

The Great Company Adventures · Book 45 of 50

NVIDIA THE BRAIN MADE OF SAND

seven stops, twelve mental models, and the little chip that taught machines to learn.

"Discovering the businesses that built the modern world"

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THE GREAT COMPANY ADVENTURES

Discovering the businesses that built the modern world.

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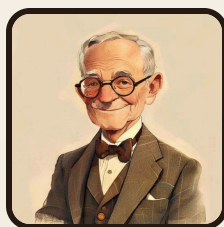
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MEET THE CHARACTERS



SIRI



BEN



WARREN



CHARLIE



GRETA

A curious girl named Siri, a wise old teacher named Ben, and his student Warren with Warren's partner Charlie — together discovering the businesses that built the modern world, one adventure at a time.

THE GLOBAL 50

One great company per volume · Fifty adventures, one modern world

SPACE & EXPLORATION

1. SpaceX — *“The Fire That Comes Back”*

MANUFACTURING & ENGINEERING

2. Toyota — *“The River That Builds Cars”*
3. Siemens — *“The Factory That Builds Factories”*
4. Caterpillar — *“The Machines That Move Mountains”*
5. Boeing — *“The Bird With Six Million Pieces”*
6. Airbus — *“The Plane Four Countries Built”*

ENERGY & INDUSTRY

7. Shell — *“The Sunlight Buried at Sea”*
8. ExxonMobil — *“The Ancient Sunlight Machine”*
9. GE Vernova — *“The Wheel That Makes Lightning”*

COMMUNICATION

10. AT&T — *“The Voice Inside the Wire”*
11. Qualcomm — *“The Whisper in the Air”*
12. Ericsson — *“The Towers That Talk”*

TRANSPORTATION

13. Tesla — *“The Car With No Engine”*
14. John Deere — *“The Machine That Feeds the World”*
15. UPS — *“The Promise in a Brown Truck”*

INFRASTRUCTURE

16. ABB — *“The Arms That Never Tire”*
17. Schneider Electric — *“The Guardian of the Grid”*

MATERIALS

18. Corning — *“The Thread of Light”*
19. DuPont — *“The Inventors of Almost Everything”*

SCIENCE & TOOLS

20. 3M — *“The Factory of Ten Thousand Ideas”*
21. Bosch — *“The Spark in Every Machine”*
22. Honeywell — *“The Dial That Tames the Weather”*

MEDICINE & BIOTECHNOLOGY

23. Pfizer — *“The Shield in a Tiny Vial”*
24. Roche — *“The Detectives of the Blood”*

25. Novo Nordisk — *“The Key to a Billion Locks”*

26. Johnson & Johnson — *“The Little Bandage That Grew”*

FOOD & AGRICULTURE

27. Nestlé — *“The Cup That Wakes the World”*
28. Cargill — *“The Invisible Harvest”*

FINANCE & COMMERCE

29. Visa — *“The Handshake Inside the Card”*
30. Mastercard — *“The Two-Second Trust Machine”*
31. Walmart — *“The Store That Never Runs Out”*
32. Costco — *“The Treasure Warehouse”*
33. FedEx — *“The Race Against the Sun”*

CONSUMER INNOVATION

34. Disney — *“The Factory of Dreams”*
35. LEGO — *“The Brick That Builds Anything”*
36. Sony — *“The Pocket Full of Music”*
37. Coca-Cola — *“The Secret in the Red Can”*
38. Nike — *“The Shoe That Learned to Fly”*

LUXURY & CRAFTSMANSHIP

39. Rolex — *“The Heartbeat on Your Wrist”*
40. LVMH — *“The Suitcase That Conquered the World”*

COMPUTING & DIGITAL CIVILIZATION

41. Apple — *“The Glass That Thinks”*
42. Microsoft — *“The Invisible Machine”*
43. Google — *“The Library With No Walls”*
44. Amazon — *“The Box That Crossed the World”*
45. NVIDIA — *“The Brain Made of Sand”*
46. Intel — *“The First Thinking Chip”*
47. TSMC — *“The Invisible City”*
48. ASML — *“The Machine That Prints With Light”*
49. OpenAI — *“The Machine That Learned to Talk”*

THE FINAL DISCOVERY

50. The Company Yet to Be Built — *“The Adventure You Will Build”*

THE CARD THAT GLOWED AT MIDNIGHT

Midnight. Homework: not happening. Because Grandpa Ben's brass compass just started... trembling.

TIK-TIK

It spun. Locked. Pointing straight at—

SPIN

Wait. Seriously?

That evening: Dad asked the laptop a question. Answer in two seconds. Nobody even blinked.

It's never done THIS before.

We ASK machines things now. I never asked HOW.



The needle pointed into a cardboard box. A dusty green card with a fan. Dad's old computer part.

YOU? You're junk with a fan!



The diary flipped open by itself. Fresh ink.

"Time to meet the businesses that built the modern world, little one. Go and find the brain made of sand."

★ WORTH REMEMBERING

A machine can now write a story, draw a dragon or spot a tumor — and nobody typed those answers in first. So tonight's mystery: **what is actually doing the thinking?**

The chip glinted. A whirlpool of blue light yanked her in.

WHOOSH



Here we GOOO!

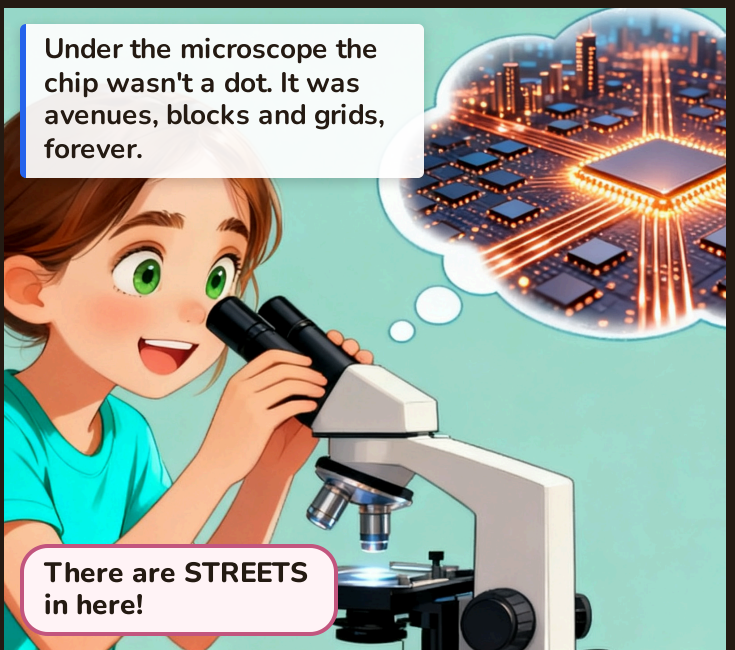
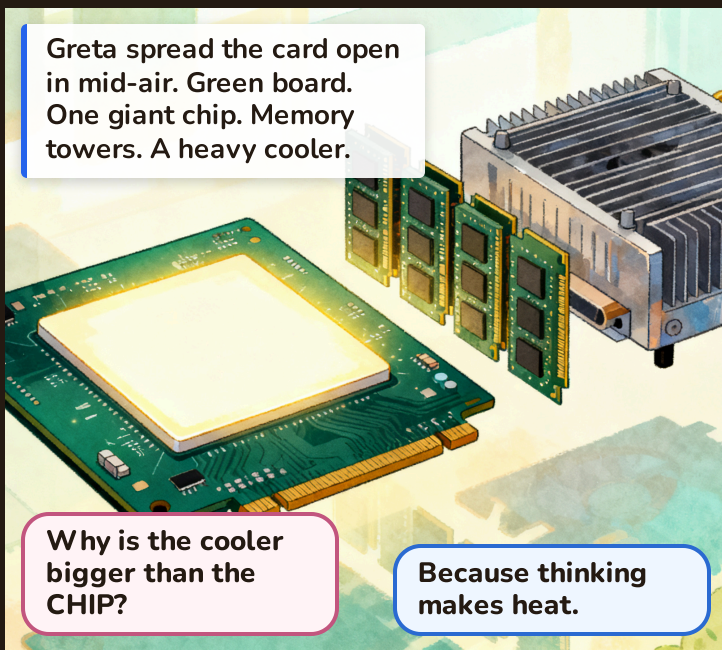


SIRI'S SECRET NOTEBOOK

Biggest mystery yet 🧠

- ① A dusty card somehow helps machines think. HOW?
- ② Grandpa says a brain can be made of sand. Sand has no ideas. Prove it. 🌴

THE CITY ON THE CHIP



★ WORTH REMEMBERING

That one tile holds more than **eighty billion** switches. If each switch were a person, it would hold ten Earths' worth of people — all working at the same instant, in silence.

Greta unrolled a parchment map. Seven glowing stops, beach to tower. *"Open all seven and you'll out-know most grown-ups."*



Seven stops. Deal.



SIRI'S SECRET NOTEBOOK • THE QUEST MAP

- 1 PERFECT SAND — where chips are born
- 2 PRINTED LIGHT — how you draw a city too small to see
- 3 THE SWITCH — the one thing computers really are
- 4 A MILLION HANDS — the speed trick
- 5 THE WALL OF DIALS — how a machine learns
- 6 THE FIREHOSE — feeding a hungry brain
- 7 THE FACTORY — many chips, one mind.

