



LogicQuest — The Case of the Vanished Golden Gavel

A self-checking logic gamebook — no pencil, no peeking. Follow the arrows. Every wrong turn is a fallacy you'll learn to dodge.

Reasoning detective on duty: _____

How this gamebook works

This is a gamebook, not a worksheet. You do **not** write in it and you do **not** read it straight through. Instead you make a **logical call**, and the arrow tells you which **Station** to turn to next. Make the careful deduction and you move forward through the case. Jump to a hunch and you land in a **Dead End** — a quick, friendly page that names the **fallacy** you just fell for, then bounces you right back to try again. Nobody grades you. Landing in a Dead End is not losing — it is how real thinkers learn to spot a bad argument. The sharpest logicians in this club fell for every trap at least once.

1. Read the **Case Brief** first, then turn to the Station it sends you to.
2. At each Station, read the argument and pick the call a careful logician would make.
3. Follow the arrow on your choice: → **turn to Station 6** (keep going) or → **turn to Dead End D2** (a fallacy you fell for).
4. A Dead End is never the end — it names the trap, then sends you back. Keep going until you reach **The Verdict**.
5. **No pencil.** The stations are scrambled on purpose, so you cannot cheat by reading the next page. Only the arrows know the way.

Meet your detectives

Detective	Their move	What they do
Inspector Logos	Frame the argument	Your mentor. She sets up every case and asks the reasoning move back at you — she never hands you the answer.
Disjunctive-Syllogism Dior	Rule one out	When it's this-or-that-or-that and you can rule one out, the rest stays standing. P or Q or R; not R; so P or Q.
Modus-Ponens Mo	Follow if–then	If P then Q; P is true; so Q must follow. He traces what a rule forces to be true.
Modus-Tollens Tara	Run it backwards	If P then Q; but Q is false; so P must be false too. She clears a suspect by the missing consequence.
Syllogism Solon	Chain it airtight	All M are P; all S are M; so all S are P. He chains two 'all' rules into one gap-free conclusion.
Red-Herring Reggie	Weigh the shiny clue	He spots the clue that glitters but leads nowhere, and sets it aside before it derails a clean proof.
False-Dichotomy Fia	(a trap to dodge)	Whispers 'there are only two choices!' when there are really more — and evidence, not a coin-flip, decides.
Ad-Hominem Hannibal	(a trap to dodge)	Attacks the arguer instead of weighing the argument — a show-off can still have an airtight alibi.

Detective	Their move	What they do
Bandwagon Bran	(a trap to dodge)	Says it's true because everybody thinks so — but a crowd believing a thing proves nothing.
Equivocator Eva	(a trap to dodge)	Slides one word's meaning mid-argument — like using 'key' for both a room-key and a case-key.

How this gamebook works

The Case Brief

The Stations

Dead Ends

The LogicQuest Case Files

 Sealed Case File

For the grown-up

Your badge

The Case Brief



Inspector Logos sets the scene

The Debate Club's proudest trophy — the **Golden Gavel** — sits in a locked glass **trophy case** in the clubroom. At **4:00**, when practice ended, the whole club saw it gleaming on its shelf. By **8:00 the next morning** the shelf was **empty** — the Gavel was gone, and the case door hung **open**. Only three club members carry a clubroom key: **Ada, Ben, and Cass**. One of them took the Gavel. Inspector Logos snaps her notebook shut. "We will not *guess*," she says. "We will *deduce* — one solid step at a time, and we will name every step out loud."



Predict first

Before you weigh a single clue, make a **prediction** — just a hunch. Ada, Ben, or Cass? Hold it in your head. A good logician predicts first, then lets the argument change her mind. That is how you catch your own bias before it catches you.

→ **turn to Station 4 to begin.**

The Stations

Follow the arrows. The numbers are out of order on purpose — only the arrows know the path.

1

RULE OUT

This, That, or the Other

 **Disjunctive-Syllogism Dior** leads

"When it is **Ada or Ben or Cass**, and you can **rule one out**, the others stay standing — that's my move," says Disjunctive-Syllogism Dior. She pins up the **away-tournament bus roster**, machine-stamped by the driver's tablet: "*Cass — BOARDED 4:30 PM · RETURNED 9:00 PM.*" "A stamped roster is a record, not a story," Dior says. "Cass was on a bus, miles away, from 4:30 until 9 — the whole window the Gavel vanished. What does that do to our three boxes?"

? The roster stamps Cass out of the building 4:30–9:00 PM — the entire window. It's Ada, Ben, or Cass. What follows?

