

Community engagement



THE FIRE BEHAVIOUR GAME

FIRE PRIME

European Programme for Wildfire-Prepared Communities

FIREPRIME is a project by:



UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH



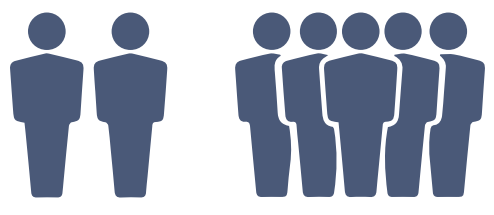
Universitat Oberta de Catalunya



Co-funded by the European Union

FIREPRIME is co-funded by the European Union Civil Protection (Project GA101140381, FIREPRIME UCPM-2023-KAPP). Views and opinions expressed in this document are however, those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the granting authority can be held responsible for them.

PLAYERS



2-6

DURATION



AGE



To encourage good participation from all players, it is recommended that the number of participants range from 2 to 6.

The activity can be carried out with more participants, but in a demonstrative way, without active involvement from all players.

The duration of the game is also variable. Depending on the number of forest scenarios to be created and the level of detail, the duration can range from 15 to 30 minutes.

8-16 years.

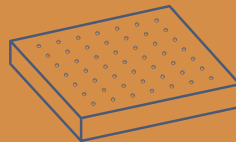
LEARNING OBJECTIVES

The fire behaviour game is designed to clearly and visually demonstrate **how fire spreads and behaves depending on forest structure**. This allows participants to understand **the importance of forest management** around urbanizations and residential areas as a key protective measure.

GAME OBJECTIVES

Participants must create two different forests using matchsticks and cotton: a managed forest and an unmanaged forest. By varying the amount of cotton and matches, as well as their spacing, they should aim to make the unmanaged forest burn completely, while the managed forest burns only partially and more slowly.

MATERIALS



Wooden board with small holes (with a diameter similar to a matchstick), arranged in a grid and spaced 1 centimetre apart.



Matchsticks of different sizes (to simulate trees).

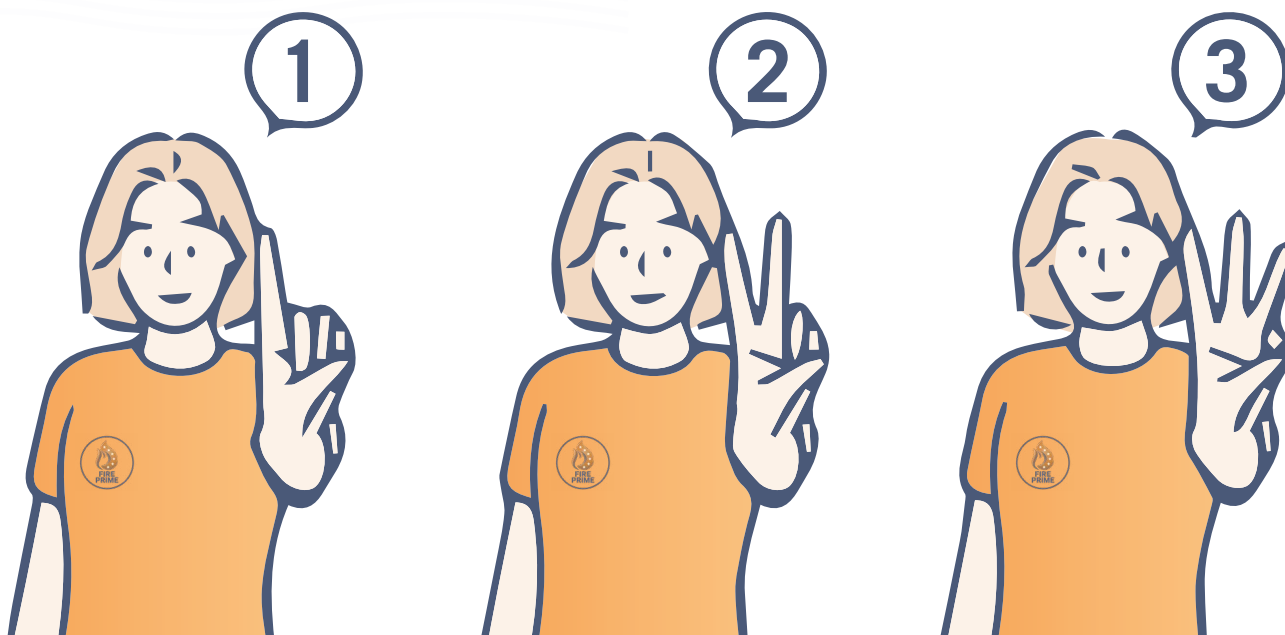


Cotton or sawdust (to simulate undergrowth).



