

"Following extinct and active volcanoes, earthquakes through Europe"

Łukasz Opyc

tel. 888 999 179

e-mail: lukaszopyc@gmail.com

Spółeczne Gimnazjum

58-100 Świdnica

ul. Mickiewicza 1-3

LESSON WITH AREAS OF GEOGRAPHY

TRIP ROUTE:

WROCLAW - JAWOR - MYSLIBÓRZ - MAŁE ORGANY MYSLIBORSKIE - WAWÓZ MYSLIBORSKI - MYSLIBÓRZ - CZARTOWSKA SKAŁA - SĘDZISZOWA - WIELKIE ORGANY WIELISŁAWSKIE - WILKÓW - WILCZA GÓRA - ZŁOTORYJA - WROCLA

Time:

Wrocław - Myślubórz (road 1:15)

Myślubórz - Małe Organy Myśluborskie - Wawóz Myśluborski - Myślubórz (stop 1:30)

Myślubórz - Czartowska Skała - Wielkie Organy Wieslisławskie (road 0:25)

Wielkie Organy Wieslisławskie (stop 0:30)

Wielki Organy Wielisławskie - Wilcza Góra (road 0:20)

Wilcza Góra (stop 0:30)

Wilcza Góra - Złotoryja - Wrocław (road 1:30)

Subject: Volcanism and earthquakes.

Lesson Objectives:

The student knows:

- Construction of a volcano,
- The effects of volcanic activity.

The student understands:

- Concept: an earthquake, volcano, lava magma eruption, crater, caldera, chimney, volcanic bomb.

The student is able to:

- Discuss the construction of a volcano
- Indicate the relationship between the presence of volcanoes and distribution of lithospheric plates,
- Indicate on the map examples of volcanoes and earthquakes,
- To discuss the effects of volcanic activity and earthquakes,
- Clarify the causes of earthquakes and volcanoes.

The student is able to:

- Analyze data, events and draw conclusions.

Methods: talk, work with a map, work with text.

Type lessons: introduction of a new material.

Form of work organization: the collective, individual, group.

Didactic Handbook, job card student, tourist map of the region, map of Europe, Internet.

Tok Class field:

1. During the bus ride from Wrocław to Mysłibórz teacher introduces students to do homework field. Gives the processes occurring inside the Earth. Repeats label construction of the lithosphere. Explains the action taking place in the zone of subduction and plate collision. It describes a brief history and geology of the Sudeten Foothills Kaczawskie.

2. Explanation of the causes of earthquakes and concepts hypocenter and epicenter.

3. At each of the stops, students perform tasks in the worksheet, using different teaching aids. Teacher or guide sudecki leads the group and presents the basic issues. Students work on the received cards. Optionally, on a trip, you can visit Złotoryja (Gold Museum, The Gold Mine "Aurelia", Old Town).

4. On the way back the teacher sums up the trip and the most important issues. Collects labor card, which will be evaluated.

Issues and important points excursions:

Małe Organy Myśliborskie

- the phenomenon of volcanic (magma and lava)
- construction of a volcano
- volcanic eruption products (solid, liquid and gaseous)

Wąwóz Myśliborski

- types of earthquakes
- distribution of earthquakes (Sudeten Marginal Fault as an old zone earthquakes)
- the effects of earthquakes
- strength and scale of earthquakes

Czartowska Skała

- types of volcanoes (slotted, conical - occurring former Foothills Kaczawa).

Wielkie Organy Wielisławskie

- types of extrusive igneous rocks
- different age of volcanism in the Sudetenland
- operation of volcanic rocks
- change the landscape by man
- protection of areas of old volcanic regions on example of Kaczawskie
- tourism "Kraina Wygasłych Wulkanów"

Kaczawskie Plateau

Kaczawskie Lower Silesia charming at any time of year, but especially in spring, when the small hills and single trees grow more than juicy plane blooming rape. But when talking about volcanoes in Polish, no area Złotoryja much we would have to say. Contrary to the belief volcano was never Snow White or Sleza. In contrast, the Silesian Fujiyama not without reason called haircut, the highest peak keynote volcanoes Kaczawskie Plateau. In the vicinity of Mysliborz pillow lavas indicate undersea volcanic eruption already 500 million years ago. Famous authorities Wielislawskie near Swierzawa is the result of volcanism before 300 million years. However, most of the smoking craters appeared about 20 million years ago. The youngest volcanoes, much higher than the current vertices, built from slag and ash, were the most explosive, spitting streams of lava. Classic volcanic cones disappeared from the landscape of the Lower Silesia region several million years ago. Erosion survived only because volcanic chimneys, where the lava slowly froze in the form of basaltic rocks. It was then that a network of cracks reminds pipe organ, extraordinary work of nature from the time when a person has not yet had nothing to say.

