



**High School Science Virtual Learning**

**Forensic Science**

**Arson**

**May 11, 2020**



# High School Forensic Science

## Lesson: April 29, 2020

### **Objective/Learning Target:**

Students will be able to assess a fire and see if there is enough evidence to suspect arson.

On your own sheet of paper answer the following:

1. What is a key ingredient that allows for a fire to continue to burn?
2. What are some things you would look for to see if someone purposely set a fire.





1. Oxygen
2. Ignition fluid and spark, odd placement in room or location, tools left behind, fabric left behind, etc.



## Lesson Activity:

**Directions:** You will be using the interactive lesson lab over how fires work and how they are used to identify arson. While watching and exploring, you will need to answer following practice questions, on the same sheet from earlier:

**Link(s):** [Fire Lab](#)     [Student notebook for Fire Lab](#)



# Practice

You will use the Fire lab sections 1-3 from the activity on slide 5 to answer the following questions.



# Practice Questions

1. What is fire?
2. What is pyrolysis?
3. What phase of matter can burn?
4. What are the three elements that must be present for a fire to start and continue burning?
5. If an ample amount of oxygen is present, when will a fire stop?



# Answer Key

Once you have completed the practice questions check with the work.

1. Fire is a gas-phase chemical reaction that emits heat and light
2. When heat converts solids into fuel gases
3. Gases, because solids and liquids break down into fuel gases when they are heated.
4. Heat, fuel, and oxygen
5. A fire will stop when there are no more combustible fuels or are completely consumed.





# More Practice

You will use the Fire Lab sections 4-6 from the activity on slide 5 to answer the following questions.



## More Practice Questions

1. Why would a fire go out if it is in a room?
2. In section 4, what are some types of evidence you found in that fire?
3. In section 6, where did the fire occur and did it spread?
4. What are some of the melted items in that room?
5. What was the cause of the fire and where was the origin?



# Answer Key

Once you have completed the practice questions check with the work.

1. Due to the lack of oxygen available in a ventilation-limited fire, a fire will die out before possible fuel is used.
2. Line of demarcation, char, pile of debris, radiant heat, melted form of plastic, thermal patterns,
3. The fire occurred in the kitchen, and did not spread.
4. Coffee pot, toaster, outlet, stove, and other unidentifiable electronics.
5. Caused by coffee pot being left on, and on countertop below the cabinet.



# Additional Practice

If you enjoyed learning about how fires spread and how to investigate them, here are some additional resources:

[UL Fire investigation](#)

[6 signs of Arson](#)

[Investigation: origin and cause](#)