CQE Card Kit (Paper-Only)

Refined printable kit • Decks • Overlays • Loom • Stations • Ledgers

What this is: A complete, no-power toolkit to run CQE with paper, pens, a ruler, tape, balsa sticks, and decks of cards.

What you can do: Model multi-view problems; enforce mirror tests; perform local Δ-lifts; tighten strict thresholds; and ledger reproducible 4-bit commits.

How to print: Print single-sided. Use card sleeves or 65lb cardstock for cards. Use transparent sheets for overlays.

Quick Start

10-minute run with two decks + overlays

1) Deal primitives: Aces = primitives. Write domain glyphs on them.
2) Synthesize: 2s–8s: build ideas by same-suit (local) or parity-suit (cross) combos.
3) Octet overlay: Fill H1–H8 views; record REST constraints.
4) Mirror test: Forward■Inverse ≈ identity. Mismatch → red Δ-lift card.
5) Strict ratchet: Tighten thresholds only after a pass (gold sticker).
6) Receipts: Shade a 4-bit commit; log votes/hashes in the ledger.
7) Iterate: Promote validated cards to your deck top; archive non-working slips.

Your first problem setup (tokens, views, mirror, strict)

Octet Overlay + DNA-10

Eight views + palindromic rest; ten-state save

H1

H2

H3

H4

H5

H6

H7

H8

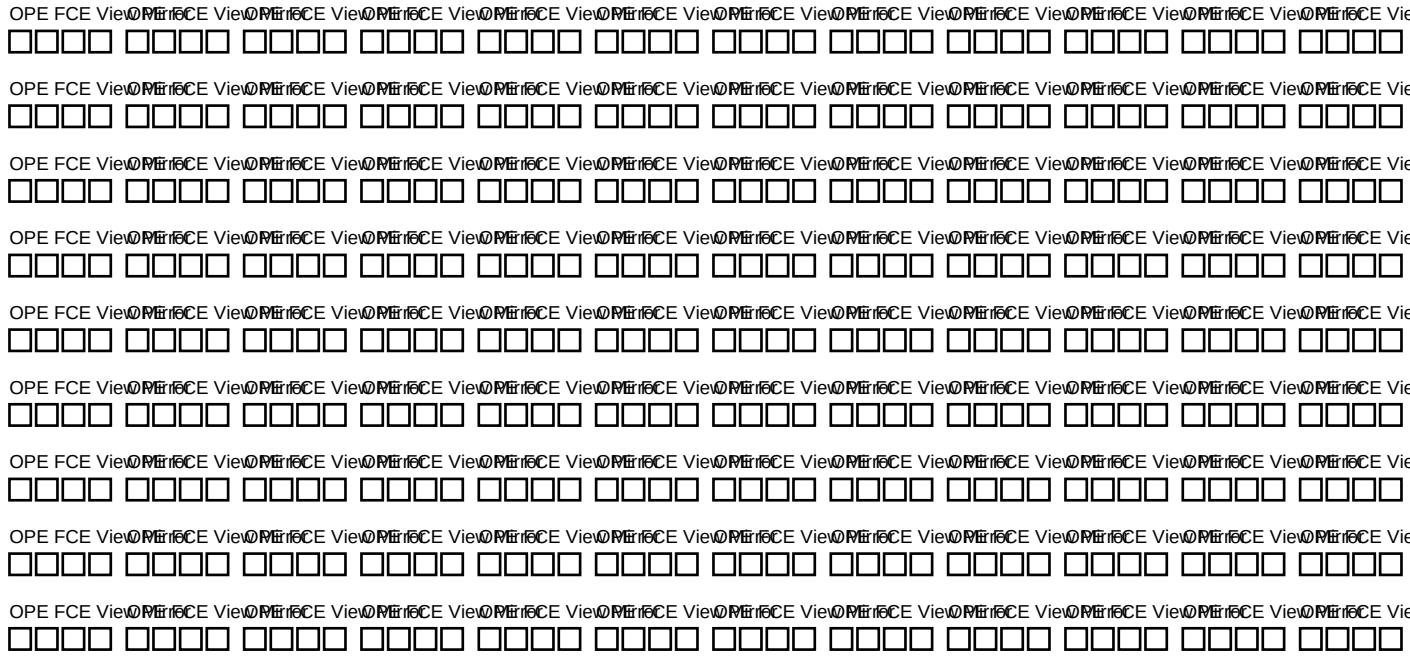
REST (palindromic mirror): notes / constraints

