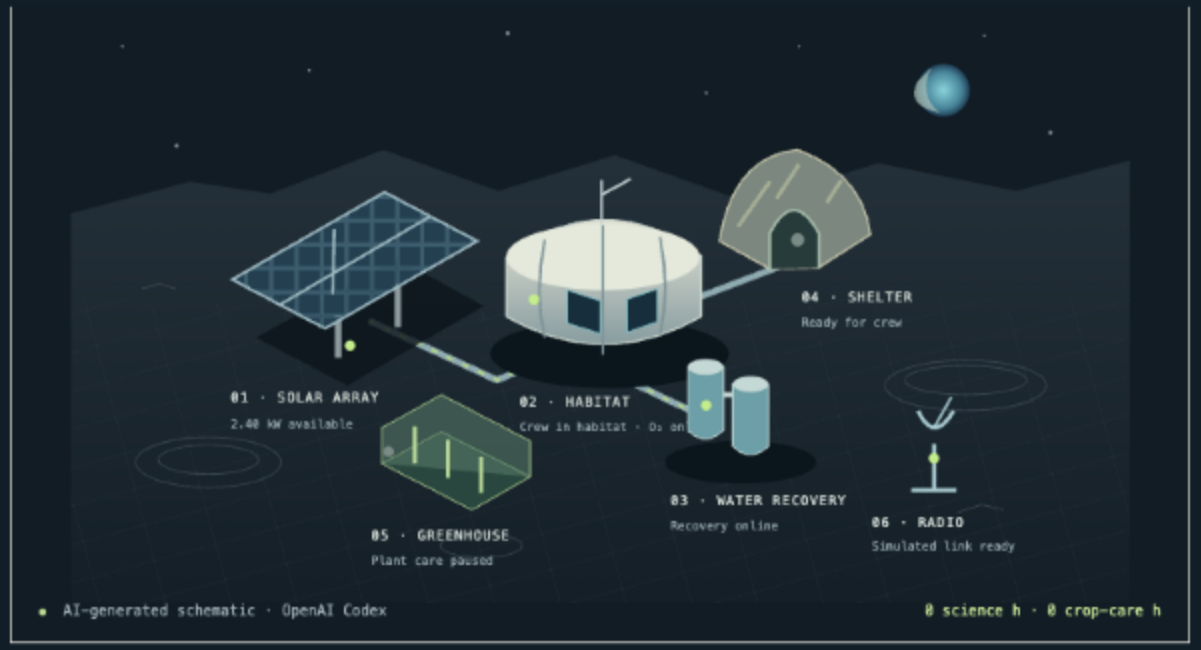
7GC
Mission Control

Lunar Outpost
Resilience Trainer



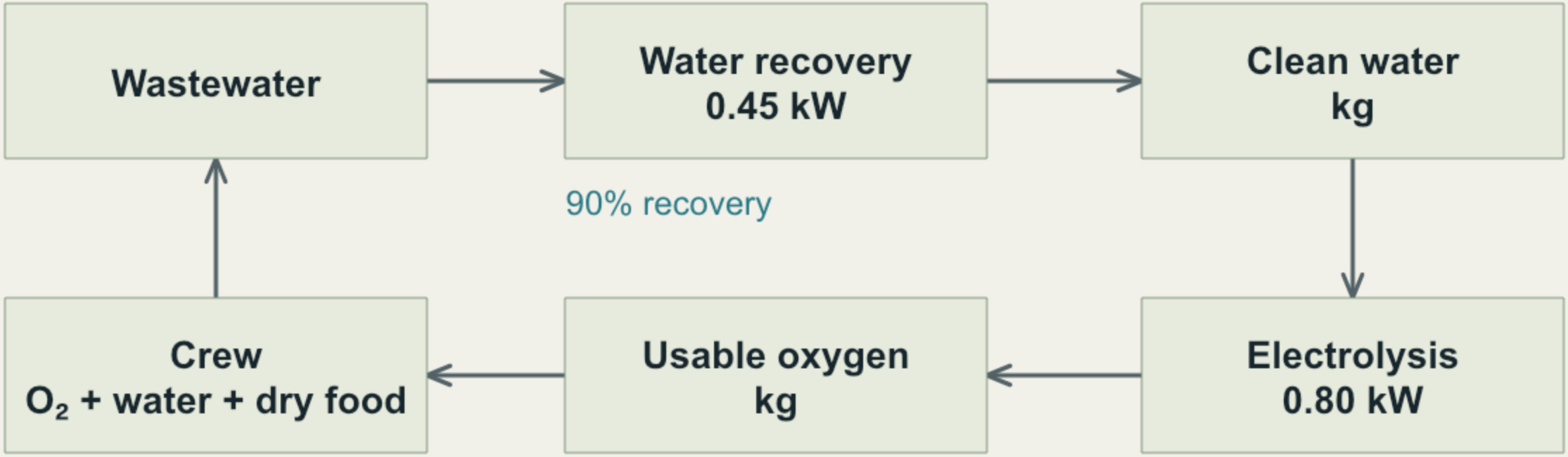
Actual game schematic
AI-generated artwork with OpenAI Codex

