

The big take-homes, and where they go next

One durable idea per section, its transfer beyond forensics, and the observable behaviour that shows a student has it.

WHAT THIS DOCUMENT IS FOR

The details of any one test will fade. What should survive is the reasoning. Each row below names the one idea a section is built to leave behind, where it transfers outside forensics, and what a student would visibly DO if they actually had it. Use the last column when you are deciding whether a student understood or just complied.

Section	The one idea	Where it is taught	Where it transfers	How you would know a student has it
Method Card 1, fingerprints	You cannot compare a feature you cannot name.	FP-2, naming eight features before any comparison	Any field where you have to describe before you judge: reading an x-ray, grading an essay, diagnosing a fault in an engine. Vocabulary is not decoration, it is the tool that makes the comparison possible.	The student names a feature by type rather than pointing and saying 'that bit there'.
Method Card 1, step 1	Look at the unknown before you look at the answer.	Covering the exemplar; releasing evidence coded before named	Grading blind. Reviewing a resume with the name removed. Running an experiment where the person measuring does not know which group is which. The order of looking changes what you see.	The student writes the description of the unknown FIRST and can show it was written before the comparison.
Calibration labs, all three	Your own error rate is a number you can measure.	FP-3, HR-3 and PG-4 confusion matrices	Any claim about how good you are at something. A coach who times you. A study that reports its own false positive rate. The difference between feeling accurate and being measured as accurate.	The student can state their own hit and false alarm counts with a denominator, without being prompted for the denominator.

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Calibration labs, rule locking	Decide the rule before you see the answer.	Every locked-rule box	Pre-registering a hypothesis. Setting a price before you fall in love with the house. Writing the grading rubric before reading the papers. A rule chosen after the fact can always be made to fit.	The student's locked rule sheet is dated before the reveal, and they can say what it cost them on at least one item.
Calibration labs, inconclusive	Not knowing is a real answer and it is not a failure.	Inconclusive rows in FP-3, HR-3, PG-3, and BS-6 in the extension	Medical tests that come back equivocal. A jury that cannot decide. A poll with a margin of error wider than the gap. The pressure to produce a tidy answer is exactly the pressure that produces wrong ones.	The student writes inconclusive without hedging or apologising, and gives the reason in terms of the evidence rather than their own uncertainty.
Method Card 3 and PG-1	Read the scale before you read the shape.	PG-1's three views of identical data	Every chart in a news story. A graph with a truncated axis. Two schools compared on differently scaled scores. A shape is meaningless until you know what one unit is.	The student states an axis range out loud before commenting on a trend, in a context where nobody asked them to.
Method Card 2 and HR-4	Things from one source vary, so 'these look different' is weak evidence.	HR-4, six hairs, five from one head	Two blood pressure readings from one person. Two test scores from one student. Two thermometers in one room. Within-source variation is real and it sets a floor on what any difference can mean.	The student asks how much the KNOWN sample varies before drawing a conclusion from a difference.
Module 4, time of death	A result is a range, and methods that fail differently do not stack their errors.	The three clocks and the overlap table	Any estimate: a delivery window, a cost projection, a weather forecast, a medical prognosis. A single number with no range is either a measurement of something trivial or a claim someone has not thought through.	The student reports an interval rather than a point, and can name which assumption is most likely to be wrong.
Module 6, blood and DNA	Exclusion is strong. Inclusion is weak. Always ask for the denominator.	The ABO plate, where two of five people share the scene type	A test that says you might have a condition. A profile that matches a suspect. A trait shared by millions. The question is never 'does it match' but 'how many others would also match'.	The student converts an inclusion into a fraction of the population before saying what it supports.

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Module 7, toxicology	Presence is not cause, and you may not read past your standards.	The off-scale unknown and the below-range unknown	A drug in a blood test. A chemical detected in water. A word found in a search. Detecting something says it is there. It does not say how much, how it got there, or what it did.	The student refuses to extrapolate, and separates 'detected' from 'quantified' without being reminded.
Module 8, histology	One field of view is not the organ, and no visible change yet does not mean no injury.	The eight sections, two of which are the same tissue	One customer review. One data point. One symptom. Sampling decides what you can conclude, and a change that takes time to appear will look like nothing if you look too early.	The student asks for more sections, or says the section is not diagnostic, rather than forcing an answer.
Module 9, case closed	Cause, mechanism and manner are three different questions.	The three-part conclusion and the refutation table	Why did the company fail, what actually killed it, and was it anyone's fault. Why did the patient get worse, what stopped working, and was it avoidable. Collapsing three questions into one is how blame gets misassigned.	The student answers all three separately, and can name a finding that would have refuted their own conclusion.
The timeline	Say how you know, not just what happened.	The schedule versus sighting versus verified columns	A news report that says 'sources say'. A calendar invitation treated as attendance. A quote repeated until it becomes a fact. The provenance of a claim is part of the claim.	The student marks a row as a schedule rather than an event, unprompted, and notices when two items trace to one person.
The whole unit	Repeating a measurement fixes random error. It does nothing to a method that is wrong the same way every time.	The error-source table, and the three independent clocks in Module 4	Averaging a miscalibrated scale. Asking the same biased question to more people. Running a flawed study again. More data helps only when the errors are independent.	The student distinguishes 'do it again' from 'do it a different way' and picks the right one for the error in front of them.

What this prepares students for later

Every idea above outlives the case. Here is where each one reappears in courses and work students may actually meet.

Later, in	What they will already have
Human Body Systems, Medical Interventions, Biomedical Innovation	The claim ceiling habit, the range instead of a number, and the discipline of naming what a test cannot show. Medical Interventions leans on it hardest, because diagnostic tests there have real false positive rates.
AP Biology and any lab science	Standard curves, interpolation versus extrapolation, controls, and the difference between random and systematic error. The toxicology module is a standard curve in every meaningful sense.
Statistics	Confusion matrices, base rates, denominators, and why an inclusion is weak when the trait is common. Students will have built a confusion matrix from their own decisions before they ever see the term.
Any college lab course	Recording what you did before you know whether it worked, keeping a notebook someone else could follow, and reporting a result you did not want.
Reading the news, and voting	Reading the axis. Asking for the denominator. Noticing when four sources trace back to one press release. Knowing that a study reporting no effect is not the same as a study that was not run.
A medical appointment, for themselves or a family member	Asking what a test can and cannot show, what the false positive rate is, and what would change the answer. This is the transfer that matters most and it is the one nobody teaches directly.

IF YOU ONLY ASSESS ONE THING

Ask a student to state a conclusion, then ask what evidence would have changed it. A student who can answer that has the whole unit. A student who cannot has been performing science rather than doing it.