

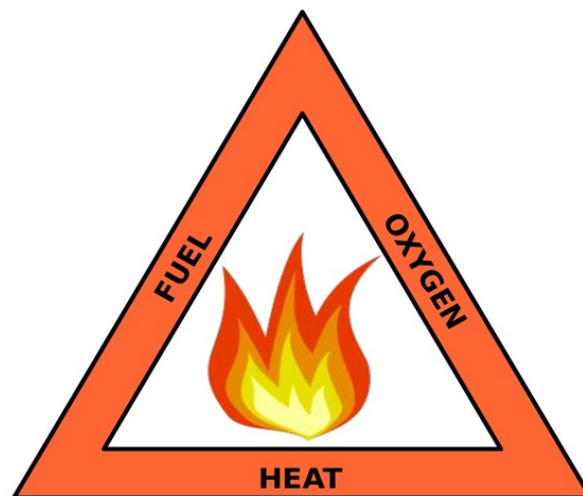


SIMPLE ECOLOGY:

Fire Ecology – the Fire Triangle & Fuel Types

The year 2020 was the toughest fire season in recent history, but the history of fighting fires in the Rocky Mountain West goes back many years. In 1910, large “conflagrations,” as they were called back then, occurred in Montana. The smoke carried all the way to the Eastern seaboard and alarmed people, resulting in a new forest management policy to “suppress” wildfire. Some say that this policy caused our forests to become heavily fueled so that the fires we see today are much worse than they naturally would be. Others blame the pine beetle infestation of the earlier 2000’s. These could all be factors in fuel loading.

Fire needs three things to burn: Fuel, Oxygen and Heat (or an Ignitor). Take any one of these out and you won’t have a fire. Our experiment will demonstrate the necessity of all 3 ingredients for a fire to burn. We will test 3 fuel types to see the intensity and longevity of the fire.



Materials:

3 mason jars – wide mouth is easiest (1 with a cover)

Playdough

1 potato chip

1 birthday candle

2 wood matches

1 fireplace match

Procedure:

1. Place a piece of playdough big enough to hold the chip, candle or match upright in the jar.
2. Put the potato chip in one jar, the candle in the second, and the match in the third.
3. Light the match and then put the cover on the jar. How quickly does the flame go out when you remove the oxygen?
4. Next light the potato chip and record the time it burns.
5. Light the candle and record the burn time.
6. Light the match and record the time.
7. Which will burn the longest?
8. Which will burn the most intensely?
9. Record the time each one extinguishes itself.
Were your predictions correct?
Why did one burn longer or more intensely than the other?
What was the fuel that was actually burning?