Edmund Gunn Jr. · gunnchOS
NASA Space Apps 2026 · Chicago

Build a Junior Astronaut Mission Trainer

Interacting life-support systems

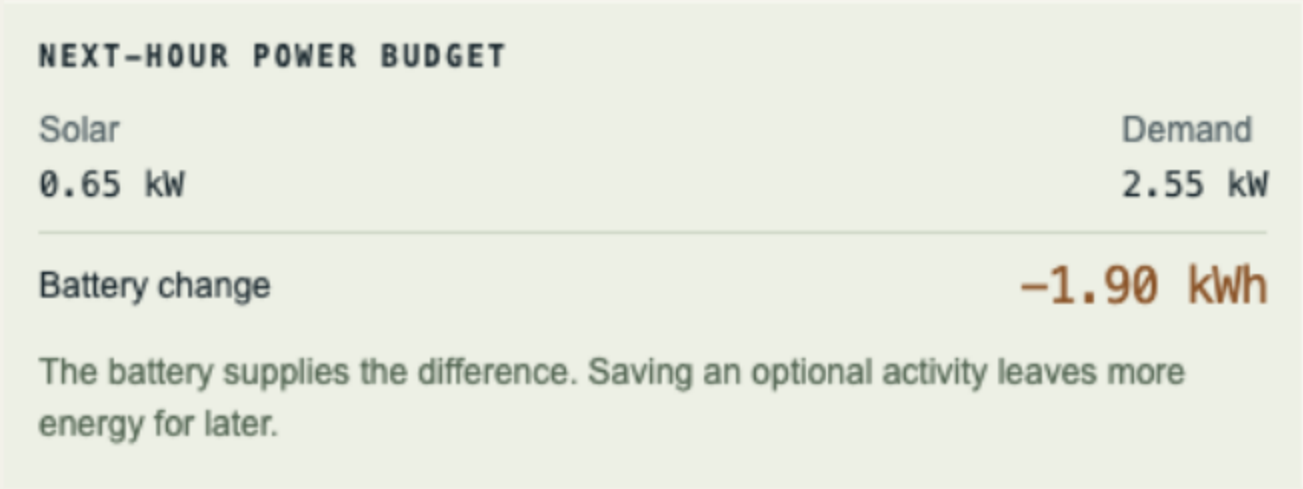
One hourly transition drives play, forecasts, planning and replay.



Crew use and greenhouse care also draw clean water.
Greenhouse: 0.35 kW + 0.02 kg/h. Science and radio compete for power.

The hour-six array fault

Solar falls from 2.40 to 0.65 kW. Repair needs two powered hours.



Pause science, then repair

2.55 − 0.65 = 1.90 kW
1.90 kW × 2 h = 3.80 kWh

The battery must bridge the repair interval.

Unchanged controls fail on unserved power at hour 9.