Rule out Cass — she could not be in two places at once, and a machine stamp is not a guess. That leaves [→ turn to Station 6](#)
Ada or Ben still standing. Keep going.

Cass is always bragging about winning that Gavel — a show-off like that? Obviously guilty. [→ turn to Dead End D2](#)
Accuse Cass.

Modus-Tollens Tara leads

"My move is the **flip side** of if-then," says Modus-Tollens Tara. "*If* you took the Gavel, *then* you opened the case — because the Gavel was locked inside it. Now watch what happens when the *then* turns out **false**." She lays out the key logs. Everyone has a **room-key** (that opens the *door*). But the trophy **case** opens only with the one **brass case-key** — and the sign-out sheet shows **Ada never held it**. "So Ada **could not open the case** — the *then* is false for her. If took $\Rightarrow$ opened, and Ada didn't open... finish it."

? Rule: *if you took the Gavel, then you opened the case.*
Ada could not open the case (she never had the brass case-key). What follows?

Then Ada did not take it — *if took, then opened; not opened, so not took*. Cass is out, Ada is out — only | → turn to **Station 3**
Ben's box is still standing. Keep going.

But Ada has **a key!** She could just unlock it and grab the Gavel — **accuse Ada**. | → turn to **Dead End D4**

 Red-Herring Reggie leads

"Careful — here comes a **shiny** one," grins Red-Herring Reggie. Someone points out that **Ben got a detention last week** for talking in class. "Ooh, a *troublemaker*!" the room murmurs. Reggie holds up a hand. "That is my whole specialty: a clue that **glitters but leads nowhere**. Does a detention for *talking*, last week, tell us **anything** about who opened a locked case **this** week?" He waits. "We already deduced Ben from the **key log** — the hard evidence. Do we need the detention, or is it a distraction?"

? Ben's past detention was for talking, last week — nothing to do with the case or the keys. Should it change the deduction?

Set it aside — it's a red herring. The detention names no key, no case, no time. The *deduction* already named Ben; a shiny distraction cannot add to a clean proof. Keep the hard clue. Move on. → turn to **Station 5**

A troublemaker is a troublemaker! The detention proves Ben is the type. Forget the keys — pile on the detention. → turn to **Dead End D5**



Inspector Logos leads

Logos draws three boxes on the whiteboard — **Ada • Ben • Cass** — and one arrow pointing at them: *one of these three took the Gavel*. "Here is our whole job," she says. "Knock down every box that **cannot** be true, with a **reason from the evidence**, until exactly **one** box is left standing. Never a feeling. Never 'they seem the type.'" She taps the empty case, its door swinging open. "So — first question: is there even a case to solve here, or should we call it an accident and go home?"

? The Gavel was on its shelf at 4:00 and gone by morning, and the locked case is standing open. What is the sound first move?

Someone opened the locked case and took it —

a locked case does not open itself, and a Gavel does not walk. There is a real case; start knocking down boxes. Keep going.

| → turn to **Station 1**

Meh — **either it was a huge crime or it was**

nothing, and I pick nothing. It probably just rolled behind the shelf. Case closed, go home.

| → turn to **Dead End D1**

**Syllogism Solon** leads

"One move left — mine **locks** it," says Syllogism Solon. "I chain two **all** rules into one. Rule one: **all** who took the Gavel opened the case. Rule two: **all** who opened the case signed the brass-key log. Now read the log." He turns it around. The brass-key log has exactly **one** name on it that day — **Ben**. "Chain them: takers $\Rightarrow$ openers $\Rightarrow$ key-signers. The only key-signer is Ben. So the taker **is** Ben. That is not a hunch — it is a chain with no gap."

? This one has no wrong turn — it just snaps the chain shut. Follow the syllogism to the only name it can end on.

Takers $\rightarrow$ openers $\rightarrow$ key-signers, and the only key-signer is Ben — so the taker is Ben. Airtight, | $\rightarrow$ turn to Station 7 no gap. Turn to The Verdict.



Modus-Ponens Mo leads

"My move is **if-then**," says Modus-Ponens Mo. "*If* you signed out the brass case-key, *then* you could open the trophy case." He holds up the **case-key sign-out sheet**, stamped by the front-office scanner: the single brass **case-key** was signed out at **4:50** and returned **6:15** — by **Ben**, and **only** Ben, all day. "The rule is *if key, then can-open*. Ben pulls the *if* true — he signed out the key. So what *then*?"

? Rule: *if you signed out the case-key, then you could open the case*. Ben signed out the case-key. What follows by if-then?