Cork stoppers (to simulate houses).

GAME DYNAMICS



The game requires an adult responsible to introduce the key concepts of fire behavior and propagation, as well as to facilitate the activity.

The facilitator begins the activity by showing **three different forest scenarios** to demonstrate how fire behaves **depending on the spacing of matches, density, and slope**.

GAME DYNAMICS I Slope

1

Situation 1: Equal number of matchsticks and spacing

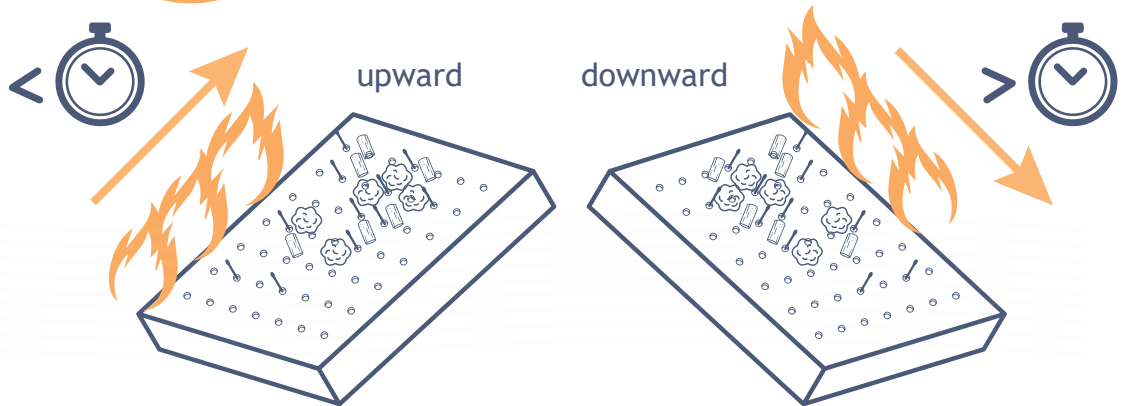


With an inclined board.

With a flat board.



In this situation, participants observe how the fire spreads faster upward on the inclined board than downward.



GAME DYNAMICS II Spacing

2

Situation 2: Flat board

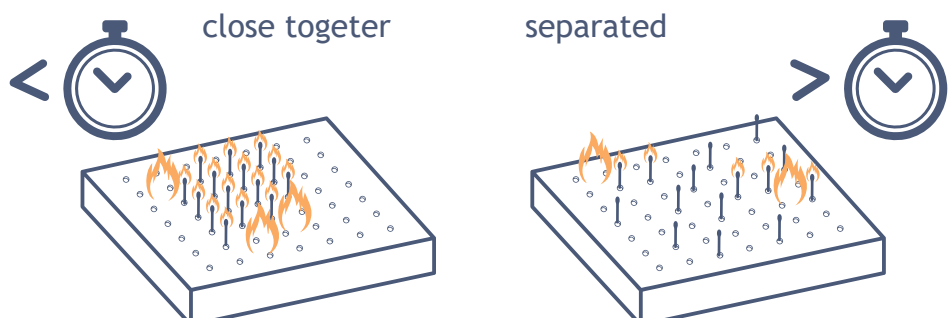


Matchsticks close together.

Matchsticks separated.



Participants observe how matches placed closer together burn faster due to the proximity of the flames.