Małe Organy Myśliborskie

Hidden in the backwoods, great unveiling of vertical basalt pillars at the top of Rataj (350 m asl). It looks like a rock pulled by giant claws. Authorities are almost 30-meter long remnant of the volcano destroyed the forces of nature. After the cone and crater there is no trace. It survived only basalt nek filling the interior of the volcanic chimney. Fifteen minutes walking from the Myślibórz Jaworem.

Gorge Myśliborski

The provision of nature, is located at the foothills Kaczawa the river Jawornik. It located in the eastern part of the Landscape Park Chełmy. The area of the reserve flora and geological is a fragment of a wooded valley brook Jawornik. Reserve was created primarily to protect the one in Lower Silesia position very rare, protected ferns's tongue ordinary occurring on the rocks and the surrounding natural forest of mixed oak-hornbeam stand and other rare plants. The clear waters of the brook is an interesting chunk *Hildebrandia rivularis*. In the reserve were also protect the oldest parts country, they are relics of an undersea volcanism - pillow lavas and other rock transformed from the Paleozoic, mostly lawns, greenstone schists and diabase and Ordovician shales and phyllites, belonging to the metamorphic Kaczawa. From a later period of the Alpine protected edge terrain in which there Paleogene surface alignment with relics of basaltic volcanism land of the Tertiary period.

Czartowska Skala

Inconspicuous, yet disturbing hill next to the road from Jawor to Swierzawa (463 m asl). It surprises as a great vantage point to Kaczawskie and Giant and valuable example of activity shield volcano, characterized by a lack of violent eruptions. Basaltic cone with steep slopes traces of volcanic lava core and cover.

Wielkie Organy Wielisławskie

Fantastic, steep cliff on the slope Wielisławki (375 m above sea-level) is situated on the banks of the Kaczawa in Sędziszowa in Świerzawa. Impressive size (nearly 80 meters high) and the structure of the pole deceptively resembling organ pipes. This quartz porphyry color caused by the solidification of magma in the volcanic chimney. The organs leads a scenic path that can overcome the car. Unfortunately, it is easy to overlook on the main asphalt road.

Wilcza Góra

Demonic up under Złotorya (367 m asl). One of the most amazing natural wonders in Lower Silesia. Nek representing almost the whole cross-section of the chimney with the phenomenon of volcanic basalt in the form of a rose, the pillars of fancy, star-shaped layout. An interesting fact is unparalleled elsewhere vegetation and the Wolf and the Bear's Den, the caves at the foot of the mountain, reached by hiking trail. He is credited working here for a hundred years, the quarry is unveiling unique, the most attractive geological layers. However, the same mine devouring werewolf threatening to all that the volcanic neku most valuable. A small consolation is that the local basalts were used to build the Palace of Culture in Warsaw and the North Port of Gdansk.

Ostrzyca Proboszczowicka (visible during the tour)

The highest elevation Kaczawskie Foothills (501 m asl) called the Silesian Fujiyama. Dominating the flat surroundings chimney of an extinct shield volcano forested. At the top of the basalt deforested, picturesque rocks and unique vegetation leads 445 stairs. Great vantage point of the Giant Mountains and the Mountains. Especially in May, when the mountain emerges from the endless expanses of blooming rape. Ostrzyca closest to the Bęczyny and pastors.

First and last name:

Worksheet student I - Gorge Myśluborski and Male Organy Mysliborskie.