Let's GO 🌍

PERFECT SAND

3a Stop One: a beach, purified

"Every chip begins here," said Greta. Pale quartz sand, flowing toward a furnace like a river.

Melted, cleaned, then grown: a mirror-smooth silver cylinder pulled slowly from molten silicon.

It's growing like a giant icicle!

Sliced into thin round discs that shimmer like rainbows. Each disc: hundreds of future chips.

My computer used to be a BEACH?!

They're TREASURE!

"Nine nines pure," said Greta. "99.9999999% silicon. One stray atom is a boulder in the stream."



★ WORTH REMEMBERING

Picture a mountain of sugar with exactly one spoonful of anything else allowed. That's the purity. And the whole crystal must be one single unbroken pattern of atoms — a **single crystal**, taller than you. 💎

📖 SIRI'S SECRET NOTEBOOK • STOP 1 DONE

Sand → melt → ONE giant flawless crystal → mirror wafers 💎 Nine nines pure (mountain-of-sugar test!). Stop Two: how do you draw a city smaller than a dust speck?

PRINTED WITH LIGHT

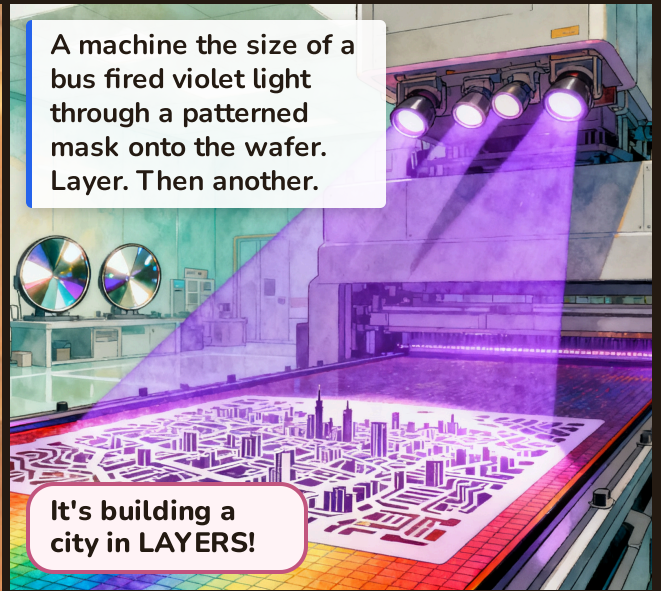
4a Stop Two: too small to carve

"You can't carve it — it's far too small. So we do what stencils do. We print with light."



Light is the PENCIL?

A machine the size of a bus fired violet light through a patterned mask onto the wafer. Layer. Then another.



It's building a city in LAYERS!

Greta held Siri back from the glass. Dozens of layers. Each one thinner than a soap bubble's skin.



How many layers?

Roughly a hundred.

★ WORTH REMEMBERING

The finest features on a modern chip are a few **nanometres** wide — thousands of times thinner than a hair, only a few dozen atoms across. To print that, the light itself must be shorter-waved than any color your eye can see. 🔦

"One dust mote ruins a chip. So the room is cleaner than an operating theatre — and some still fail."



★ WORTH REMEMBERING

Making chips is the hardest manufacturing humans do. A few of the world's factories can do it at all, and each costs more than a fleet of aircraft carriers. That difficulty is a wall in itself — remember it for Chapter 18. 🏢

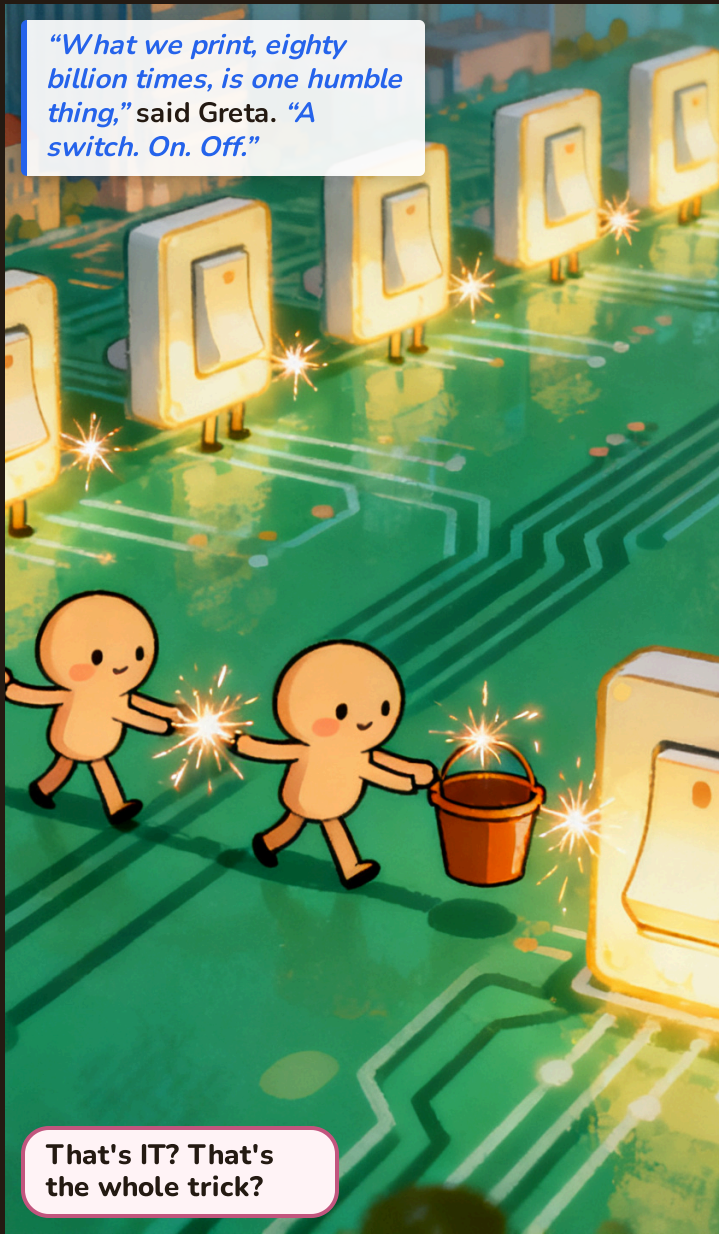
📖 SIRI'S SECRET NOTEBOOK • STOP 2 DONE

Print, don't carve! Violet light + ~100 stencil layers 🔦 Features a few nanometres wide (dozens of atoms!). Arch-enemy: DUST. Stop Three: what's actually printed?

THE ONE THING INSIDE EVERYTHING

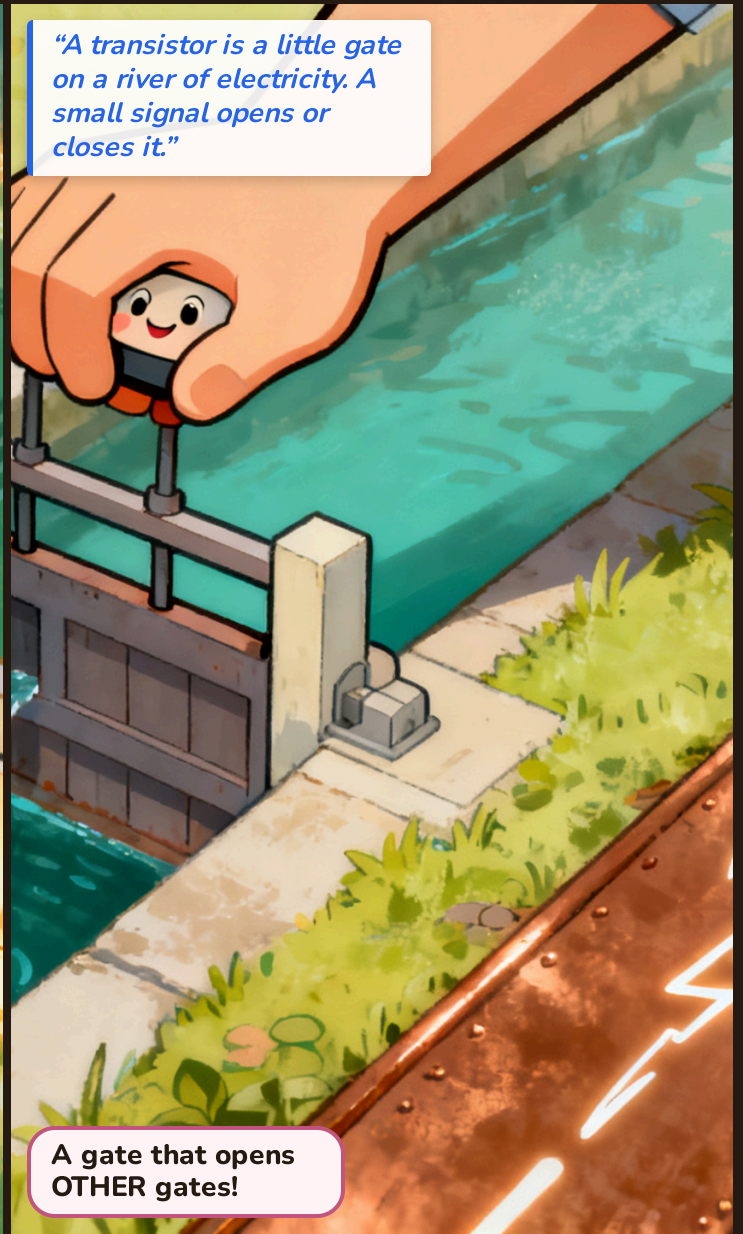
5a Stop Three: it's all switches

"What we print, eighty billion times, is one humble thing," said Greta. "A switch. On. Off."



