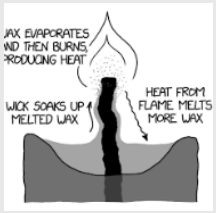
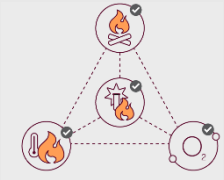
Fire and Molecular Motion

Using The Science of Fire Forensics resources, students explore interactive simulations to observe how **energy and matter flow within a system**. Classroom Investigations are also provided where students have the opportunity to **plan and carry out investigations** to explore the **interactions between energy and matter.** Over two units, students connect their exploration of fire to support understanding of matter and the transfer of heat. We will revisit and loop back on the experiences.

Instructional phases	Engage	Explore	Explore	Explore	Explain
Visual storyline					
Standards	MS-PS1-4., Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.				
Timing	One class period	One class period	One class period	Three class periods	Once class period
Overview	**Engage**: There has been a fire... Notice, Wonder, Initial Thinking Then, What do you already know (or think you know) about fire? As a group discuss. Students place their ideas on poster paper.	Students view a candle and create an initial group model of what is happening. In groups, students begin an initial model on poster paper of what is happening when a candle burns. Be sure to discuss components of a model with students. Students included prior knowledge of states of matter	Fire Triangle Investigation **Explore:** Students will explore the fire triangle in 4 mini explorations in which a leg of the fire triangle is eliminated (fuel, oxygen, heat)	Investigators Academy **Explore**: Students will explore the interactive models in the Investigators Academy	Is fire plasma? (This question stems from student wonderings in the “engage” phase) **Explain:** Students research plasma to determine if fire is plasma. A video and article supports student explanation of the candle burning. They return to their initial model and add new understandings
Supporting Documents	Pathway Intro Video		Fire Triangle Video	What is fire How does fire develop How does fire behave	Video Article