1. **Timing** _____
2. **Polarity** _____
3. **Scale** _____
4. **Pose** _____
5. **Domain** _____
6. **Conditioning** _____
7. **Units** _____
8. **Precision** _____
9. **Cost** _____
10. **Seed** _____

Receipts & 4-bit Commit

Merkle-ish page hash / signatures OPE/FCE • View • Mirror • Hash

4-bit Commit Stickers

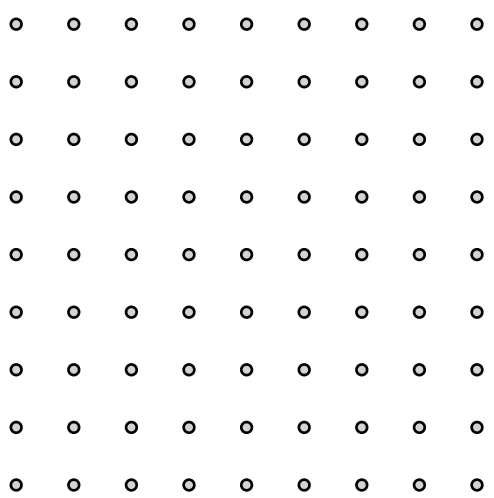


Parity Loom (E8/Leech scaffold)

Foam/peg board + balsa rails + clips

Build: Peg a 8×8 grid (1 cm pitch). Label parity lanes (top/bottom). Add half-shift glue marks.
Use: Clip strands for roots; mirror overlay must align on reflection. For Leech: mask octads; use permutation cards to rethread.
Why: Parity checks are physical (clips + XOR pad). You can verify Construction-A membership with finite steps.

Peg grid (8×8). Mark parity lanes and half-glue ticks.



Stations: Measure, Tag, Resume

Pause cards → test → sticky sidecar → continue

Station types: *Optics* (PSF/WFE), *Thermal* (ΔT per tick), *Polar/Spin* (efficiency), *Math* (interval bound), *Bio/Neuro proxies* (overlay RMS), *Cosmos* (shear/field), *Robotics* (closed-loop error).
Protocol: Dock a card; measure; write a token value on a sticky; attach to card edge; ledger the change; rejoin table play.

Δ	Receipt

Metric	Pre	Post

8-Person Table Playbook

Roles • Stations • Neighbor links

1. Anchor
Keeps form_id, ledger, and mirror law; calls commits.

2. Optics
Views H1–H2; runs PSF/FFT mirror; proposes Δ-lifts.

3. Thermal
Views H3–H4; manages ΔT and cadence.

4. Polar/Spin
Views H5–H6; L↔R parity checks; spin filters.

5. Math/Logic
Bounds, interval proofs, receipts.

6. Bio/Neuro proxy
Overlay RMS; gate irreversibility.

Neighbor Links (who talks to whom and when)