1. Enter the difference between magma and lava.

2. Describe the construction of the volcano. Arrows point to the items shown in the figure.



3. On the world map mark the location of earthquakes and volcanism.



4. Replace the products of explosion of volcanoes. Emphasize that occurred in the Kaczawa Plateau.

- **Fixed:**
- **Liquid:**
- **Gas:**

5. Types of volcanoes:

- **because of the shape:**
- **because of the types of eruptions:**

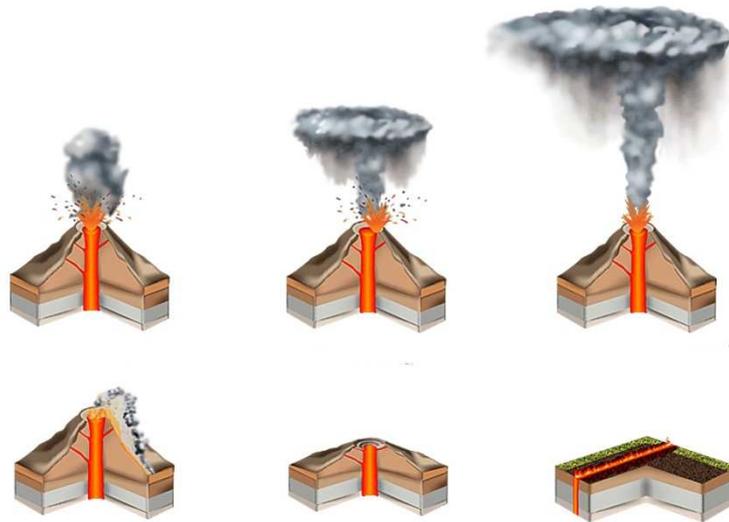
6. Enter the effects of earthquakes and volcanism.

7. Replace the rocks occurring in the Canyon Myśluborski and Małe Organy Myśluborskie (enter the geologic period of their creation).

First and last name:

Worksheet student I - Wielkie Organy Wielisławskie - Wilcza Góra

1. Sign the types of volcanoes because of the build:

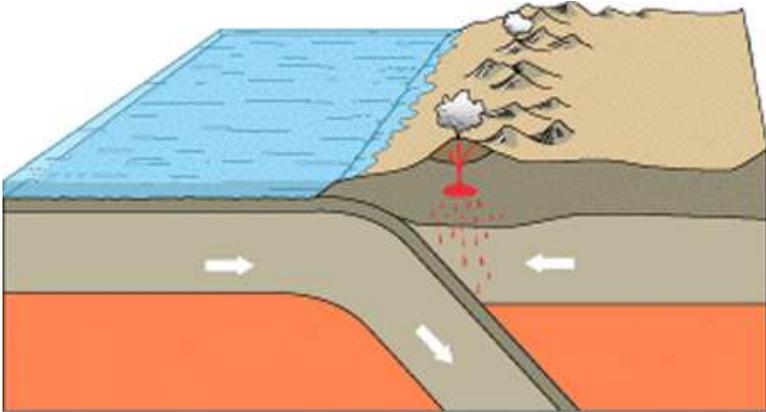


2. Enter the great organ building and Wielisławskie rocks Wolf (specify period of geological their creation).

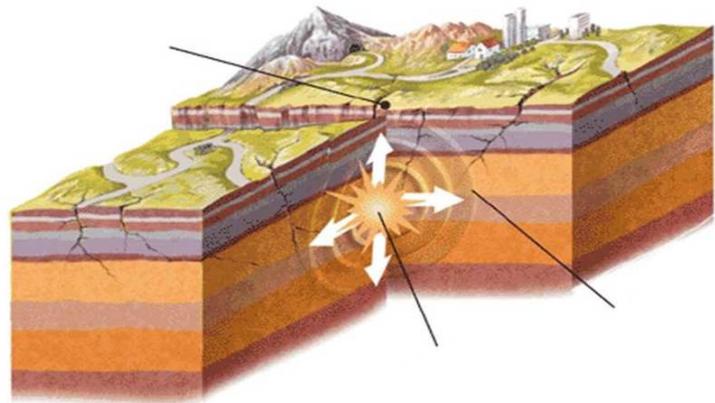
3. On the basis of the trips review changes under the influence of the operation of the volcanic rocks.

4. Replace the most important tourist attractions "Krainy Wygasłych Wulkanów"

5. Sign the drawings to visualize the lithosphere plates contact.



6. Please sign the items on the drawing.



7. Replace the ways of monitoring earthquakes.