That's IT? That's the whole trick?

"A transistor is a little gate on a river of electricity. A small signal opens or closes it."

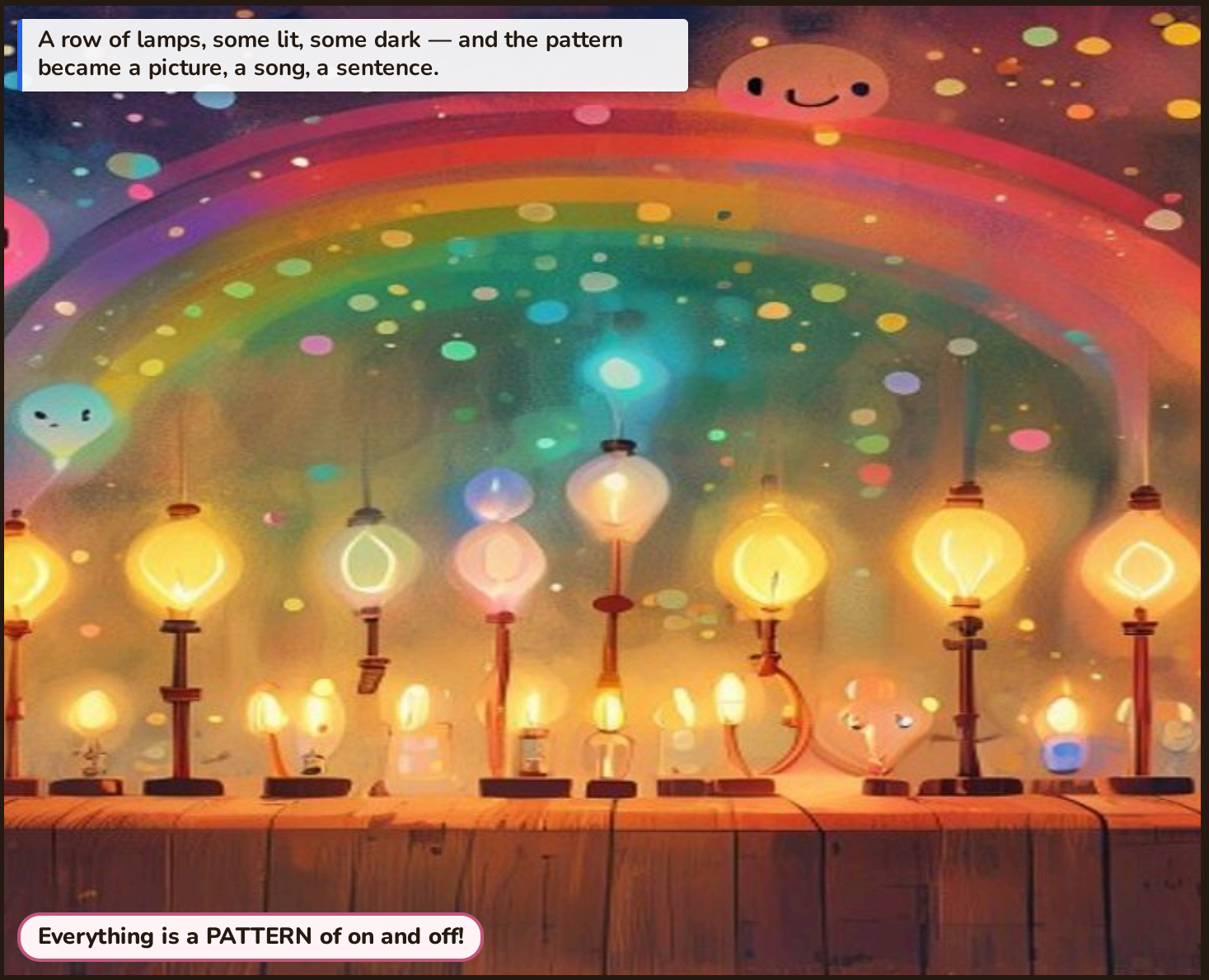


A gate that opens OTHER gates!

★ WORTH REMEMBERING

That's the miracle: a switch that can be flipped by another switch. Wire them cleverly and they can **add**, **compare** and **decide**. Everything else is stacking. ✂

A row of lamps, some lit, some dark — and the pattern became a picture, a song, a sentence.



Everything is a PATTERN of on and off!

★ WORTH REMEMBERING

On and off is a whole alphabet. Lamps become numbers, numbers become colors, colors become pictures; other numbers become sound, or letters. Nothing in there is magic — which somehow makes it better. ✨

📖 SIRI'S SECRET NOTEBOOK • STOP 3 DONE

A transistor = a gate on an electricity river ⚡ Switches flip switches → add, compare, DECIDE. On/off patterns become pictures, songs, words. Next: the speed secret!

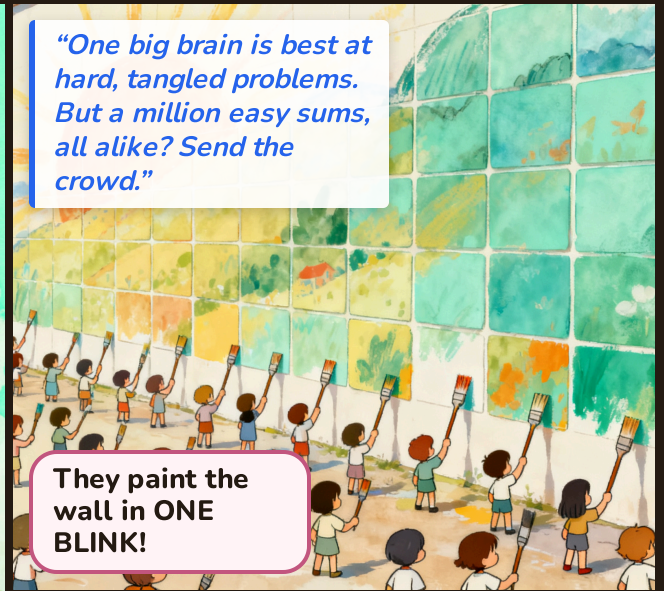
A MILLION SMALL HANDS

6a Stop Four: two kinds of brain

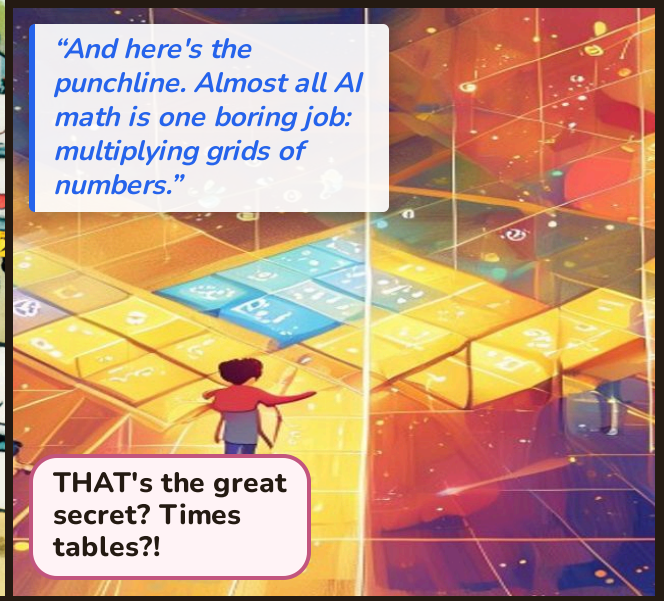
"Two ways to climb a mountain of sums," said Greta. One genius. Or a thousand helpers.



"One big brain is best at hard, tangled problems. But a million easy sums, all alike? Send the crowd."



"And here's the punchline. Almost all AI math is one boring job: multiplying grids of numbers."

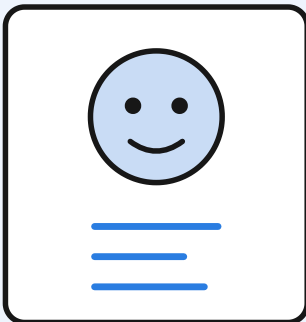


★ WORTH REMEMBERING

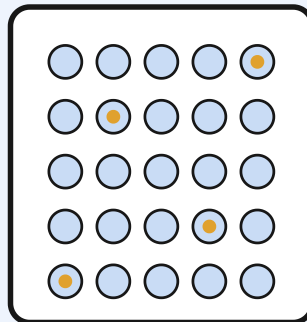
Grown-ups call it **parallel computing**. Split a job into a million identical little sums and a chip full of small simple workers beats a chip with a few clever ones — by thousands of times. Video games needed exactly that. Hold that thought. 🙌



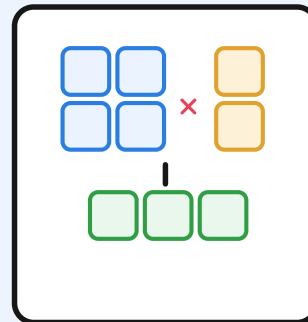
TWO WAYS TO DO MATH



ONE BIG BRAIN
hard sums, one by one



A MILLION HANDS
easy sums, all at once



GRID MATH
what learning is made of



SIRI'S SECRET NOTEBOOK · STOP 4 DONE

Big-brain chip = hard things in a row. Crowd chip = a million easy things at once 🖐️ AI math = grids × grids, forever. So the crowd wins. WHY does AI need so much grid math though?

