LESSON 6.- THE FUTURE OF ENERGY

Activity 1.- Let’s review... Activity in pairs: After giving handout 6 to each pair, the teacher asks students to read the sentences and explains the unknown vocabulary. It is worth doing this first part with all the class. After that, the students work in pairs and complete the table.

<table>
<thead>
<tr>
<th>Energy source</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>Will be the last fossil fuel to run out</td>
<td>Emits CO₂&lt;br&gt;Non renewable</td>
</tr>
<tr>
<td>Oil-natural gas</td>
<td>Quick start-up if there is a sudden demand</td>
<td>Emits CO₂&lt;br&gt;Non renewable</td>
</tr>
<tr>
<td>Nuclear</td>
<td>No air pollution&lt;br&gt;Does not produce CO₂&lt;br&gt;No risk of greenhouse effect&lt;br&gt;No risk of acid rain</td>
<td>Risk of big accident&lt;br&gt;Non renewable&lt;br&gt;Unpopular&lt;br&gt;Problems with waste</td>
</tr>
<tr>
<td>Wind</td>
<td>No air pollution&lt;br&gt;Does not produce CO₂&lt;br&gt;No risk of greenhouse effect&lt;br&gt;No risk of acid rain&lt;br&gt;Renewable and free</td>
<td>Noisy&lt;br&gt;Depends on the weather&lt;br&gt;Unreliable if there is no wind&lt;br&gt;Unsightly</td>
</tr>
<tr>
<td>Hydropower</td>
<td>No air pollution&lt;br&gt;Reliable in wet regions&lt;br&gt;Does not produce CO₂&lt;br&gt;No risk of greenhouse effect&lt;br&gt;No risk of acid rain&lt;br&gt;Renewable and free</td>
<td>Floods a large area&lt;br&gt;Expensive to build&lt;br&gt;Affects the ecology of the area</td>
</tr>
<tr>
<td>Solar</td>
<td>No air pollution&lt;br&gt;Good for remote locations&lt;br&gt;Does not produce CO₂&lt;br&gt;No risk of greenhouse effect&lt;br&gt;No risk of acid rain&lt;br&gt;Renewable and free&lt;br&gt;Reliable in sunny regions</td>
<td>Depends on the weather</td>
</tr>
</tbody>
</table>

Activity 2.- Drawing a pie chart.

Individual activity. The students have to draw a pie chart from the percentages of the table. The teacher has to tell them how to do it; a good way could be showing an example of a pie chart and explaining that it is a diagram consisting of a circle that is divided into sections to show the size of particular amounts in relation to the whole. This activity will show the students that the use of diagrams and visuals when dealing with amounts and percentages is the best and easiest way to compare and present data.
The result will be:

![Electricity sources in Spain 2007](image)

Source: REE (Red Eléctrica de España)

**Activity 3.- ROLE PLAY: A debate about renewable and non-renewable energy resources**

The teacher splits the students in groups of three and gives each group a role (A, B, C). The students of each group have to think about arguments to defend their point of view and write them (5 or 6 sentences). They have a grid with useful vocabulary to help them.

After 5 minutes, the teacher makes new groups of three students: in each group there must be one student A, one student B and one student C. They will simulate broadcasting a radio programme and the teacher will go round the class listening and correcting if it is necessary.

After 10 minutes, three students (either volunteers or selected by the teacher) will broadcast the radio programme and the rest of the class have to listen to them and may ask questions when the presenter asks them to do so. It might be a good idea to record them as if it was a real radio programme.
The roles are:

- **Group A:** You are for nuclear energy and you think that this energy is the only solution to produce electricity in the future. You have to write 5 or 6 arguments for nuclear energy and think about the disadvantages of renewable energies.

- **Group B:** You are a member of Greenpeace and therefore you are for renewable energy resources (wind, solar, hydropower). You think that our future depends on increasing their usage. Write 5 or 6 arguments for renewable energies and think about the disadvantages of nuclear power.

- **Group C:** You are the presenter of the radio programme: “The future of Energy”. You have to ask questions and moderate the discussion. Write 5 questions you will ask.
**LESSON PLAN 6.- THE FUTURE OF ENERGY**

**KEY SKILLS:** Students will be able...
- To use the knowledge about facts and processes to predict consequences and take reflective action in order to preserve and improve living conditions.

**TRANSFERABLE SKILLS**

- **Communicative skills:** Students will be able...
  - To make use of graphical resources to show data.
  - To give accounts of experiences, opinions and develop argument.
  - To select from their knowledge and communicate in a variety of ways: talking, writing...
  - To argue and draw conclusions.

- **Methodological skills:** Students will be able...
  - To use and relate the tools of expression of mathematical thought in order to interpret different types of information.
  - To apply strategic thinking and cooperation skills.

- **Personal skills:** Students will be able...
  - To use their initiative and previous knowledge.

**Aim:** Students will use what they have learnt in previous lessons to analyse and compare all the energy resources and to predict the future of electricity production in our country.

### TEACHING OBJECTIVES | LEARNING OUTCOMES | COMMUNICATION | CULTURE
---|---|---|---
**CONTENT**
- Advantages and disadvantages of different energy resources.
- Current electricity production in our country.
- Debating the future of energy.

- Knowing positive and negative aspects of energy resources.
- Knowing the current percentages of each energy resource used to produce electricity in our country.

- **Language of learning**
  Key vocabulary about different aspects of energy: safety, reliability, risk of accident, waste, CO₂, location.

- **Language for learning**
  Expressing opinions, asking and answering questions, discussing.

- **Language through learning**
  Language that comes out when completing tasks, i.e. new vocabulary and expressions

**COGNITION**

To offer opportunities for students to talk and express opinions by means of a role play.

- Expressing opinion taking into account all their previous knowledge.
- Drawing a pie chart from figures of a table.
- Comparing different energy resources.

**ASSESSMENT CRITERIA:** Students should be able to summarize what they have learnt and express opinions using previous knowledge and working in group.

- Energy impact on our lives.