Then Ben could open the case — he had the *means*. That does not convict him yet; it just keeps his box standing. Keep going — we still have to clear Ada. → turn to **Station 2**

Everyone already says it's Ben, and now he's got the key too — that is *settled*. Skip the rest and → turn to **Dead End D3**
name Ben right now.

The Verdict — but read it twice



Inspector Logos leads

You did it, logician. Inspector Logos lifts one last confirming clue: a sticky note left on the empty shelf — *back soon* — in the **left-slanted capitals Ben always prints** (Ada writes round cursive; Cass was not even in the building). "The writing agrees with the chain," she nods. Then she reads her whole write-up aloud:

*"The Gavel was on its shelf at 4:00 and gone by morning. The **bus roster cleared Ada** — she was stamped miles away until 9. Ben pulled the if-then true: he signed out the only case-key, so he could open the case. And Modus Tollens cleared the last box — the suspect with no case-key could not have opened the case. That leaves exactly one name. **Ben took the Golden Gavel.**"*

Logos sets down her pen. "A real logician always re-reads her own argument for a slipped word. **One line** in what I just read pins the wrong name to the wrong reason. Find it before you sign the file."



Spot the slip

Read Logos's write-up again, slowly. One line matches a name to the wrong reason. Which is the planted mistake?



Once you have caught the planted mistake, your case is closed. Turn to the Case Files to check your whole path.

I named **Ben** and I caught the "**bus cleared Ada**" → **it cleared Cass slip. Case solved!**
(Check yourself in the Case Files.)

→ check the **Case Files**

Dead Ends

A Dead End is never the end — it shows you the clue you skipped, then sends you back. No shame, no marks.

D1 **Whoops — the Case of the Only-Two-Choices**

You said it was **either a huge crime or nothing** — and picked nothing. But those are not the only two options, and a Gavel does not vanish from a **locked** case while the door swings **open**. "Only two choices!" is the **false-dichotomy** trap — real life has more, and **evidence**, not a coin-flip, decides between them. There is a case here. → **Go back to Station 4** and set up the argument.

D2 **Whoops — the Case of the Braggy Suspect**

You accused **Cass** for *bragging*. But attacking someone's **personality** is not weighing the **argument** — that is the **ad-hominem** trap. And the machine-stamped bus roster puts Cass **miles away** the whole window; a show-off can still have an airtight alibi. Rule Cass out by the **record**, not the attitude. → **Go back to Station 1**.

D3 **Whoops — the Case of the Hasty Crowd**

You named Ben because "**everyone says so**" plus he had the key. But *lots of people believing a thing* proves nothing — that is the **bandwagon** trap. And having the **means** (the key) is *necessary*, not *enough*: you still have not ruled out **Ada**. A box left unchecked is a gap in the proof. → **Go back to Station 6**.

D4 **Whoops — the Case of the Sliding Word**

You said Ada has "**a key**," so she could open the case. But watch the word **key** slide: Ada has a **room-key** (opens the *door*) — she does **not** have the brass **case-key** (opens the *case*). Using one word for two different things is the **equivocation** trap. No case-key, no open case — so Modus Tollens clears Ada. → **Go back to Station 2**.

D5 **Whoops — the Case of the Shiny Detention**

You piled onto Ben's **detention**. But a detention for **talking**, last week, says nothing about who opened a locked case this week — that is the **red herring** you were warned about: shiny, but it leads nowhere. The **key log** already named Ben; a distraction cannot strengthen a clean proof. → **Go back to Station 3.**

The LogicQuest Case Files



The detective's notebook — only for after you finish

The reasoning notebook — check your path here, in order. If your route matched this, you cracked it clean. If you took a Dead End or two along the way, that is exactly how it is supposed to work — you met a fallacy and learned to name it.

1. **Case Brief → Station 4.** Gavel on the shelf at 4:00, gone by morning, locked case standing open. Suspects: Ada, Ben, Cass. We deduce, we do not guess.
2. **Station 4 — Inspector Logos (set up the argument):** a locked case does not open itself $\Rightarrow$ someone opened it and took the Gavel. There is a real case; knock down boxes with reasons. $\rightarrow$ Station 1.
3. **Station 1 — Disjunctive-Syllogism Dior (rule out):** the stamped bus roster puts **Cass** away 4:30–9:00 $\Rightarrow$ **Cass ruled out.** Ada or Ben left standing. $\rightarrow$ Station 6.
4. **Station 6 — Modus-Ponens Mo (if–then):** *if signed the case-key, then could open*; Ben signed $\Rightarrow$ **Ben could open** (the means). Not proof yet — Ada is still standing. $\rightarrow$ Station 2.
5. **Station 2 — Modus-Tollens Tara (not–then):** *if took, then opened*; Ada had no case-key $\Rightarrow$ could not open $\Rightarrow$ **Ada did not take it.** Only **Ben** is left. $\rightarrow$ Station 3.
6. **Station 3 — Red-Herring Reggie (weigh it):** Ben's past detention is a shiny distraction — it names no key and no time; set it aside, keep the hard clue. $\rightarrow$ Station 5.
7. **Station 5 — Syllogism Solon (lock it):** takers $\Rightarrow$ openers $\Rightarrow$ key-signers, and the only key-signer is Ben $\Rightarrow$ **the taker is Ben.** Airtight, no gap. $\rightarrow$ The Verdict.
8. **Station 7 — Inspector Logos (the verdict):** Ben's left-slanted writing agrees with the chain; the write-up plants one swapped name to catch. **Ben took the Golden Gavel.**