THE WALL OF DIALS

7a Stop Five: what an AI actually is

"Inside every AI is a wall of dials," said Greta. "Billions of them. Each one is just a number."



A brain made of
KNOBS?

"It guesses. It's wrong. Every wrong guess nudges some dials a hair. Then it guesses again."

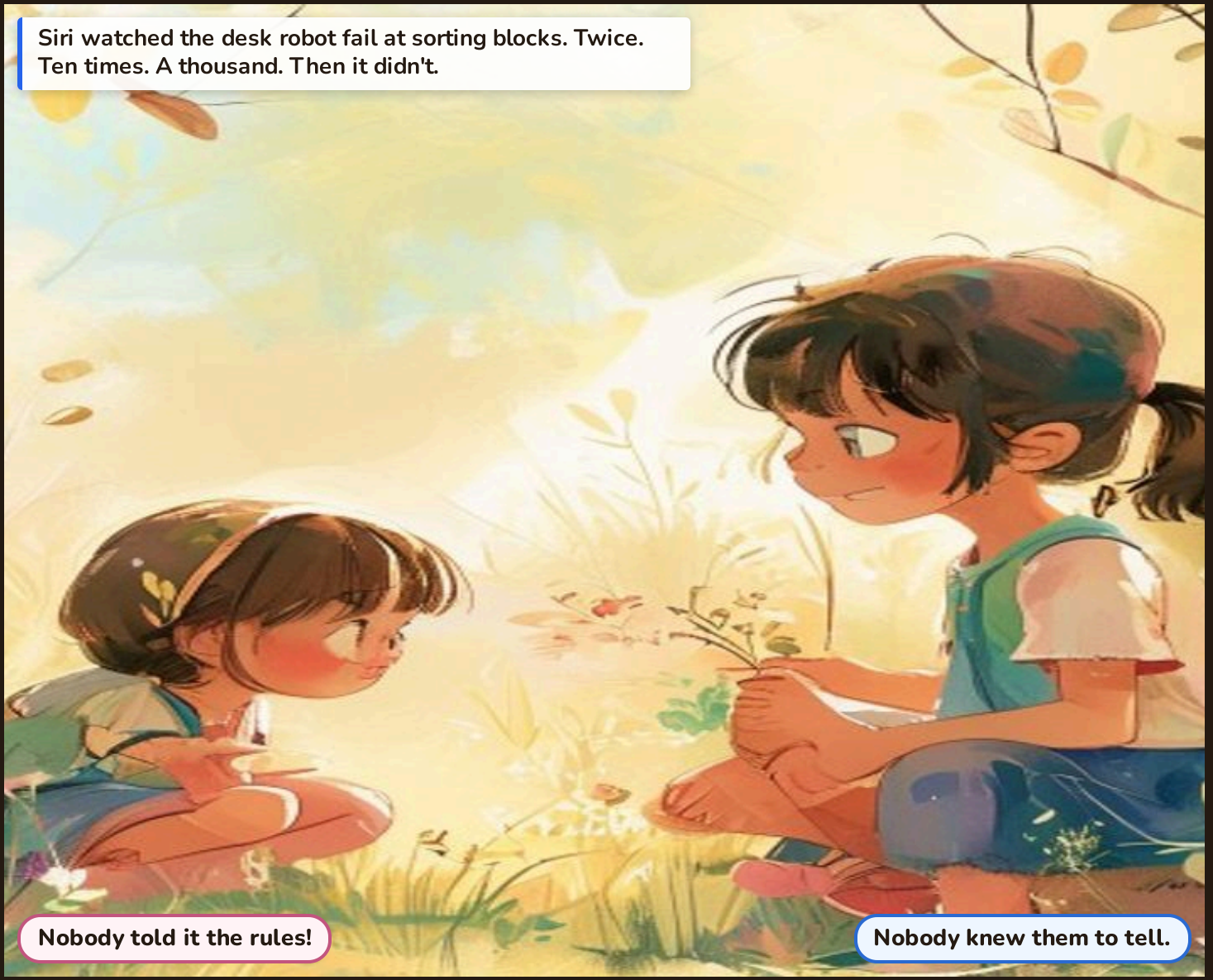


It learns by being
WRONG?!

★ WORTH REMEMBERING

Nobody writes down 'what a cat looks like'. The machine sees millions of examples, guesses, checks how wrong it was, and nudges its dials toward less-wrong. Trillions of times. The wall of numbers slowly becomes **skill**. 🧠

Siri watched the desk robot fail at sorting blocks. Twice. Ten times. A thousand. Then it didn't.



Nobody told it the rules!

Nobody knew them to tell.

★ WORTH REMEMBERING

Every single nudge is grid math — millions of multiply-and-adds. Now multiply by billions of dials and trillions of practice steps and you see why this needed a million small hands, running for weeks, in halls the size of towns. 🏠

📖 SIRI'S SECRET NOTEBOOK • STOP 5 DONE

AI = billions of dials + guess → wrong → nudge → repeat 🔄 Learning is being wrong politely, a trillion times. Every nudge = grid math. THAT's why it eats chips. 🍷🍷

FEEDING THE HUNGRY BRAIN

8a Stop Six: Fast is useless if you're hungry

"A million hands are useless with nothing to hold," said Greta. "The numbers must ARRIVE fast enough."



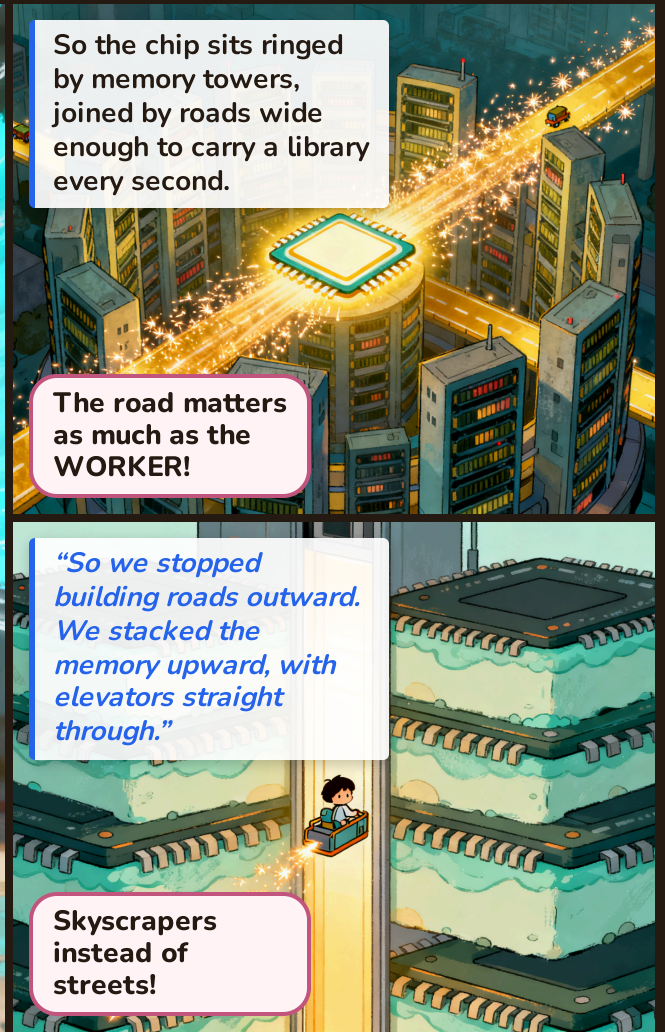
A speedy chef with no ingredients!

So the chip sits ringed by memory towers, joined by roads wide enough to carry a library every second.

The road matters as much as the WORKER!

"So we stopped building roads outward. We stacked the memory upward, with elevators straight through."

Skyscrapers instead of streets!



★ WORTH REMEMBERING

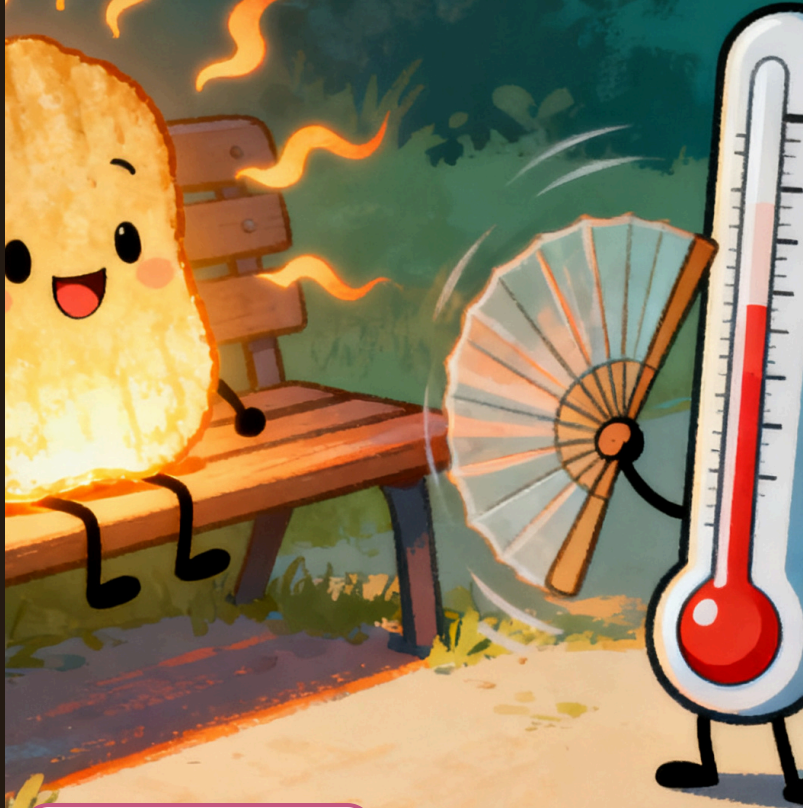
Grown-ups call the road's width **bandwidth**. Modern AI chips can pull in **thousands of gigabytes every second** — a stack of encyclopedias per blink. Half the art of chip design is just: keep the workers fed. 🍽️

📖 SIRI'S SECRET NOTEBOOK • STOP 6 DONE

Speed needs SUPPLY. Memory stacked into towers with elevators through the middle 🏢
Bandwidth = how wide the road is. Rule: a chip is only as fast as its slowest delivery.

