

Tytuł: Scenariusz lekcji fizyki w szkole ponadpodstawowej

Aleksandra Fogtman

I LO w Pile im. Marii Skłodowskiej – Curie

Nauczycielka fizyki

Subject : Electric energy consumption.

Aims of the lesson

According to the programme base:

Knowledge

- *A student names kinds of energy the electric energy is transformed to,*
- *A student names the sources of electric energy,*

Skills

- *A student is able to conduct an experiment, get results and come to conclusion.*
- *A student performs mathematic accounts,*
- *A student makes research, selection and a critical analyze of information and is able to work in a team.*

Upbringing:

- *A student reinforces his/her self-confidence and strengthens the ties of the group.*

Methods and forms of work:

- *Work in groups,*
- *talk, „brains-storm”,*
- *practical ,*
- *observation – multimedial presentation.*

Literature

- *A manual „Spotkania z fizyką” (“Physics meetings”), part 3*

I. Introduction

1. A welcome the students (they are going to their seats), a check of their presence.
2. A short revision of the knowledge from previous classes:
 - the students are naming the kinds of energy the electric energy is transformed to;
3. The teacher is giving the groups envelopes with tasks:
 - „Match the examples to a kind of energy the electric energy is transformed to”
 - a) light – an electric bulb, a screen of a monitor, a TV-set;
 - b) mechanic –a vacuum-cleaner, a washing machine, a food processor;
 - c) warm – a heater, an iron, a hairdryer, a hair-straighter;
 - d) electromagnetic – a microwave oven, an electromagnet.
 - the students are doing the tasks, showing the solutions to the teacher who checks their correctness;
4. The students are coming to conclusion that electric energy is indispensable for us to live in the contemporary world.
5. The teacher's question: In which way may we get electric energy?
 - the students are naming the sources of electric energy they know:
a battery, a generator.
6. The teacher is asking if the students know what renewable sources of electric energy are.
7. The teacher is showing a computer presentation about the renewable sources of electric energy.

II. Exercises – a construction of students' own little wind and water powered electric plant

1. The students watch short films which explain how to build their own little electric power plant.
2. The show of a power plant work after it is built.
3. The electric current's quality control by usage of voltmeters, ammeters and universal devices.

4. Accounts of the electric energy consumption by home devices: a vacuum-cleaner, a washing machine, an electric kettle, a TV-set.
- the students are estimating the daily average working time of a particular device;
 - The students are counting the electric energy consumption using the formula: $W = P \cdot t$
 - The students know, that the price of 1 kWh is (0,53 zł) and they are counting the cost of electric energy consumption.
 - The students are comparing the energy usage of the devices and discuss possibly reasons of differences.

III. Conclusions

1. The students analyze results and come to conclusion that the investing to development of renewable sources of energy are essential.
2. Estimation of the students' work
3. The end of the classes.