

LESSON 2

TOPIC: CLIMATE CHANGE

SUB TOPIC: RENEWABLE AND NON-RENEWABLE ENERGY

LESSON 2: ENERGY SOURCES

SUBJECT: GEOGRAPHY S.E.S.E

CLASS LEVEL: 3RD / 4TH CLASS (8-10 YEAR OLDS)

LEARNING OBJECTIVES:

This lesson will explore the terms renewable and non-renewable energy

Strand: Environmental Awareness and Care

Strand unit: Environmental Awareness

LESSON OBJECTIVES:

- Students will learn how CO₂ is produced and how it is linked to greenhouse gases.
- Students will be able to differentiate between renewable and non-renewable energy sources.
- Students will explore renewable and non-renewable energy sources.

LESSON PLAN



INTRODUCTION:

- Remind the class in the last lesson they looked at greenhouse gases and how they were a factor causing climate change. One of the greenhouse gases was CO₂. Inform the class that today they are going to talk about our environment in Ireland and the amount of CO₂ we produce.
- Start by asking the class 'does anyone know how we produce CO₂?'. The answer is 'BY USING ENERGY'. Explain that we need energy for everything - petrol for cars, electricity for houses and food for people.



DEVELOPMENT:

- Show the next slide 'Class energy survey'. Ask the class to look around the classroom and make a list of everything that uses energy or needs energy to work. Write their answers on the IWB.
- Next, ask the class to consider ways that can reduce or save energy in the classroom. For example, close the window and turn the heat down, turn the computer monitor off etc. Again, write the answers on the board.
- Show the 'Story of Energy' video on the next slide. Explain that the video talks about renewable and non-renewable energy. Show the slide with the definitions of renewable and non-renewable energy.



CONCLUSION:

Group Activity!

- Divide the class into groups of 6 and give each group an energy sources sheet.
- First, ask the class to name the source of energy and then decide if it is renewable or non-renewable. Next, ask them to add up the total number of CO₂ molecules.

Answers:

1. Non-renewable
2. Non-renewable
3. Renewable
4. Non-renewable
5. Renewable
6. Non-renewable

Total number of CO₂ molecules = - 2

Reflection Time!

- Discuss with the class: What did you learn today? What do you know now that you didn't know at the beginning of the class? Ask the class to finish the sentence 'We can save energy by' and 'we can reduce our contribution to global warming by'

LINKAGE AND INTEGRATION FOR THIS LESSON:

MATHS

Strand: Number (addition and subtraction)

DIFFERENTIATION:

- Use mixed ability groups during the group activity.
- Give children extra time to finish activities if needed.

ASSESSMENT:

- The teacher can assess the written and numerical answers given during the lesson and the completed 'Energy Sources' activity sheets.
- The teacher can assess the learning of the class and individuals during reflection time.

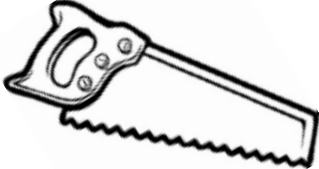
RESOURCES:

- IWB
- USB Presentation
- Energy Sources Activity Sheet

RESOURCE: ENERGY SOURCES

CLIMATE CHANGE 3RD/4TH CLASS – LESSON 2

FOR EACH OF THE PICTURES BELOW, FILL OUT THE TYPE OF ENERGY USED (E.G. COAL, WIND) AND IF IT IS RENEWABLE OR NON-RENEWABLE ENERGY.

SOURCE OF ENERGY	RENEWABLE / NON-RENEWABLE	ADD UP THE AMOUNT OF CO ₂
		In 1908, Ford built the model T car. In 1928, 15 million cars were sold. Today there are an estimated 500 million cars worldwide. ADD TWO CO₂ MOLECULES
		Humans cut down trees. Trees remove CO₂ from the atmosphere. Fewer trees means more CO₂ molecules. ADD FOUR CO₂ MOLECULES
		Humans cycle bikes. Riding a bike is the most efficient form of transport and its fun! TAKE AWAY TWO CO₂ MOLECULES
		Humans create energy efficient technology. TAKE AWAY FOUR CO₂ MOLECULES
		Humans plant trees. Trees remove CO₂ from the atmosphere. The more trees we have, the less CO₂ we have in the atmosphere. TAKE AWAY FOUR CO₂ MOLECULES
		Humans burn waste and this puts CO₂ into the atmosphere along with other pollutants. ADD TWO CO₂ MOLECULES

CLIMATE CHANGE: RENEWABLE AND NON-RENEWABLE ENERGY

LESSON 2

Energy Sources

Class Energy Survey

ITEMS THAT USE / NEED ENERGY

HOW WE CAN REDUCE ENERGY



THE STORY OF ENERGY

RENEWABLE ENERGY

Is a source of energy that never runs out or can be replaced. It comes from natural resources.

An example of renewable energy is wind, sun, water.

NON-RENEWABLE ENERGY

Is fossil fuels that are formed from the remains of dead plants and animals and take millions of years to form. Non-renewable energy sources cannot be replaced.

Examples of non-renewable energy is oil, gas, coal.

**REFLECTION
TIME...**

CLIMATE CHANGE