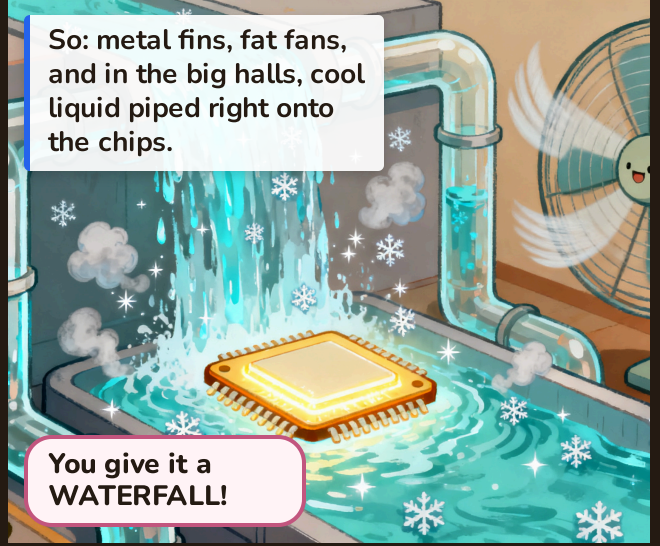
THE HEAT PROBLEM

"Every switch flip leaks a crumb of heat," said Greta. "Multiply by billions, billions of times a second..."



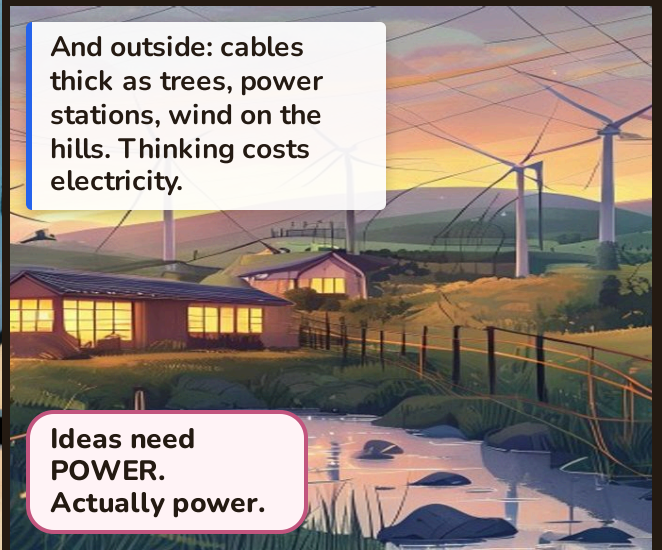
...and my card becomes a TOASTER!

So: metal fins, fat fans, and in the big halls, cool liquid piped right onto the chips.



You give it a WATERFALL!

And outside: cables thick as trees, power stations, wind on the hills. Thinking costs electricity.



Ideas need POWER. Actually power.

★ WORTH REMEMBERING

This is the honest limit of the whole story. A big thinking factory can use as much electricity as a small town — which is why the race isn't only 'faster', it's **more thinking per watt**. Efficiency is the real scoreboard. ⚡

📖 SIRI'S SECRET NOTEBOOK

Heat = the price of every flip 🔥 Fins → fans → liquid waterfalls. A thinking factory can drink a small town's electricity. The real contest: more thinking per WATT. ⚡

MANY CHIPS, ONE MIND

10a Stop Seven: the thinking factory

A door opened onto a hall stretching to the horizon. Machines blinking. Cables braided overhead like vines.

"Tens of thousands of chips, roped together so tightly they behave as ONE machine."

How do they not get confused?

"Like a choir. Everyone sings their line, and everyone waits for the same beat."

This isn't a computer. It's a CITY.

One slow singer slows EVERYBODY!

★ WORTH REMEMBERING

This is the part outsiders miss: the hard problem stopped being the chip. It's chips **plus** cables plus cooling plus software, designed together so a hundred thousand of them think one thought. Whoever gets the whole machine right, wins. 🎵

📖 SIRI'S SECRET NOTEBOOK • STOP 7 DONE

Seven stops! Sand 🏖️ light 💡 switches ⚡ hands 🖐️ dials 🕒 firehose 🚒 factory 🏭
Many chips roped into ONE mind, singing on one beat. Somebody conducts this... WHO?

A MILLION HANDS

The map was full. Behind the last stop: no machine at all. Just... the world.

The final secret is PEOPLE?

Golden threads rose from quarries, cleanrooms, cable plants, cooling works and software studios.

The whole planet is holding hands.

One factory alone: cathedral-sized clean halls, cleaner than a hospital, costing more than a fleet of ships.

People BUILT that?
For dust-free air?!

Quarry worker. Technician. Lens polisher. Cable braider. Cooling plumber. Software teacher. Each shrugged: *"I only do my small part."*

But nobody does the WHOLE thing?!

★ WORTH REMEMBERING

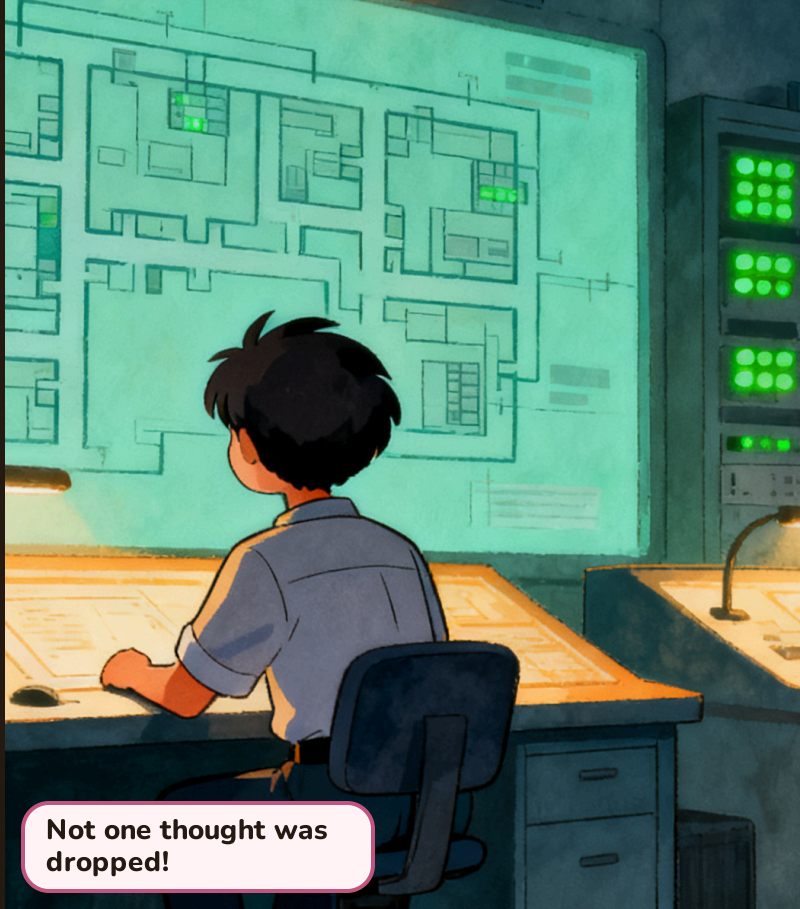
Here's the mind-bender: **nobody on Earth knows how to make an AI chip**. Not one person. The design, the printing, the memory, the cooling, the software — each is a lifetime. A great company is whoever can conduct all of it into one working object. 🎵

📖 SIRI'S SECRET NOTEBOOK • STOP 7, PART TWO

Nobody knows the whole recipe! Quarries + cleanrooms + cables + coolant + code = one chip 🌍 The CONDUCTING is the invention. And I'm about to meet the conductor...

THE NIGHT IT MUST NOT STOP

A status wall glowed green.
One light blinked amber. A
spare hall woke up. Nobody
outside noticed.



Not one thought was
dropped!

One campus dimmed
for repairs. Its twin
caught the river of work
mid-fall. Seamless.



The spare city
just... took over!

*"We attack ourselves
on purpose," said Greta.
"Practice heat, practice
dust, practice broken
cables."*



You rehearse
DISASTERS?

Better us than
the real thing.

★ WORTH REMEMBERING

A stumbling thinking factory can waste a fortune in an hour, so they rehearse failure until failure gets bored of them. **Boring on purpose** is a superpower — and customers pay extra for it. ⚡

📖 SIRI'S SECRET NOTEBOOK

They attack THEMSELVES on purpose: practice heat + dust + broken cables ⚡ The twin hall catches the work without a splash. 'Boring on purpose' = superpower. Filed forever.

