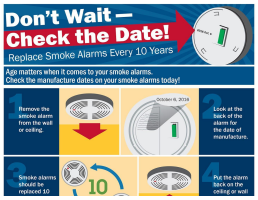
Name_____per___

Fire Forensics Investigation Day 2

October is Fire Prevention Month!
Learn how fires start and spread through an interactive investigation this week!

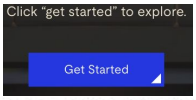


INVESTIGATORS ACADEMY

2 _Investigators Academy

What are the Components of Fire interactive

a What is fire?



Scroll to the **next interactive showing a sofa on fire.** Change the settings to observe for what and how much of each component is needed to ignite and sustain a fire.

9. Record your observations about the components of fire in the chart.

Trial	**Component(s)** Color in the bar to show the settings you tested.	**How much? (Ratio)** Use ratios to describe the setting you selected for each component.	**Observations & Explanation** What did you observe and how can you explain it.
1	Heat - ●● +	*2/2 or 2:2 or 2 out of 2*	***Example:*** *The fire did not light. There was no fuel, and fire needs fuel.*
	Oxygen - ● +	*1/2 or 1:2 or 1 out of 2*	
	Fuel - +	*0/1 or 0:1 or 0 out of 1*	
2	Heat - +		
	Oxygen - +		
	Fuel - +		
3	Heat - +		
	Oxygen - +		
	Fuel - +		
4	Heat - +		
	Oxygen - +		
	Fuel - +		
5	Heat - +		
	Oxygen - +		
	Fuel - +		

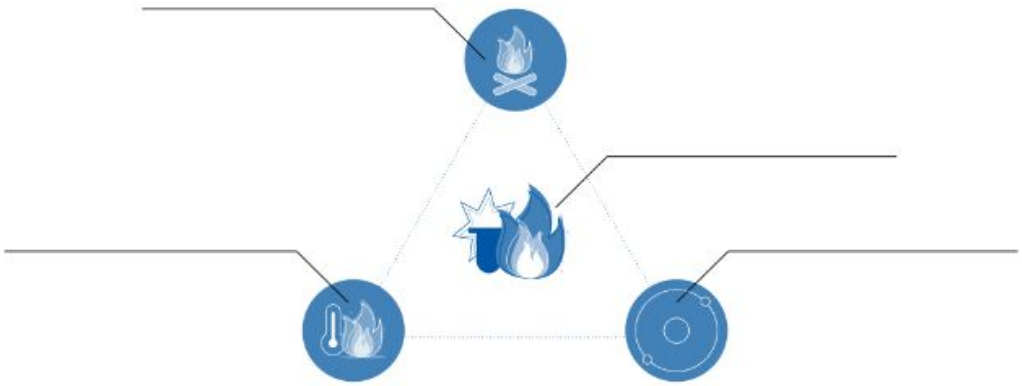
10. What is something new you learned about fire in this investigation?

The Fire Triangle

Scroll to information about **The Fire Triangle.**

11. Use the information from the text and graphic to complete the statements. Fire professionals call the components of fire the _____ _____. Fire needs exact _____ of _____, _____, and _____ to ignite and burn. Another word for fire is _____. The _____ _____ is the chemical reaction that includes all of the necessary amounts of fuel gases, oxygen, and heat.

12. Add labels identifying each component of the fire tetrahedron.



Challenge – connecting your knowledge to fire investigation.

How does this knowledge connect to firefighters and investigators work?

13. Investigators closely observe a room to identify potential sources of heat, fuel and oxygen. What are potential sources of these components of the fire triangle in the kitchen scene?What are potential sources of these components of the fire triangle in the kitchen scene?

14. Recall the kitchen scene from the beginning of the pathway. Describe some evidence you saw before, but now have a better way to explain? What new evidence stands out as being important?

15. **Sensemaking:** Revisit your initial model of fire. Reflect on what you have learned. What can add to your model that reflects growth in your understanding of fire and its components? Use a different color to make your new thinking visible.

How Does Fire Develop Interactive

b How does fire develop?

Scroll to the interactive where there is a **sofa on fire.** Use information from the interactive to gather information for how a fire develops.

1. Record your understanding of how fire develops in the chart below.

CLICK ON HOTSPOT 1 (1)	**IGNITION** When does fire ignite?	
CLICK ON HOTSPOT 2 (2)	**GROWTH** How can thermal energy transfer?	
CLICK ON THE PLUS (+)	Describe how heat can flow around the sofa.	
CLICK ON HOTSPOT 3 (3)	**FULL DEVELOPMENT** What is occurring when a fire is fully developed?	
CLICK ON THE PLUS (+)	Where was conduction evident? Where was convection evident?	
CLICK ON HOTSPOT 4 (4)	**DECAY** What evidence is left behind after a fire decays?	

2. What is something new you learned about fire from the interactive?

Fire development can be divided into four stages.

Scroll to the **red language accordion** to better understand the stages of fire development.

3. Using information from the accordion, identify the best explanations for each term or core idea.

_____ Ignition	a. longest stage of a fire
_____ Growth	b. combination of heat, fuel, and oxygen that results in fire
_____ Full Development	c. continuation of a fire based on presence of heat, fuel, and oxygen
_____ Decay	d. ignition of all combustible materials

Classroom Investigation: Heat Transfer & Ignition

Observe the classroom investigation.

Tomorrow you will investigate the 3 ways fire transfers energy. Draw a model that shows how you could show these different energy transfers using a **candle and a marshmallow.**

Conduction: heat transfer through touch or direct contact.	**Convection:** the transfer of heat from one place to another through the movement of a fluid or gas. (hot molecules rise and then fall through convection currents)	**Radiation:** the process of heat energy being transferred through space via electromagnetic waves.