

## HOW TO PUT (1 of 3) A FIRE OUT

 20-25 minutes +  
questions and journal time

 Follow all safety instructions from LearnLibre.com  
during the experiment.

### **Before the Experiment**

Ask an Adult. This experiment should be performed by an adult who has read and understands all fire safety considerations found with this experiment at LearnLibre.com.

Watch Lesson



### **Materials**

- 6 matches (+ extra for mess-ups)
- 2 Long lighters
- 1 glass of water
- 1 empty glass
- Oven-bake clay (or a fireproof substance to hold your match)
- Contained fireproof surface
- Timer

### **Procedure**

#### **Part 1: Set-up**

1. Put a ball of clay on your fireproof surface.
2. You might want to find a helper to work the timer for you.

#### **Part 2: The Regular Match**

1. Stick the 1st match into the ball so that the head of the match is pointing up.
2. Use your lighter to light the match, and start your timer at the same time.
3. Stop your timer when the match stops burning, and write down the time.

## HOW TO PUT (2 of 3) A FIRE OUT

### Part 3: The Match You Put in Water

1. Stick the 2nd match into the clay so that the head of the match is pointing up.
2. Put your glass of water close to the match.
3. Use your lighter to light the match, and start your timer at the same time.
4. Carefully take the match out of the clay, and dip it in the water.
  - If you wait too long and cannot safely pick up the match, WAIT for it to burn out and try again.
  - If you can't get it out of the clay ball fast enough, you can light it on the side of a matchbox instead, and then put it in the water.
5. Stop the timer. Write down the time.
  - Did this take more time or less time to go out than the regular match?
  - What part (or parts) of the fire triangle did you take away?



### Part 4: The Match You Cover

1. Stick the 3rd match into the ball of clay so that the head of the match is pointing up.
2. Use your lighter to light the match, and start your timer at the same time.
3. Quickly put your empty cup over the match.
4. Stop your timer when the match stops burning, and write down the time.
  - Did this take more or less time to go out than the regular match?
  - What part (or parts) of the fire triangle did you take away?
  - Do you think anything would change if you used a different-sized container?

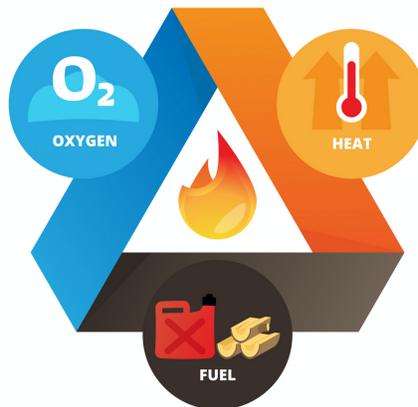
### Part 5: The Match You Break in Half

1. Break the 4th match in half so that it is shorter.
2. Stick the match into the ball of clay so that the head of the match is pointing up.
3. Use your lighter to light the match, and start your timer at the same time.
4. Stop your timer when the match stops burning, and write down the time.
5. Did this take more or less time to go out than the regular match?
6. What part (or parts) of the fire triangle did you take away?
7. What if you had a longer match? Do you think it would take more or less time to go out?
8. What if you had a thicker or thinner match?

## HOW TO PUT (3 of 3) A FIRE OUT

### Part 6: Optional Extension

Scan the QR code on the 1st page and go to this experiment for an optional extension where you will time how long it takes 4 different matches to go out.



### Questions

1. What happens when you take away part of the fire triangle?
2. Which strategy worked best for putting out the fire in this experiment? (Using water, covering it, or taking away some of the fuel). Do you think it is the same for all fires? What about wildfires? What about grease fires?
3. Was this experiment really an equal race?
4. Hint: Do you need exactly the same amount of each component in the fire triangle? Did we take away exactly the same amount of each component in our three tests?
5. How can you use what you learned from this experiment in the "real" world?

[See answers and learn more about how this experiment works by scanning the QR code at the top of the 1st page.](#)

### Clean-up

Wash and dry any tools you used, put materials back where you got them from, clean your work station.

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