WHY THE WORLD SAYS YES

13a Siri's question Flips

A doctor and a screen read the same scan together. The screen circled one small grey speck first.



It doesn't replace her.
It HELPS her look.

A coastal town, boats home early, a storm still far out at sea — spotted a whole day sooner.



A day of warning. That's LIVES.

In a studio, a dragon in a snowstorm rendered in seconds. It used to take a night per frame.



Artists get to try TWENTY ideas now!

★ WORTH REMEMBERING

Warren's riddle: **price is what you pay, value is what you get**. Earlier diagnoses, earlier storm warnings, medicines designed faster, artists free to experiment. That's why the world lined up. 🍷

📖 SIRI'S SECRET NOTEBOOK

My question flipped: not 'how does it work' → 'WHY build all this?' Answer #1: real value — doctors, storms, medicines, art 🍷 Next: why the crowd keeps growing.

THE PARTY THAT GROWS

Greta showed her the oldest joke in tools: a brilliant new tool nobody has learned. Beautiful. Useless.



Who would even USE it?

"Chips had that problem. Builders won't learn tools without machines. Machines aren't bought without tools."



A chicken-and-egg BRIDGE!

"But once it starts: every new program makes the chips worth more. Every new chip attracts more builders."



The party throws ITSELF!

★ WORTH REMEMBERING

Network effects, the software kind. Millions of programs, university courses, textbooks and habits now assume one toolkit. A rival can build a fine chip by next year; conjuring twenty years of everybody's habits is the hard part. 🏠

📖 SIRI'S SECRET NOTEBOOK

A tool nobody learned = useless 🛠️ Two-sided bridge: builders ⇄ machines pull each other in. Twenty years of habits ≠ copyable in a year. But WHO started this loop?!

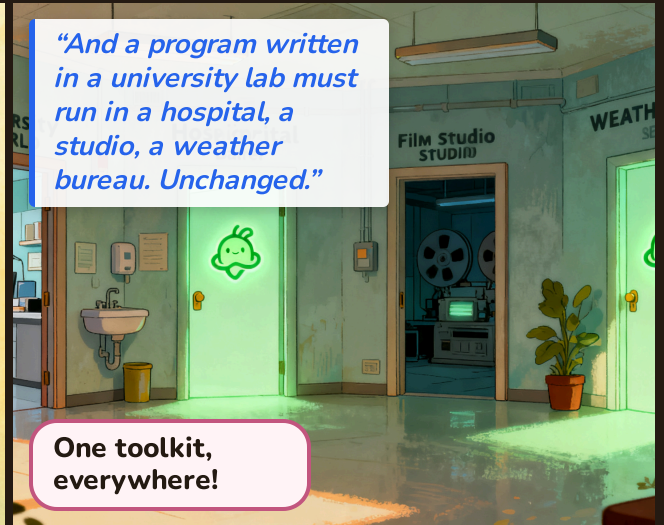
THE PRICE OF TRUST

*"One more wall," said Greta.
"When you rent ten thousand
chips for a month, they must
simply RUN."*



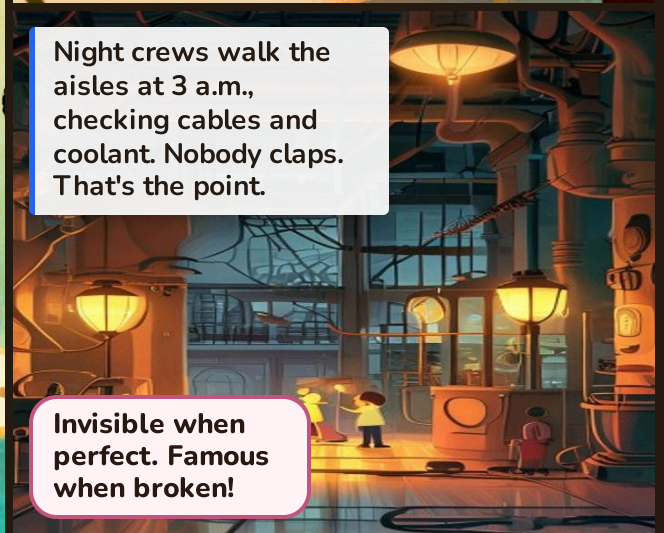
No excuses. No
wobbles.

*"And a program written
in a university lab must
run in a hospital, a
studio, a weather
bureau. Unchanged."*



One toolkit,
everywhere!

Night crews walk the
aisles at 3 a.m.,
checking cables and
coolant. Nobody claps.
That's the point.



Invisible when
perfect. Famous
when broken!

★ WORTH REMEMBERING

A brand is a promise kept so long it becomes a reflex. Copying one chip takes a year; copying twenty years of 'it just runs' takes... twenty years. Slowest wall to build, hardest wall to climb. 🐼

📖 SIRI'S SECRET NOTEBOOK

The promise: rent 10,000 chips → they just RUN 🛡️ Same tools in labs, hospitals, studios. Trust is built at 3 a.m. and never claps for itself. Okay compass — WHO runs all this?!

THE NAPKIN IN THE DINER

Under a green California sky stood a headquarters of glass triangles. Every thread of light sank into it. She knew the name.

NVIDIA! The brain made of sand!

"It began in 1993. Three engineers. A roadside diner booth. A napkin full of boxes and arrows."

A DINER?! With PANCAKES?

"For years they built chips for one thing: video games. Millions of tiny sums at once, to draw whole worlds."

Games were the **TRAINING GROUND!**

"And in the mid-90s the first big idea flopped. Nearly the whole company was let go. One last try left."

They almost DIED?

★ WORTH REMEMBERING

Remember it: almost every world-changing company has a nearly-died chapter. They bet everything on one more design, shipped it, and survived — then in 1999 named their new kind of chip a **GPU**. Nobody yet suspected what those game chips would grow up to do.

📖 SIRI'S SECRET NOTEBOOK • THE REVEAL

NVIDIA! 1993 diner napkin → game chips → mid-90s near-death, one last try 🤖 → 1999: a new kind of chip, the GPU 🎮 Cliffhanger: how did GAME chips become AI brains?

THE ROAD BUILT TWENTY YEARS EARLY

2006. They opened the game chip to scientists with a toolkit called CUDA — and paid for it, year after year.

Scientists using a GAME chip?

"For six years, mostly shrugs. Some people called it a waste of money. They kept paving anyway."

Six years with nobody on the road!

2012. Students taught a machine to recognize pictures using two gaming cards. It crushed every rival.

The road finally had TRAFFIC!

Then a flood: labs, hospitals, studios, weather bureaus — all wanting thinking factories.

Everyone wants the road NOW.

★ WORTH REMEMBERING

The lesson isn't 'they got lucky'. Luck arrived because the road already existed. They spent twenty years making one thing easy for scientists **before** anyone paid them for it. **Patience is a strategy** — and it only works if you can afford to be early and stay useful. 🛣️



THE STORY IN TIME

1993

Three engineers sketch a graphics chip in a roadside diner booth.

1995

The first big product disappoints. The company nearly ends.

1997

One last design ships — and works. Survival.

1999

The GeForce 256 arrives; they name the new kind of chip a GPU.

2006

CUDA opens the gaming chip to scientists. Most people shrug.

2012

Students win a picture contest with two gaming cards. The AI era begins.

2016

Computers built only for teaching machines.

2017

The transformer idea makes AI hungry for far more math.

2020

Whole racks designed as one machine: chips, cables, cooling together.

2022

Chat-style AI arrives; the world queues for thinking factories.

Today

Chips, cables, cooling and software shipped as one system. 🧠



SIRI'S SECRET NOTEBOOK

2006 CUDA = paving an empty road 🛣️ Six years of shrugs → 2012 picture contest → AI flood. Rule: build the road BEFORE the traffic, then stay useful. Patience is a strategy.

THE CASTLE OF SAND

A warm glow. A smell of cherry cola. Warren and Charlie, the partners from Omaha, before a shining castle.

Under a broad oak, the two old friends let her lay out the walls, one by one.

What keeps invaders OUT, Siri?

Walls! I've been collecting them ALL BOOK!

Scarier than a quiz. WAY more fun.



THE CASTLE WALLS • WHY RIVALS CAN'T COPY IT



Wall One: The Tools Everyone Learned

Millions of builders grew up on one toolkit. Their programs, courses and habits assume it. Switching means relearning a language you already dream in.



Wall Two: The Whole Machine

Not a chip — chips, cables, cooling and software designed together so a hundred thousand of them think one thought. A rival must match the whole orchestra, not one instrument.



Wall Three: Boring Reliability

A stumbling factory wastes a fortune an hour. Customers happily pay more for 'it simply runs'. That reputation is earned in years and lost in a week.



Wall Four: Reinvestment

Money goes straight back into the next chip, the next tool, the next cable — every year, in good times and bad. The castle's job is building a bigger castle.

Charlie tapped his thick glasses. *"My trick: don't ask how it WINS. Ask what would DESTROY it. Then check they're not doing it. Invert, always invert."*



Find every way to LOSE... then don't!



THE CASTLE WALLS · WHY RIVALS CAN'T COPY IT



Crack One: Customers Turning Builders

The biggest buyers are designing their own chips for their own jobs. Every one is a customer walking off with a piece of the road.



