

# CQE with Two Decks — The 90-Second Hook

Props: red deck (ordered), blue deck (shuffled), marker, four sticky notes ( $\spadesuit \heartsuit \diamond \clubsuit$ ), one index card with four boxes.

Script:

- Red deck = FORM (fixed geometry). Spread it by suit A→K.
- Deal 8 blue cards into two lanes (odd=FWD, even=INV) and onto suit stickies ( $\spadesuit \heartsuit \diamond \clubsuit$ ). That's 8 views.
- Mirror test: read INV→FWD in symmetric suit order ( $\spadesuit \clubsuit \diamond \heartsuit | \heartsuit \diamond \clubsuit \spadesuit$ ). If mismatch: on tiny local fix ( $\Delta$ -lift), then re-mirror.
- Commit: tick 4 boxes: Mirror, Suit, Parity, Generalize (pull 2 fresh cards). Hand them the card = portable receipt.

Line: "We didn't overfit the blue deck; we forced it to pass the red deck's geometry. Geometry first, tiny local repairs, receipts."

## Why 8 Views? (the $n=4 \rightarrow n=5$ hinge)

Lay A-4 in a palindromic  $4 \times 4$ .  $n=4$  has a unique mirror-locked rest. Insert '5': exactly eight legal insertion classes remain under parity + mirror. That's your octet.

Takeaway: 8 isn't a style choice – it's the minimum independent coverage forced by parity geometry.

# Mapping Cards $\leftrightarrow$ AI Internals

Red order (form)  $\rightarrow$  invariant geometry (symmetries/constraints).

Blue stream (meaning)  $\rightarrow$  raw tokens/data.

Odd/Even  $\rightarrow$  parity lanes (forward/inverse, causal/anti-causal).

Suits  $\rightarrow$  independent views (modalities, slices, safety rails).

Face cards  $\rightarrow$  observers (tests/critics) with scoped powers.

Jokers  $\rightarrow$  cross-domain couplers (subharmonics/Cartan links).

4-bit receipt  $\rightarrow$  auditable commit: Mirror | Suit | Parity | Generalize.

## Three Promises

- 1) No one-way bias:  $\text{forward} \circ \text{inverse} \approx \text{identity}$ .
- 2) Coverage, not vibes: pass only when all 8 views agree.
- 3) Monotone progress:  $\Delta$ -lifts reduce local debt without regressions.

## Quick Domain Examples

Chat safety: suits={harmlessness, helpfulness, repetition, privacy}. Lanes=train/eval swap. Allowed  $\Delta$ -lift: one rephrase/redaction. 4-bit receipt = portable proof.  
Vision: suits={illumination, viewpoint, occlusion, background}. Failures light one bin; repair there, not everywhere.

## **Pocket Checklist (Run It Anywhere)**

- 1) Red deck face-up by suit (form).
- 2) Deal 8 blue cards → odd/even lanes → suits (octet).
- 3) Mirror readout (INV→FWD, symmetric suits).
- 4) If mismatch: one Δ-lift (lane swap or within-suit rotate).
- 5) Re-mirror; if pass: tighten rule for next round.
- 6) Stamp 4 bits; hand over the receipt.