7. Cosmos/Fields
Shear/field rails; anomaly notes.

8. Systems/Robotics
Closed-loop error; safety ratchets.

Theorem Cards & Argument Protocol

Assumptions • Claim • Local Test • Counterexample

Theorem Card

Assumptions: ____________________

Claim: ____________________

Local Test: ____________________

Counterexample? ■ Yes ■ No

Receipt: ■OPE ■FCE ■View ■Mirror Hash: __________

Theorem Card

Assumptions: ____________________

Claim: ____________________

Local Test: ____________________

Counterexample? ■ Yes ■ No

Receipt: ■OPE ■FCE ■View ■Mirror Hash: __________

Theorem Card

Assumptions: ____________________

Claim: ____________________

Local Test: ____________________

Counterexample? ■ Yes ■ No

Receipt: ■OPE ■FCE ■View ■Mirror Hash: __________

Theorem Card

Assumptions: ____________________

Claim: ____________________

Local Test: ____________________

Counterexample? ■ Yes ■ No

Receipt: ■OPE ■FCE ■View ■Mirror Hash: __________

Theorem Card

Assumptions: ____________________

Claim: ____________________

Local Test: ____________________

Counterexample? ■ Yes ■ No

Receipt: ■OPE ■FCE ■View ■Mirror Hash: __________

Theorem Card

Assumptions: ____________________

Claim: ____________________

Local Test: ____________________

Counterexample? ■ Yes ■ No

Receipt: ■OPE ■FCE ■View ■Mirror Hash: __________

Master Ledger

Reproducible build receipts

Form ID: ___________________ Status: ■ANCHOR ■PROVISIONAL ■WORKING ■NON-WORKING

Construction A: p=__, code=_______________, glue=_________________

Automorphism: group=________, element=_________________

Octet Map H1..H8: ____

DNA-10: ____

Thresholds: normal{OPE:__,FCE:__} strict{OPE:__,FCE:__}

Receipts: 4-bit:____ votes: mirror__/__ views__/__ page hash: ___________________

Form ID: ___________________ Status: ■ANCHOR ■PROVISIONAL ■WORKING ■NON-WORKING

Construction A: p=__, code=_______________, glue=_________________

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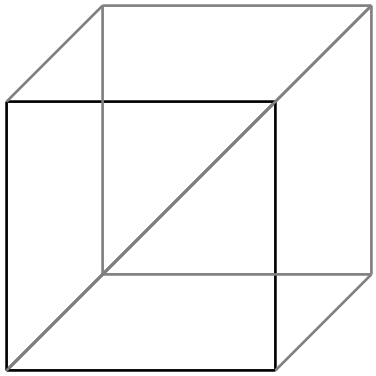
Thresholds: normal{OPE:__,FCE:__} strict{OPE:__,FCE:__}

Receipts: 4-bit:____ votes: mirror__/__ views__/__ page hash: ___________________

Hypercube → Toroidal Loom

From 4D cube projection to chamber shells



How to use: Tag 8 faces as octet gates; enforce mirror across paired faces. Wrap rails with balsa/tape into a toroidal chamber. Mark parity lanes; add Leech masks as needed.

Sticky Sidecars (Tokens)

Attach measured values to cards

Token: _____
Value: _____ Units: ____
Context: _____

Hash: _____

Blank Cards (3×3)

Cut lines. Use dry-erase sleeves if available.

Suit: _____ Rank: _____
Primitive/Idea: ____________
Notes:

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Primitive/Idea: ____________
Notes:

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Notes:

Eight Baseline Packs

Optics • Thermal • Polar/Spin/EM • Math/Logic • Bio • Neuro • Cosmos • Systems

Optics

- ■ PSF match (SC≥0.98)
- ■ WFE ≤ 25→22 nm strict
- ■ FFT↔iFFT closure

Thermal

- ■ ΔT/tick ≤ 1.0→0.8 K
- ■ Vent cadence stable
- ■ Pulse symmetry

Polar/Spin/EM

- ■ LHCP/RHCP swap
- ■ Spin filter eff ≥ 80%
- ■ AR ≤ 1.5 dB strict

Math/Logic

- ■ Interval proofs
- ■ OPE/FCE debt ↓
- ■ Type checks pass

Bio proxy

- ■ Overlay RMS ↓
- ■ Irreversibility ✓
- ■ Batch day variance ok

Neuro proxy

- ■ Ripple content decoded
- ■ Mode switch detected
- ■ Noise floor stable

Cosmos

- ■ Shear fields coherent
- ■ Seed B-fields consistent
- ■ Redshift bins stable

Systems

- ■ Closed-loop error ↓
- ■ Safety ratchets ✓
- ■ Latency within bound

Custom pack notes

Class Kit Checklist

Budget-friendly supply list

- 2+ decks of cards (different back colors) per table
- Dry-erase sleeves + fine-tip markers
- Ruler, tape, scissors, hole punch
- Balsa sticks, foam board / peg board, paper clips
- Transparent overlays (acetate)
- Sticky notes (token sidecars), colored pens
- Printed kit (this PDF)
- A4/Letter cardstock for cards
- Clipboard for station runs
- Ledger binder (Working / Non-Working albums)

Room layout & station assignments

Blank Cards (3×3)

Cut lines. Use dry-erase sleeves if available.

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Primitive/Idea: ____________
Notes:

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Receipts & 4-bit Commit

Merkle-ish page hash / signatures OPE/FCE • View • Mirror • Hash

4-bit Commit Stickers