NASA-based planning inputs

0.84 kg

Oxygen
per person per day

3.20 kg

Water
per person per day

0.98 kg

Dry food
per person per day

1.125 kg

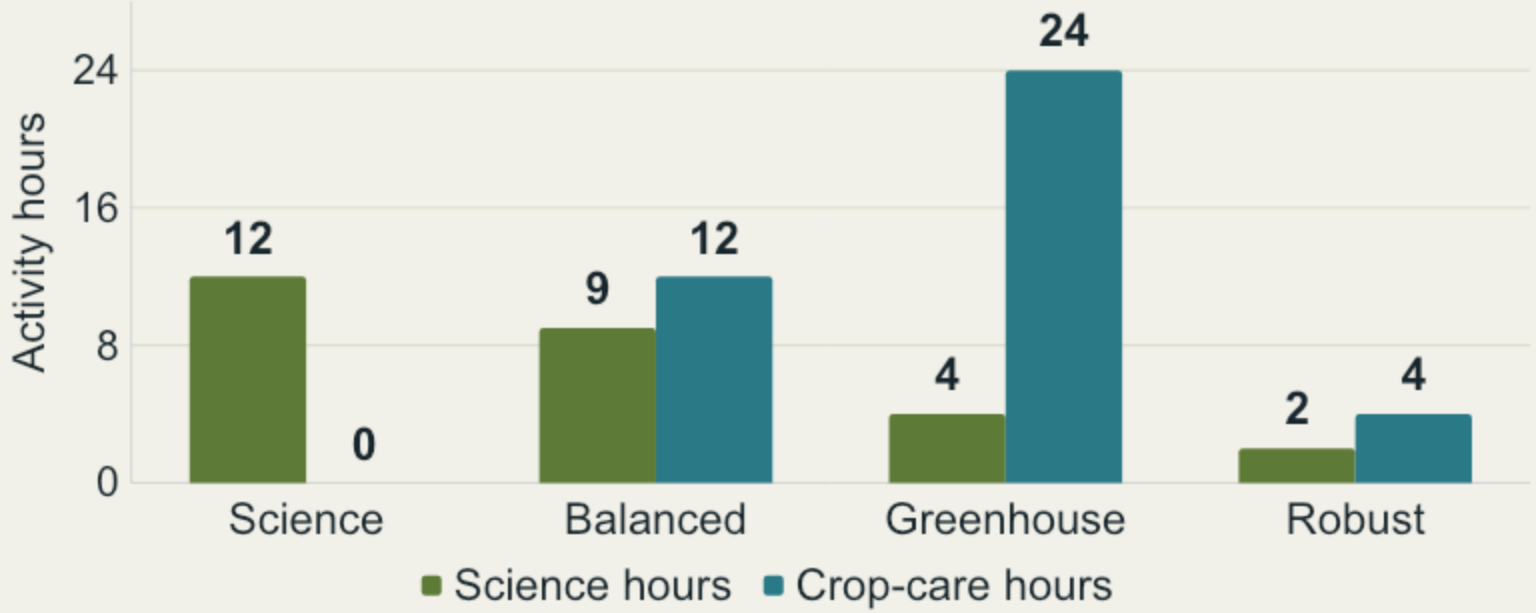
Water
per kg O_2 generated

NTRS 20230012635, Tables 2, 8 and 11
Surface 82 kg reference crew. Dry food excludes water and packaging.
Electrolysis uses rounded stoichiometry. Water includes rehydration.

Hardware, greenhouse, radio and risk are teaching assumptions.
Hourly inventory model. No clinical dose or flight certification.

Policy comparison shows the sacrifice

567 policies evaluated 199 meet reserves 18 pass all five cases



Robust choice

Same decisions under less sun, greater use, longer repair and their combination.

1.035 kWh

minimum battery in the combined case

Bounded phase search. Authored reserves. Crop care earns no harvest.
41 deterministic tests + real-browser, mobile and offline checks.

One engine, three learning views

Junior

Friendly language
In-context dictionary
Learner-paced time

Explorer

Resource budgets
Computed comparisons
What-if conditions

Engineer

Equations and units
Hourly trace and replay
Sensitivity evidence

98 KB standalone HTML, including the planner

No account or API key. Keyboard and touch controls.
Next: educator feedback, assistive-technology tests and a classroom pilot.

Explore the mission and its evidence

gunnchos-7gc-lunar-mission-2026.
tenaciousfjord2.chatgpt.site

Judge walkthrough: /demo

Source, slides and offline backup: /project.html#downloads

Bounded resource flows, constrained planning and a simulated data queue.
Source assumptions, exact replay and limitations available for inspection.

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AI assistance: implementation, writing and original artwork with OpenAI Codex