Crack Two: The Toolkit Copied

Rivals and open projects keep building bridges onto the toolkit. If switching ever becomes easy, the oldest wall is the first to fall.



Crack Three: One Faraway Island

Almost every advanced chip on Earth is baked in a handful of factories in one region. Earthquakes, storms or politics could stop the ovens.



Crack Four: Power, Heat and Hype

Thinking costs electricity, and towns can only spare so much. And after a boom this loud, everyone piles in — the surest way to make a good business a crowded one.



★ WORTH REMEMBERING

Charlie's ruin-it checklist: let the tools get clumsy. Ship something unreliable. Squeeze customers until they build their own. Fall in love with today's chip and miss the next idea. Now — **just never do those.** Inversion turns worry into a to-do list.

Warren raised his cola. *"I mostly study castles I understand. I study this one for its lesson: be early, be useful, and keep earning the trust."*



The treasure was never the chip!

 SIRI'S SECRET NOTEBOOK · THE CASTLE

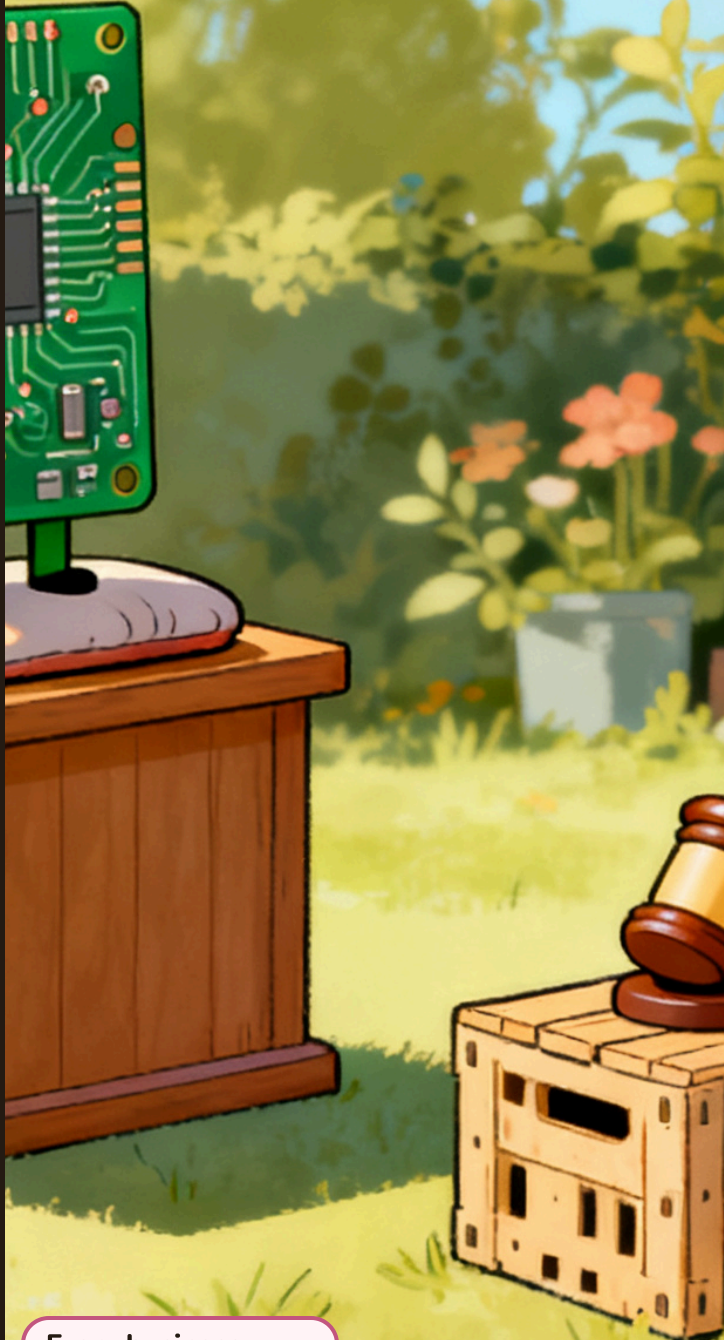
WALLS: tools  whole machine  reliability  reinvestment 
CRACKS: customers building chips  copied toolkit  one island 
power + hype . Charlie: INVERT. Warren: be early, stay useful. 

THE JUDGE'S QUESTIONS

Then Warren built a tiny courtroom — and put the CARD on the witness stand.

TOK TOK

Siri banded the tiny gavel and fired Warren's five forever-questions.



Every business answers the future, Siri.

Today, the judge is YOU.

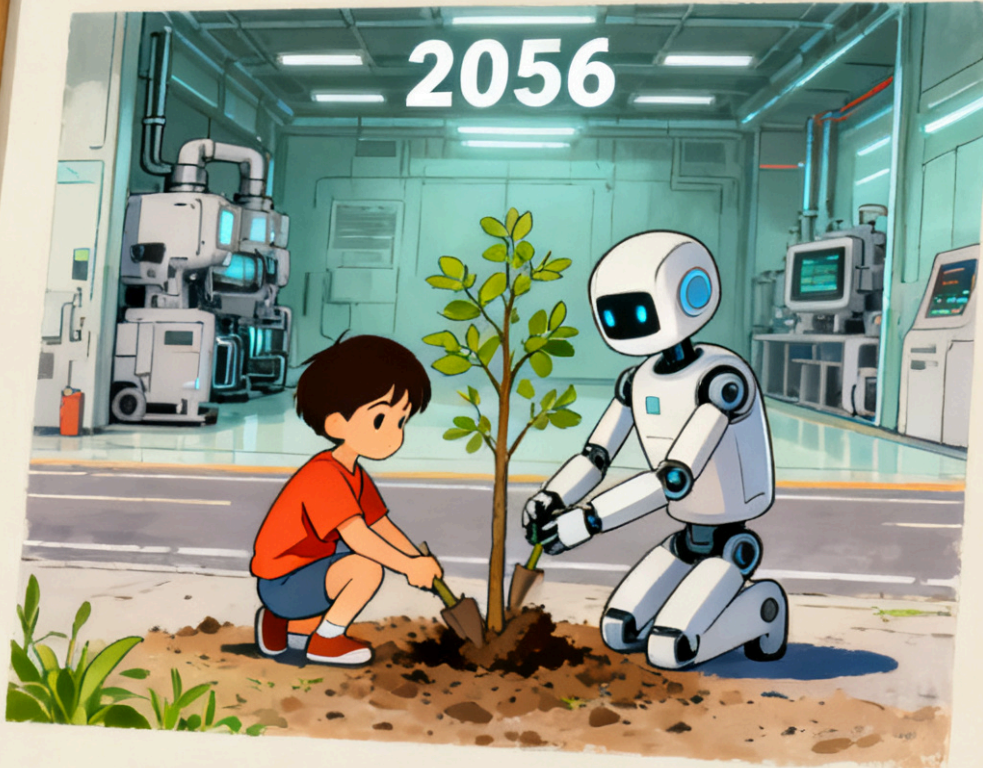
Question one: will people still NEED you?



★ WORTH REMEMBERING

The Owner's Court: ⚖️ Enduring need? —
'People will always want to think faster
together.' ⚖️ Trust earned? — 'Twenty years of
tools that just run.' ⚖️ Reinvesting wisely? —
'Every year, into the next chip and the next
toolkit.' ⚖️ Copyable with money? — 'One chip,
maybe. The whole machine plus everyone's
habits? Much harder.' ⚖️ What breaks you? —
'Clumsy tools, an unreliable year, or falling in
love with today's design.' Court adjourned for
lemonade.

Last exhibit: 2056. A child and a patient helper robot planting a tree. Still sand. Still switches.



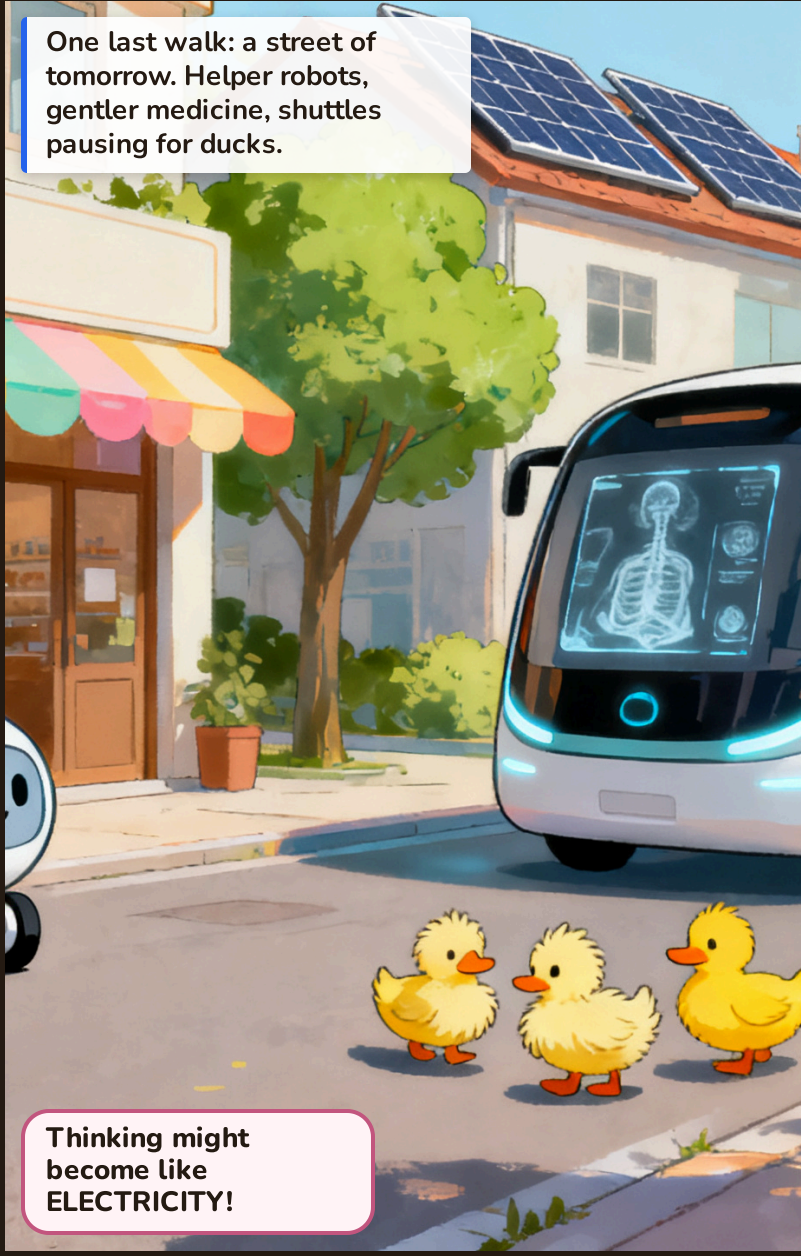
The SHAPE changes. The NEED never does.

