



OHIO CSI FORENSIC DIVISION

UNIT 1 · MEDICAL INVESTIGATION · CASE STATIC

Period 1-2 · Statik Sound, a neighborhood recording studio

FORM NO. CSI-1-D12
CASE NO. JH-26-0831-A
REV. 2026-27
PAGE ____ OF ____

FOR EDUCATIONAL USE

OHIO CSI FORENSIC DIVISION

DO NOT DISTRIBUTE ANSWER KEYS

DAILY INVESTIGATION PACKET

Sep 25 · Investigation Day 12 of 18

OFFICIAL

THE BRIEFING: WHAT YOU ARE DOING TODAY, AND HOW THE PROS DO IT

SEC 00

Picking up from yesterday: you learned that an autopsy is the last physical exam, performed for the living as much as the dead: it answers the questions the body can still answer.

Real examiners estimate the time of death from three separate body clocks, how far it has cooled, how stiff it has become, and where the blood has settled, and they trust the window only where the three clocks agree. Today you read those same three clocks and state honestly what they cannot tell you.

OBJECTIVE

Today you will run the external examination and estimate time of death from three body clocks: cooling, stiffening, and blood settling.

Take-home (the ten-year idea): Three independent clocks, one window. When independent estimates agree, confidence is earned, not assumed.

CASE FILE UPDATE

SEC 01

External exam and the three body clocks. And the records pull arrives: the door access log, which has one strange row in it.

After death, the body changes on schedules, and schedules can be read backward. **ALGOR MORTIS**: the body cools from its normal living temperature (about 37 degrees C, 98.6 degrees F) toward room temperature, roughly 1 to 1.5 degrees C per hour early on (this course's working rule; real examiners use tables that adjust for body size, clothing, and the room). So the math is: (normal 37 minus the measured temperature) divided by the cooling rate gives roughly how many hours since death. Analogy: the coffee cup; touch it and you know roughly when it was poured. **LIMIT**: the room writes the schedule too: a warm room, clothing, or body size all bend the curve, so every algor estimate carries its assumptions, starting with that 37 degree normal.

RIGOR MORTIS: muscles stiffen as their chemistry runs down, beginning in small muscles within a few hours, peaking around 12, releasing over the next day. It is a timer you read backward from stiffness distribution. **LIMIT**: temperature and exertion before death shift it.

LIVOR MORTIS: blood settles to the lowest surfaces, showing as fixed purple discoloration after several hours. Livor tells time AND position: if the settled pattern does not match the found position, the body was moved, and that is a case-changing fact. **LIMIT**: dark skin tones and pressure points complicate the read.

The method: estimate a window from each clock separately, then intersect the windows. Independent agreement is the day's big idea, the same one that will close the whole case: one clock persuades, three clocks corroborate.

NEW VOCABULARY (RECORD IN YOUR NOTEBOOK BANK)

SEC 04

TERM	PLAIN-LANGUAGE DEFINITION	ANALOGY TO HOLD ONTO
algor mortis	body cooling after death, roughly on a schedule	the coffee cup cooling
rigor mortis	temporary muscle stiffening after death, comes and goes on a schedule	a timer you read backward
livor mortis	blood settling to the lowest points after death, fixed after hours	sediment settling in a bottle

THE DECISION OF THE DAY

SEC 03

YOUR ROLE

Team E leads; all teams compute.

THE SITUATION

The time-of-death worksheet in this pack carries the case's measured values: temperatures, stiffness observations, lividity pattern, plus the scene's ambient conditions.

THE RULE YOU APPLY

One window per clock, assumptions stated, then intersect. The final window is only as tight as the assumptions are honest.

WHAT YOU PRODUCE

Time-of-death worksheet: three windows with stated assumptions, the intersection, and one sentence on which clock you trust least here and why.

Claim ceiling. The window is an estimate with stated assumptions, not a fact. It constrains the timeline; it does not convict anyone inside it.

WHAT THIS UNLOCKS

Tomorrow: the full examination. Your window meets the door log tonight; check the timeline.

PLTW ANCHOR AND INTERACTIVE LAYER

REF

Activities 1.2.1 Anatomy of an Autopsy + 1.2.2 Time of Death (referenced by title only; all materials in this file are John Hay original work)

- **Vital Signs simulation** mendozabiomed.org/learn/lab-sim/pbs-vital-signs
- Portal: Vital Signs simulation (baseline concepts), day page, guided notes

myPLTW student access is down for technical reasons. When it is restored, this day's PLTW anchor is completed online; until then the portal simulation and these printed materials carry the day.

EVIDENCE RELEASED TODAY

SEC 07

Hand out only the exhibits listed for this day. Everything marked RELEASED DAY N stays restricted until then.

EXHIBIT 014 · Records thread

RELEASED DAY 12

Door access log, weekend (SIMULATED)



INVESTIGATION TEAM ASSIGNMENTS

SEC 05

A Scene and Documentation

Document the external exam demonstration; photo-log references.

B Trace

Compute the rigor window; state assumptions.

C Serology and DNA

Compute the algor window; state assumptions.

D Toxicology and Chemistry

Compute a second algor window with a different assumed start temperature; brief the difference.

E Medical Examiner

Lead the worksheet. Body at room temperature + rigor passed + livor fixed: each clock gives a window; intersect them. Expected honest answer: death occurred at least a day or more before discovery; the clocks cannot pin an hour this late, and SAYING so is the correct finding.

F Records and Timeline

Door log to the timeline: Bell entered alone Sat 2:15 PM and no fob entry follows. Flag the 3:00 AM DOOR HELD row as an open question, not a conclusion.

NOTEBOOK PAGES IN USE TODAY

SEC 06

- Time-of-death worksheet organizer
- Manner-of-death logic tree (opens today, all branches live)
- Day 12 Cornell page

DAILY SUBMISSION FORM: TIME-OF-DEATH WORKSHEET

JH-26-0831-A / D12

- ☐ Three windows with assumptions
- ☐ Intersection window
- ☐ Least-trusted clock sentence

INVESTIGATOR (PERIOD + CODE, NO
NAMES)

TEAM

TIME SUBMITTED