GAME DYNAMICS III Density

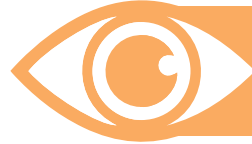
3

Situation 3: Undergrowth

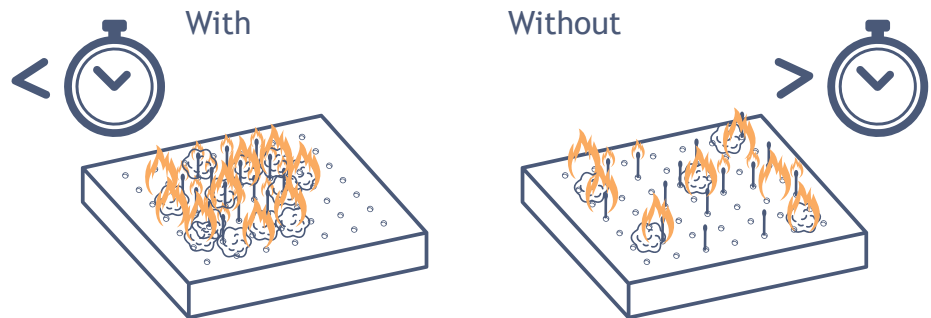


With undergrowth.

Without undergrowth.



Participants observe how the fire spreads more quickly and intensely when there is a denser undergrowth (cotton).

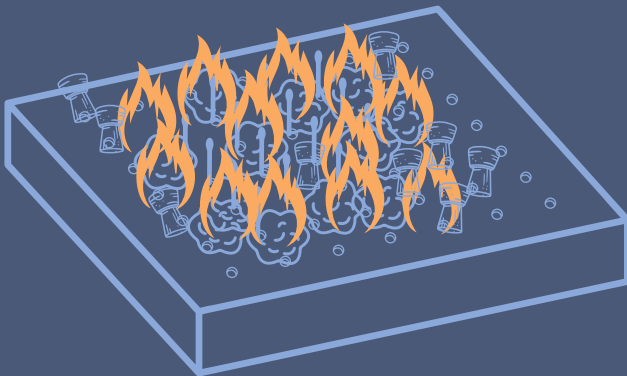


SCENARIOS

After viewing these three situations, the players are tasked with creating two different scenarios:

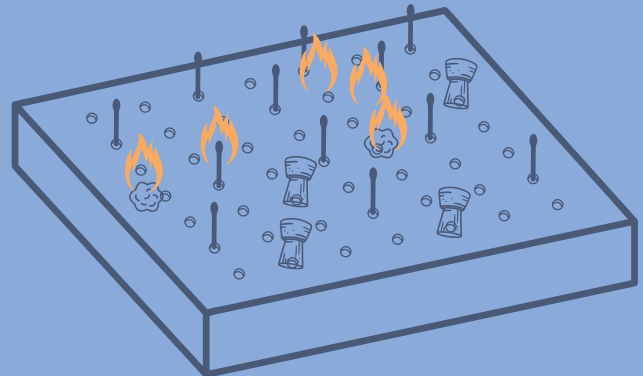
UNMANAGED FOREST:

Players must create a scenario that results in a fast and intense fire. They can place cork stoppers to simulate houses and assess their impact.



MANAGED FOREST:

Players must create a scenario that results in a slow and mild fire, with minimal impact. The cork stoppers simulating houses should remain unaffected.





WARNINGS:

This activity involves the use of fire.
For this reason, it is essential to follow these safety measures:



The activity must only be carried out under the supervision of a responsible adult.

It must take place in an area far from forests or flammable materials. It is recommended to use a space designed for handling fire, such as a non-combustible surface.



Water or another extinguishing element must always be nearby to control any unexpected situation.

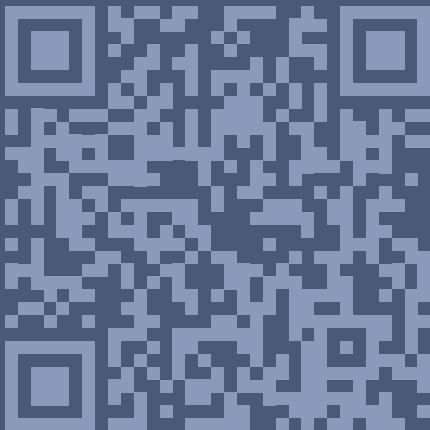
Once the burning has started, all participants must stay at least three meters away from the flames.



Fire is a powerful and educational tool, but it is also dangerous.
If these conditions cannot be guaranteed, the activity should not be carried out.

CREDIT

YMCA of the Rockies. 24 de maig de 2021.
Fire Ecology.



Pau Costa Foundation. 2024.
El bosc mediterrani, el foc i tu.

