

The Echo of Fires

Objectives:

- Learn about recent major fires and how they have impacted the Earth
- Promote awareness on fire prevention and management.

Before starting

The teacher introduces the activity through a brief guided discussion on the concepts of forest fires and natural fires. The teacher asks the class if they have ever heard of fires in different areas of the world:

- The fires in the Amazon
- The fires in Australia
- The California fire
- The Notre Dame fire
- The fires in Greece
- The fires in Sicily

Information is collected on media exposure of the events, known damage and the current status (if known) of these emergencies.

The impacts of fires

The teacher explains that the effects of fires can be measured and classified in terms of timescale.

First and second order effects of fires

First-order effects are the direct consequences of fire, influenced by combustion, the conditions before the event and the surrounding environment. Examples of these effects include:

- Plant damage or death
- Fuel consumption
- Smoke production
- Soil heating

Second-order effects, which can occur over the long term (days, months or decades), are indirect consequences of fires and depend on various factors such as climate, insect interaction, land use and seed availability.

Examples of second-order effects are:

- Soil erosion
- Smoke dispersion
- Changes in vegetation

The effects on vegetation are influenced by fire behaviour, which is in turn determined by plant characteristics, weather conditions and their spatial distribution. Plants that have adapted to fires are called **pyrophytes**. These fall into two categories:

Passive: they resist fire thanks to special characteristics such as thick bark.

Active: they regenerate after fire through suckers, roots or rhizomes (such as tree heath and strawberry trees).

The Earth's echo: what happened?

The teacher divides the class into four or five groups, assigning each group a famous fire to analyse. Fires may include:

- Chernobyl fire (1986)
- Amazon fires (2019)
- Fires in Australia (2019-2020)
- Notre Dame fires (2019)
- Yosemite fires (2020)

Each group will have to carry out research on the assigned fire, taking care to include the following elements in the final paper.

- *Cause and start of the fire*
- *Affected area and extent of damage*
- *Impact on the environment (flora, fauna, air, water)*
- *Effects on the local community (economy, health, culture)*
- *Lessons learnt and prevention measures*

At the end of the research, each group will have 15 minutes to present their work to the class. The groups can choose an original format, such as a news report, a short story or a theatre skit to represent the assigned fire and the information gathered.

Concluding thoughts

After the work presentations, the teacher facilitates a discussion to reflect on what the class has learnt. The teacher asks them to share their thoughts and reflections starting with the following stimulus questions:

- *Which fires have had the greatest impact and why?*
- *What can they personally do to contribute to fire prevention?*
- *How can communities help each other in case of fires?*