and concepts introduced in previous modules before starting this lesson.

### Keywords and concepts introduced in Module 1:

environment    water    food    sustainability    future  
 green    recycle    earth    air    energy

The earth provides us with fresh air, clean water and food. To protect the earth for future generations, we must care for it.

After revision of the above, teachers could discuss the more detailed information below.

### Keywords for this lesson:

atmosphere    fossil fuels    renewable    non-renewable

### Energy

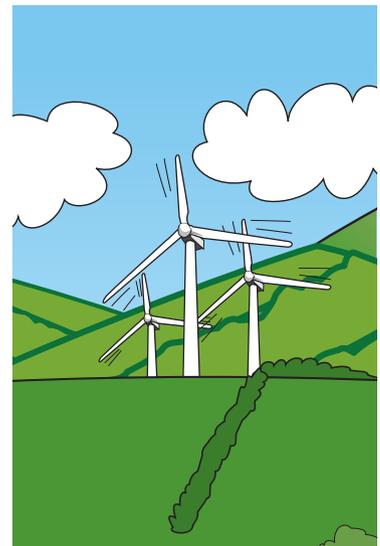
Energy is required for everything we do and we need it for lots of activities; for example, having a nice warm bath or getting home from school each day. Energy is used in every town, city, home and school in Ireland. As the world's population increases, the demand for the energy that we use each day increases.

### Types of energy

#### Renewable energy

Renewable energy is energy which comes from resources that are replenished naturally. Examples of renewable energy include sunlight, waves, wind and energy crops.

The sun is the most important source of renewable energy and it cools and warms the earth, which controls heat, rainfall and wind.



## Non-renewable energy

Non-renewable energy is energy that can only be used once. Non-renewable sources of energy come from fossil fuels. These fuels are created over millions of years from the remains of animals and plants and are used as the main source of energy on earth at present. There is a limited supply of these fuels so they are at risk of running out.

When fossil fuels are burned to create energy, they release gases known as 'greenhouse gases'. These have an effect on the earth's atmosphere by trapping the sun's heat inside the atmosphere, which makes the earth progressively warmer. This increase in temperature can lead to weather conditions quickly becoming too dry (drought) or too wet (flooding). These extreme weather conditions lead to problems for farmers, causing crops to fail and affecting the amount of food available for farm animals.



### Suggested activities

- Photocopy the activity sheet on page 58
- Invite the local environmental education officer from your County Council to come and speak about how students can protect the environment at home and in school
- Ask pupils to write an eco-pledge and each week assign a new eco monitor in your class. This person is responsible for checking the recycling and compost bins, making sure lights are turned off etc. At start of each week discuss how, as a class, you could improve from the previous week
- Allow pupils to create a timeline of their typical day, i.e. from the minute they wake up until they go to bed. Have them highlight and discuss the various methods that people use to get to school (cycling walking, bus, car) and the types of energy used throughout their day (cooking, cleaning, watching tv etc.)
- Go on a class nature walk and clearly identify ways in which animals/plants in the environment use the objects around them in their daily lives
- Have the class design positive promotional posters for around the school, i.e. turn off the lights; turn off the monitor, reduce, reuse, recycle, etc.
- For extension material, see Modules 3 and 4

### Learning outcomes:

At the end of this lesson, students should understand the difference between renewable and non-renewable energy. They should understand the effect of using renewable versus non-renewable energy.

### Additional resources:

- [www.agriaware.ie](http://www.agriaware.ie)
- [www.origingreen.ie](http://www.origingreen.ie)

Developed in consultation with:

**BORD BIA**  
IRISH FOOD BOARD



Working with nature

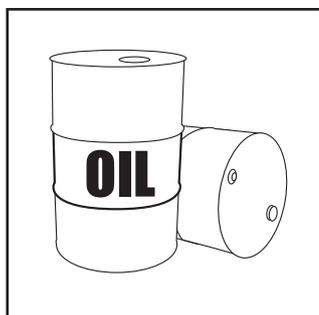


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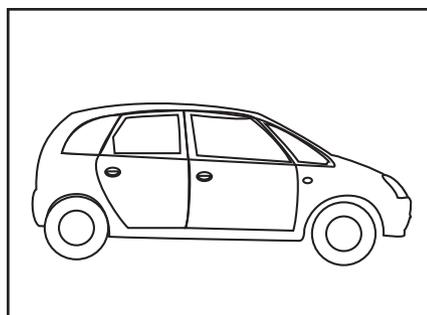
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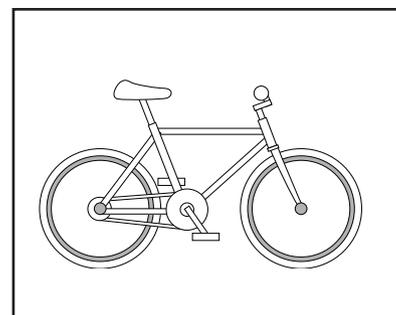
**1** Colour in the illustrations below showing how you can save energy in these paths



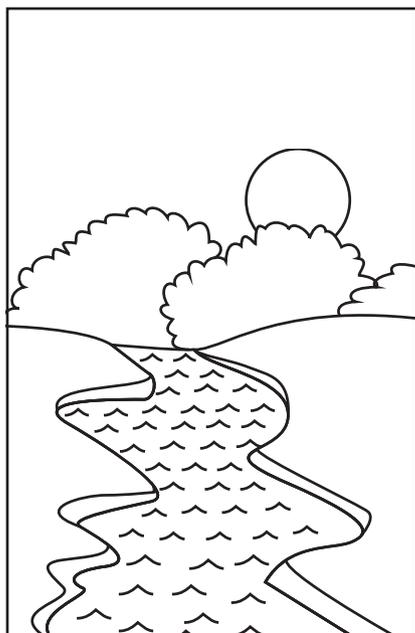
Fossil Fuel



Car



Bicycle



Water



Running tap



Brushing teeth with tap off

**\*To be used with teacher guidelines, page 36**