**Lesson Plan**

**Subject: Science/Biology**

**Target Group: 6th-grade students**

**Topic: Forces of Nature**

General Aim:

* Sources of energy in European countries,
* Alternative energy sources.

Operational Objectives:

* Identify energy resources,
* Understand the concepts of non-renewable and renewable energy sources,
* Characterize energy sources in European countries,
* Identify the largest areas of coal mining on the map,
* List the characteristics of animal adaptation to different climatic conditions,
* Understand the importance of physical activity.

Lesson Description:

Walking - A Great Way to Maintain Health

I. Introduction

1. Energy resources in Europe

- Identify the occurrence of hard coal and lignite on the map

- Stages of coal formation

2. Classification of mineral resources

II. Development

1. Various energy sources in European countries – schematic

Conventional energy, unconventional energy – utilization of flowing water, geothermal water, wind, and solar energy

2. Solar energy and its applications - Group 1

Hydropower - Group 2

Wind energy and electricity production – Group 3

Geothermal energy and energy production - Group 4

Groups work on assigned topics, search for more interesting information. Groups present the results of their work.

3. Further work in groups

Group 1 deals with photovoltaics,

Group 2 - hydropower dam,

Group 3 - wind turbine,

Group 4 - geothermal power plant,

4. Analysis of statistical data, thematic maps, and tables,

5. How do animals use the force of the wind?

Animals also enjoy basking in the sun… - pictures,

6. People go on vacation and spend a lot of time in the sun. It's important to know what foods to avoid, "sun diet."

7. Make a sundial - art and experiment.

Write numbers on the circular paper plate like on a clock, then attach a small ball of clay in the center of the plate and insert a toothpick into it.

Experiment - on a sunny day at noon, set your sundial on the ground in the sun. The shadow cast by the toothpick is 12:00. Leave the sundial outside for a few hours, but check every half hour to see how the shadow moves.

III. Conclusion

1. Brief history of windmills and wind turbines,

- old windmill structures in Poland,

2. Virtual tour of the windmill interior

Independent Work

1. Design a graphical sign for the geothermal power plant.