**Quick-Look Overview (Plain-English)**

**Big Idea**  
A campfire isn’t just burning stuff—it’s *processing information*.  
The shape of the fuel (think: the outline of a log or a sheet of wax) gets “read” by the flame.  
As the fire spreads, it turns that shape into a moving pattern of heat and light.  
The experiment tests whether you can reliably tell which shape you started with just by looking at the final heat pattern—while the overall disorder (entropy) always goes up.

**Why Care?**  
If fire really does this, it means even a destructive process can behave like a one-way computer.  
That would expand how we think about computing, energy use, and information loss—useful for everything from new sensor tech to theories about how complexity evolves in nature.

**How We Test It**

1. **Cut fuel into simple 2-D shapes** (triangles, spirals, QR codes).
2. **Ignite from one edge** so every run starts the same way.
3. **Film the flame and record its heat map** with a regular high-speed camera plus an infrared camera.
4. **Run software** that checks two things:
   * Does the video’s overall disorder always increase? (It should.)
   * Can a pattern-recognition script guess the original fuel shape just from the heat movie? (If yes, the flame kept some information.)

**What Pass/Fail Looks Like**

* **Pass 1:** Every burn shows higher entropy at the end than at the start.
* **Pass 2:** The computer can match heat-movies to fuel shapes better than random guessing.