Why each Dead End was a Dead End:

- **D1:** "Either a huge crime or nothing" is a false dichotomy — a locked case standing open means someone opened it; evidence decides.

- **D2:** Attacking Cass for bragging is ad hominem; the stamped bus roster is what actually clears her.
- **D3:** "Everyone says so" is bandwagon, and the key is only the means — Ada still had to be cleared before naming Ben.
- **D4:** "Key" slid from room-key to case-key — equivocation; Ada had no case-key, so Modus Tollens clears her.
- **D5:** A past detention for talking is a red herring — it names no key and no time, and cannot strengthen a clean proof.



The planted slip

In The Verdict, Inspector Logos wrote "**the bus roster cleared Ada**" — the bus roster cleared **Cass** (stamped away 4:30–9:00 at Station 1). **Ada** was cleared by **Modus Tollens** (no case-key). That is the planted slip. Culprit: **Ben**.



Sealed Case File

GROWN-UP PAPERWORK — BORING! LOGICIANS, SKIP THIS PAGE.

(Psst — grown-ups, this page is for you. The 'skip it' label is a friendly trick so the young logician owns the case.)

If they get stuck at a Station: do not give the answer. Ask the cast member's move back — 'What does a stamped bus roster do to our three boxes?' (Dior) or 'If took-then-opened, and Ada could not open... what follows?' (Tara). The **reasoning move**, not the answer, is the point.

When they land in a Dead End: celebrate it. 'Nice — you spotted a real fallacy from the inside.' Committing a fallacy and then being shown its name is the fastest way to learn to dodge it. Zero shame here.

Name the moves out loud: 'That was Modus Tollens' or 'that was the red-herring trap.' Naming a logical form is exactly what lets it transfer to a debate, a science claim, or an online argument.

After the case: ask 'How did you catch the swapped name in The Verdict?' Auditing your own conclusion against the step that actually earned it is the single most transferable habit in the book.

For the grown-up

This gamebook practices real deductive reasoning — disjunctive syllogism, modus ponens, modus tollens, and a two-rule syllogism — plus spotting five everyday fallacies (false dichotomy, ad hominem, bandwagon, equivocation, red herring), all inside a low-stakes clubroom mystery. There are no scores and no red marks; a wrong turn routes to a friendly Dead End that names the fallacy and bounces back, so every choice ends in understanding rather than a grade. Every deduction is forced by the case's own stated records — no outside facts required.

Wrong turns are the design, not a failure. Each wrong choice IS a named fallacy, and its Dead End explains the trap from the inside, then bounces back. That removes the fear of making a call — which is exactly when reasoning grows — and teaches fallacies more durably than a definition list ever could.

One case, many logic moves. Each Station is led by a cast member whose behaviour IS one logical form (Dior = disjunctive syllogism, Tara = modus tollens, Solon = the two-rule syllogism). Naming the move ('that was modus tollens') is what carries it out of the book into debate, science, and everyday argument.

Necessary vs. sufficient. Station 6 gives Ben the key — the means — but deliberately does NOT convict him; the bandwagon Dead End teaches that having the means is necessary, not enough, and every other box must still be ruled out. That distinction is the heart of fair reasoning.

The verdict teaches self-checking. The planted-error finale asks the logician to audit a correct-sounding argument and catch the one line that pins a right conclusion to the wrong reason. Checking each claim against the step that actually earned it is the most transferable habit in the book.

Your badge



Certified Clear Thinker

This certifies that Detective

cracked *The Case of the Vanished Golden Gavel* — ruled out a suspect by disjunctive syllogism, traced the means with modus ponens, cleared a suspect with modus tollens, set aside a red herring, locked the chain with a syllogism, and caught the planted mistake.

— *Inspector Logos, Debate Club Reasoning Lab*

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