** LESSON PLAN** 

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| **SCHOOL** | SZKOŁA PODSTAWOWA NR2 IM. K.K. BACZYŃSKIEGO W PUŁAWACH |
| **THEMATIC AREA** | ENERGY |
| **TEACHER** | JOLANTA MURAT |
| **SUBJECT** | THE ENERGY HIDDEN IN THE NATURE |
| **AGE GROUP**(approximately) | 7-8 YEARS OLD |
| **TIME REQUIRED** | 50 MINUTES |
| **PLACE** | CLASSROOM |
| **LESSON OBJECTIVES** | Main aim: Introducting students with various energy sources and the impact of their acquisition and use on the environment.Specific aims:Students:1. their own words discuss the effects of electricity production from carbon,
2. understand the need to search and discover new, pro-ecological energy sources,
3. list exemplary renewable and non-renewable energy sources, understand the difference between them,
4. list ways to save energy in the household,
5. add and subtract in the range of 12,
6. rewrite a sentence, draw up sentences with a words.
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| **LESSONS YOU CAN USE** | * Ecology
* Nature knowledge
* Mathematical knowledge
* Polish language knowledge
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| **CLASS ORGANISATION** | * Individual work
* Collective work
* Group work
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| **MATERIALS** | worksheets, lump of coal, paper windmill |
| **ICTTOOLS** | computer, interactive board, ActiveInspire program, film"How does a wind turbine work? "- You tube  |
| **PROCEDURE** | 1. WELCOME
2. REMINDING OF THE CLASSROOM RULES
3. PRESENTING THE TOPIC OF THE LESSON:
* Picture puzzle- *Attachment 1*

The interactive board presents illustrations of objects, eg: electric kettle, electric blower, computer, vacuum cleaner, iron and scissors.* Which item does not match the other?

(Scissors because they are not powered by electricity.Other devices operate thanks to the power supply.)1. GETTING TO KNOW LESSON OBJECTIVES:
* During today's class you will learn how we get electricity.
* You will know the sources and types of energy.
* You will remind what you can do every day to save electricity.

• **Success standard:**After classes, you will be able to name types of energy, at least three sources of energy and ways to save energy in everyday life.During today's class I’m going to draw attention to:- your activeness,- statements – using full sentences,- group work, -correctness of doing tasks,- behavior.1. CONVERSATION:
* What do you need electricity in everyday life for?
* Where do we get electricity from?
* Where is the electricity produced?

Most of the electricity in our homes comes from coal-fired power plants.The energy is generated in factories, called power plants, and it is sent by a network of wires to other places, eg houses, schools, shops, factories.* ILLUSTRATION OF THE POWER PLANT WITH THE WIRE NETWORK / interactive board- *Attachment 1*
* ILLUSTRATION OF POWER PLANT AND COAL / interactive board- *Attachment 1*

For the production of energy in power plants, there are consumed huge amounts of coal, which is burnt in blast furnaces.**The lump of coal presentation.*** How do you think, is the production of energy from coal safe - clean and healthy?
* Consider, if the fumes and dust that arise during burning coal have an impact on human, animal and plant health?
* Have you ever heard about smog? What is this?

The burning of coal causes that a layer of gases rises above the Earth, which change the climate all over the world (the temperature rises, the weather is unpredictable, there are more floods, droughts, tornadoes, in Poland there are more whirlwinds, it is less snow in winter and the summers can be very hot and dry).Energy production from coal is easy, but it is associated with air pollution. In addition, the extraction of coal from the earth causes that the landscape is destroyed, the rivers dry up, heaps of mine and coal-fired power plant waste are created.Coal was formed from plant remains millions of years ago.* How do you think- can coal deposits ever run out?Is there such a fear that it may goes out?
* Have you ever heard about closed mines?

When we burn coal, it disappears forever.In some time, for example for future generations, it may miss.In addition, coal is used in many industries, for example for the production of tires and medicines.So it is a very valuable resource.* Where is the coal extracted from and how is it done?

