

ProofQuest — Concept Poster

Print this and pin it up — an at-a-glance map of the ProofQuest cast and the ideas each one carries. Come back to it whenever you want to remember who teaches what.

Spark & Anvil is a 501(c)(3) public charity. Every app, story, and book is free, forever — no ads, no in-app purchases, no tracking. Released under Creative Commons BY-NC-SA 4.0 for educational reuse.

Meet the cast — and what each one teaches

Character	What they carry
Direct-Proof Dora	Direct proof: assume premises, derive conclusion by straightforward logical steps
Induction Ida	Weak / standard mathematical induction: base case + inductive step
Strong-Induction Sten	Strong induction: base case + assume all prior cases hold
Contradiction Cassius	Proof by contradiction (reductio ad absurdum): assume the negation, derive a contradiction
Contrapositive Cara	Proof by contrapositive: prove " $\text{not } Q \rightarrow \text{not } P$ " to establish " $P \rightarrow Q$ "
Construction Cole	Proof by construction: prove existence by explicit construction of an example
Pigeonhole Perch	Pigeonhole principle: if $n+1$ items are placed in n bins, at least one bin contains $2+$ items
Exhaustion Edda	Proof by exhaustion / cases: enumerate every case and verify each
Counterexample Cricket	Disproof by counterexample — one exception topples a universal claim
Biconditional Bex	Biconditional proof — proving 'if and only if' in both directions
Uniqueness Una	Proof of uniqueness — suppose two, show they must be the same one
QED	Closing-mark mentor — the ■ at the end of every proof; the gentle voice that names completion + invites the next problem

Key ideas at a glance

The big concepts this cast helps you master:

- Logic
 - Patterns
 - Deductive Reasoning
 - Inductive Reasoning
 - Mathematical Arguments
 - Visual Proofs
 - Famous Problems
 - Proof Techniques
 - Mathematical Proofs
-

Keep exploring online

- **Play it now:** <https://sparkanvil.org/play/proofquest>
- **Meet the cast:** <https://sparkanvil.org/cast/proofquest>
- **More free books:** <https://sparkanvil.org/books>