

# Flames in the nature—,, Intro to practical field activity for prevention and managing of wild fires”



## AIM OF THE ACTIVITY

The main purpose of this activity is to train the students to recognize the risk of wild fires and to successfully manage different situations of them. It involves a practical introduction of the field and perceiving differences between vegetation in a field that was not affected by fire and a field that was caught in one.

On field training for putting out simulated wild fires and ways of correctly using fire in an open area.

Training by professionals for evacuation in case the students are caught in an area that is affected by fire.

Acquiring abilities for giving first aid in case of burns made by wild fires.

Reading and sending coordinates while using a GPS device and following instructions from fire rescue teams with the intention of a safe evacuation from a fire affected field.

Introduction to the MKFFIS system, its tools and its huge role in prevention and early detection of wild fires.

Explanation of the statistical methods for the prediction of wild fires using geographical maps that are made in the MKFFIS system, for example, Vegetation Dryness Map, Fire Index Map etc.

## YEARS OF EDUCATION AFFECTED

First and second year of high school.

## BENEFITS FOR THE STUDENTS

Students will acquire:

- ✓ Developing scientific abilities: Students will be able to develop their scientific abilities throughout activities such as evacuation and giving first aid in the case of a fire, which will drastically improve their abilities in managing themselves on an open field and situations in a case of a wild fire.
- ✓ Improvement of analytical abilities: The activities involved in this teaching unit will boost their analytical capabilities, such as reading maps, analysing data and interpretation of the results.
- ✓ Developing critical thinking: The students will be encouraged to think critically for the influence of humans in causing wild fires as well as the big role of humans in the extinguishing and reduction of the consequences of the wild fires on the flora and fauna of the field affected.
- ✓ Developing of cooperation and team work: Throughout group activities, the students will be able to deal with certain types of challenges together, cooperating and sharing ideas so they can reach the assigned goals.

- ✓ Connecting the theory with the implementation: This curriculum will enable the students to connect their theoretical knowledge with practical problems, which will make them more ready for different real life situations.



## PRIOR KNOWLEDGE

The students' foreknowledge should be detailed, especially because this project asks them to use their knowledge and abilities in different areas of the natural sciences. For a complete participation in the project, the students need to have or to complement their knowledge with new informations and events.

### **Biology:**

Basic knowledge of the influence of wild fires and their consequences on the ecosystems, biological diversity, quality of air and human health. Wild fires can have severe biological consequences, some of them include:

- ✓ Loss of animal and plant lives
- ✓ Pollution of air and water
- ✓ Loss of biodiversity

### **Chemistry:**

Basic knowledge of chemical reactions, chemical components and the concept of chemical analysis is essential.

Wild fires can cause different chemical processes, including burning of plants and organic matter, which can release a variety of gases and molecules.

The foreknowledge in the field of chemistry should include a comprehension for different gases which can appear in the air after a fire and how to measure and analyse them.

Fires can affect the climate too.

### **Physics:**

Understanding of the laws of thermodynamics and the basic principles of energy and heat is key in comprehending the processes of burning and their physical aspect. Some important concepts are:

- ✓ Smoke and air pollution
- ✓ Potential for an explosion
- ✓ Higher temperature differences
- ✓ Intensive heat and safety from fire

### **Mathematics:**

Mathematical aspects connected to wild fires are usually related to data analysis, modelling, predictions, identification of shapes, trends and optimization of resources.



## ACTIVITY DESCRIPTION

**Activity 1:** Identification of risks and recognition of conditions in which a wild fire can occur.

The main goal of this activity is to recognize the potential dangers and to predict conditions which can lead to a wild fire occurring.

- ✓ Training for recognition of zones with a bigger risk for wild fires.
- ✓ Researching of meteorological and other factors which may cause fires.
- ✓ Analysing of the field and the vegetation which may quickly burn.
- ✓ Recognition of natural barriers or infrastructure which may help eliminate the faster spreading of the fire.

**Activity 2:** Prevention and safety from wild fires.

With this activity, we are taking a look at how to reduce the risk of occurring of wild fires and how to establish an effective safety for people, property and the environment.

- ✓ Rules for a „safe stay and movement” in the nature.
- ✓ Studying methods for prevention such as the creation of harmless zones.
- ✓ Correct use of fire in an open field.
- ✓ Raising awareness of being responsible and respectful towards the nature.
- ✓ Fines will be received if the rules of „stay and movement” in nature are not followed.

**Activity 3:** Methods of extinguishing wild fires.

Putting out wild fires is a complex and risky process, which includes a variety of techniques and resources.

- ✓ Simulation of wild fire and scenarios of how can we manage them.
- ✓ Training with different tools and equipment for fire extinguishing.

A person from the firefighter department will show an exercise in which he will demonstrate how to use some tools and resources to put out a fire. The students will also be able to practically participate in a situation of managing a fire.

**Activity 4:** Presentation of plans of evacuation and rescuing in the case of a wild fire.

- ✓ Introduction to plans of evacuation in the case of a wild fire.
- ✓ Exercises for evacuation, rescuing and giving first aid in case of a wild fire.

A professional will present the plans for evacuation if you get yourself caught on a field engulfed in fire. It will be explained in detail, the procedures for organizing the rescue teams and the needed resources.

An exercise will also be executed, for giving first aid on a field engulfed in fire, but also from evacuating wounded people from the place.



**Activity 5:** Presentation of the Macedonian system of detecting wild fires(MKFFIS) and his role in prevention and an early warning about wild fires.

- ✓ Introduction to the design of the MKFFISsystem.
- ✓ Introduction to the tools and products which the system offers.

## MATERIALS

For realization of the field teachings, different materials and tools will be needed for the portrayal of the activities. Every material should be accustomed to the level of the students and should encourage them to think and to learn of the importance of prevention and managing of wild fires.

### Materials for a better interaction and understandin of the students:

- ✓ Cards and maps-Showing maps and cards in which are marked zones with a high risk of wild fires. This can be useful to identify the risky areas.
- ✓ Presentation - it will cover the basic aspects of wild fires, including causes, prevention, managing and safety, using visual elements, diagrams and pictures.
- ✓ Scenarios for simulation which will cover the different aspects of prevention and managing wild fires. This can include scenarios for evacuation, rescuing and first aid.
- ✓ Handing out brochures which include basic informations for prevention of wild fires. This can be useful for better understanding of the students.
- ✓ Sheets with exercise and questions for the students, which will stimulate discussions and debates.
- ✓ Using interactive materials such as videos, web pages and applications to support the teachings.

### Some ideas for checking the acquired knowledge from the activity

For checking the acquired knowledge after finishing the activity for the field teaching of prevention and managing with wild fires, some creative and interactive methods can be used:

- ✓ **Quiz**  
A short quiz with questions that cover key concepts and information about wild fires.
- ✓ **Group discussions**  
Students are divided into groups and they are given precise scenarios connected to wild fires. They should discuss the best ways of prevention and reaction of those situations.
- ✓ **Solving problems**  
Students are given real scenarios and challenges with wild fires and they solve them in small groups. In the end, they present their solutions to the others.



✓ **Workshops and simulations**

Organizing small workshops or simulations where the students will be able to practically apply their knowledge. An example would be a scenario of a wild fire where they need to take specific actions.

✓ **Presenting of the project**

The students are given a project to elaborate in which they would raise awareness for prevention of wild fires in their community.

✓ **Return of information**

Ask the students to share an interesting fact or information that they learned on the field teaching.