Because the coal is extracted (excavated) from the ground it is called fossil fuel.Currently, man also uses such fossil fuels as oil and natural gas for the production of energy.They were created millions of years ago and are lying underground.Because they are extracted and burned by people all the time, they will soon be run out and therefore they are called non-renewable energy sources.ILLUSTRATION OF CRUDE OIL, NATURAL GAS, COAL* The inscription THE NON-RENEWABLE ENERGY SOURCES / interactive board- *Attachment 1*
* Due to the depletion of fossil fuels, people are forced to look for other sources, other ways of obtaining energy,that will not be run out so quickly.
* You will learn about the name of that sources by solving the activities, recorded on the worksheet no 1.
1. INDIVIDUAL WORK AT THE DESKS. WORKSHEETS.- *Attachment 2*
* Calculate.Sort results from the smallest to the largest number and enter it in the boxes.

12 – 2= ….. 10 + 2 =……..10 – 3 = …… 5 + 3 = …….

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* Check in the board
* Cards with results are placed under the board.The teacher asks selected pupils to come up and arrange themselves with selected cards, ordering the numbers from the smallest to the largest.
* Numbers: 7, 8, 10, 12.
* After proper setting (each student has a card with a number in front of him) the teacher asks them to turn the cards over. On the back of the cards there are syllables that form the word

 RENEWABLE* Common reading of the password.
* The teacher informs that the students just got to know the name of energy sources that will never run out. This is renewable energy sources.
* You will learn,what are renewable energy sources, by doing the next exercise.
1. GROUP WORK

**(Reminding of the group work rules: consistent work, selecting a group leader, sharing tasks, correct task execution.)*** The teacher asks students to take out the cards from the envelopes and solve the rebuses.Then they will receive the name of the renewable energy source.The name should be written under the rebus.
* Each group receives a rebus, a solution is the name of the renewable energy source. The solutions: **wind, sun, water.**
* After solving the rebuses students put together puzzles (they take them out of the envelopes) presenting: a windmill, solar panels, a water dam - a hydroelectric power plant.

**Checking on board.*** The teacher discusses the sources of energy (presentation on the interactive board). She draws attention to the fact that such energy will never be run out and is environmentally friendly.- *Attachment 1*
* film "How does a wind turbine work?" - You tube (1.30 minutes)
1. SHORT BREAK/PHYSICAL ACTIVITY- movement fun with the song ,, One, two, three four .... "
2. EVALUATION OF PREVIOUS WORK
* **Worksheet number 2-***Attachment 3*

Illustrations presenting renewable and non-renewable energy sources (coal, oil, natural gas, water, sun, wind)* Task no 1
* Circle by a green loop renewable energy sources.
* What are the other energy sources called?
* Task no 2
* Connect the energy source with the name of the received energy.

sun solar energywater wind energywind water energy* **CHECKING IN THE BOARD**
* **Worksheet number 3-** *Attachment 4*

Tasks: Group I: Rewrite the sentenceGroup II: Draw up the phrase from a words.* You can colour the drawing.
1. KEY QUESTION
* **What would happen if one day there was no electricity?How would your life be changed then?**
1. DISCUSSION-SAVING ELECTRICITY
* **You were supposed to talk at home with your parents about the amount of electricity charges.What did you find out?Are the fees for electricity small or high in your homes?**
* **So is it worth to save the electricity? Why?**
* The Erasmus + program is realized in our school.As part of this program, we learn how to care for the environment andhow to save energy, the production of which is expensive.How can you save electricity? (Paying attention to stickers in toilets and in contacts - light switches.)
* Remind, what can you do in your everyday life to save energy?

Students give examples. |
| **EVALUATION** | 1. **Worksheets, as during lesson- current evaluation**
* **Worksheet number 2-** *Attachment 3*

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* Connect the energy source with the name of the received energy.

sun solar energywater wind energywind water energy* **CHECKING IN THE BOARD**
* **Worksheet number 3**

Tasks: Group I: Rewrite the sentenceGroup II: Draw up the phrase from a words.* You can colour the drawing.
* **Game ,,True - False''**

The teacher speaks sentences.Students react appropriately:* on the true sentence - they raise their hands over their heads and clap,
* false sentence - they leave their hands and stand without move.

Example sentences:* The sun gives wind energy.
* The sun gives solar energy.
* Coal deposits will never run out.
* Coal is a non-renewable energy source.
* Electricity charges are very low.
* It's worth to save electricity.
* The sun, water and wind are renewable energy sources.
* Renewable energy sources don't pollute the environment.
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| **ATTACHEMENTS** | ActiveInspire presentation, worksheets number 1, 2, 3 |