 SIRI'S SECRET NOTEBOOK • JUDGE ANY BUSINESS

Warren's five: ① enduring need? ② trust earned? ③ reinvests wisely? ④ copyable with mere money? ⑤ what breaks it? Works on soap, railways, chips — anything. (Not one word about stock prices. The judge judges the BUSINESS.) ⚖️

THE NEXT THIRTY YEARS

One last walk: a street of tomorrow. Helper robots, gentler medicine, shuttles pausing for ducks.



Thinking might become like **ELECTRICITY!**

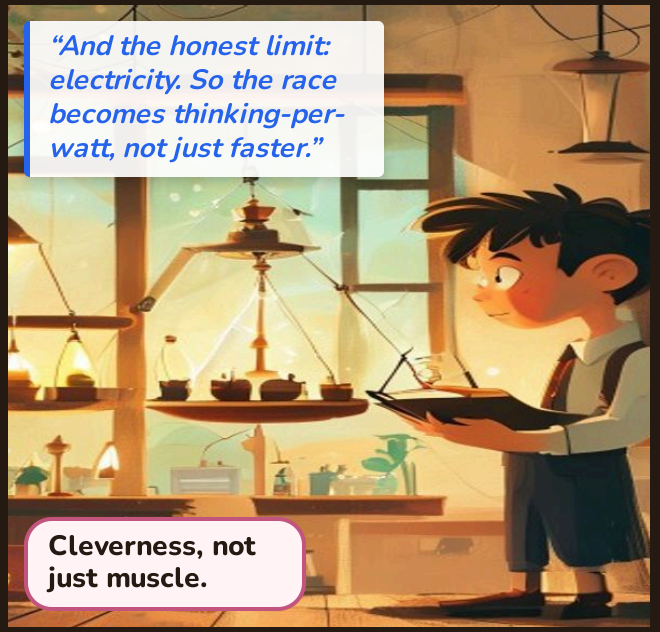
"The next big jump isn't words on a screen," said Greta. "It's machines that handle the messy real world."



Folding laundry is **HARDER** than chess?!

Wildly harder.

"And the honest limit: electricity. So the race becomes thinking-per-watt, not just faster."



Cleverness, not just muscle.

★ WORTH REMEMBERING

The honest picture: enormous promise — earlier diagnoses, better weather warnings, new medicines, patient tutors — and real worries: power use, confident mistakes, and who decides what these machines do. Both are true at once. Grown-ups who tell you only one half are selling something. 🌟

On a rooftop at dusk, Siri thought it through the way Grandpa taught her.



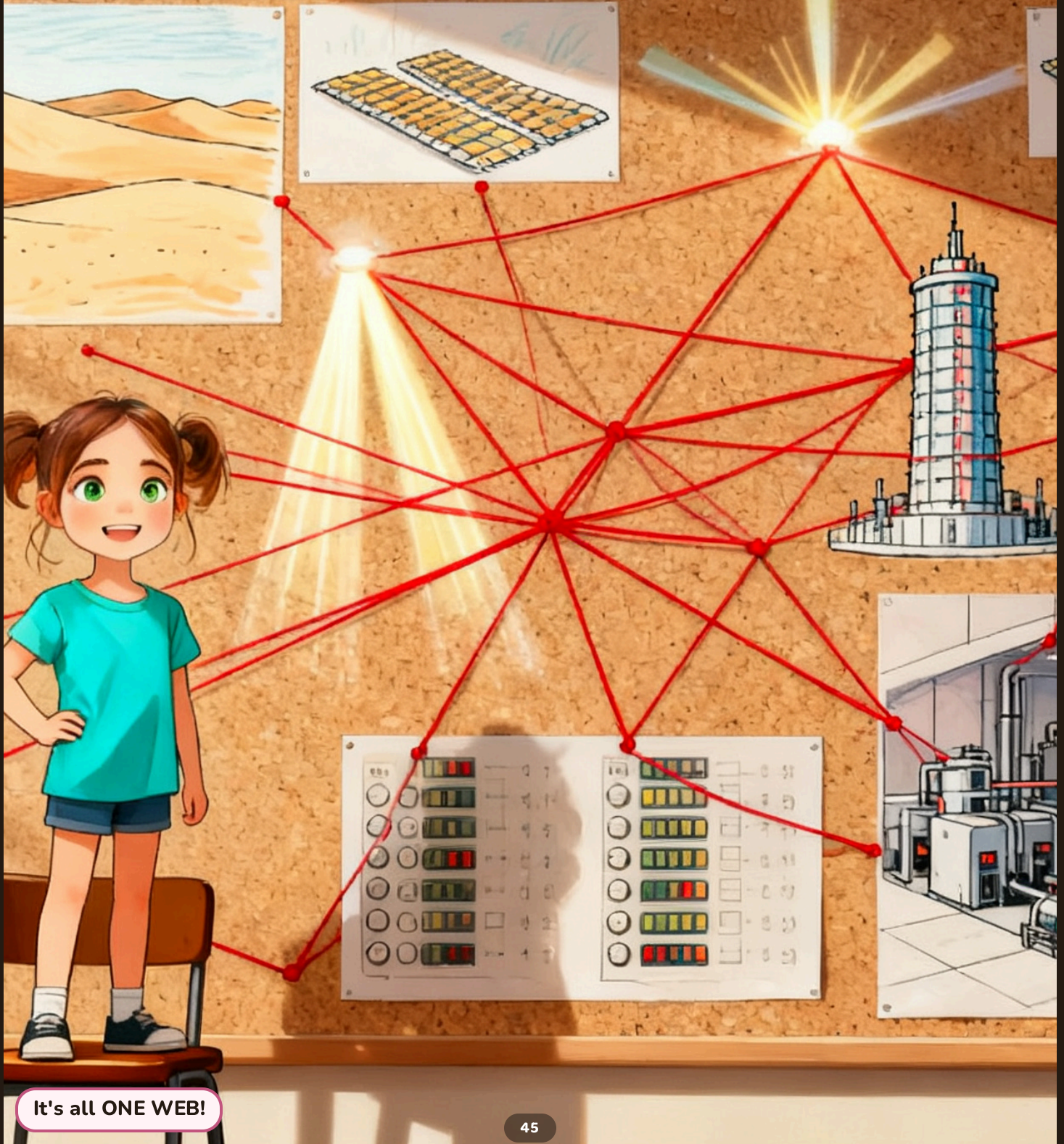
Don't bet on the chip. Bet on the NEED.

SIRI'S SECRET NOTEBOOK

2056 watchlist: helper robots, AI medicine, storm warnings, patient tutors.
Worries: electricity ⚡ confident mistakes, who decides. Rule: bet on needs, not shapes 🌟

THE SECRET NOTEBOOK

Home stretch. Siri pinned every discovery to her wall and joined them with red string.



It's all ONE WEB!



★ WORTH REMEMBERING

The Science Web, one breath: sand purified to nine nines → a city printed with violet light in a hundred layers → eighty billion switches that flip each other → a million small hands multiplying grids → a wall of dials nudged by a trillion mistakes → memory stacked into towers to keep the hands fed → and heat carried away by waterfalls.



★ WORTH REMEMBERING

The Business Web, one breath: real value on both sides → a toolkit everybody learned → a whole machine, not a part → boring reliability you can rent by the hour → profits poured straight back in → a road paved twenty years early — patrolled by Charlie's inversion, judged by Warren's court.

The true test: she retold the **WHOLE** thing to her little cousin. With sock puppets. He got it.



Sock-puppet test: **PASSED.**



SIRI'S SECRET NOTEBOOK • THE LATTICEWORK

Charlie's word for my string-wall: a **LATTICEWORK** of mental models.
Twelve from ONE card: purity · printing-not-carving · the switch · parallel
hands · grid math · learning-by-error · bandwidth · thinking-per-watt ·
whole-machine design · network effects · patience-as-strategy · invert. ✨

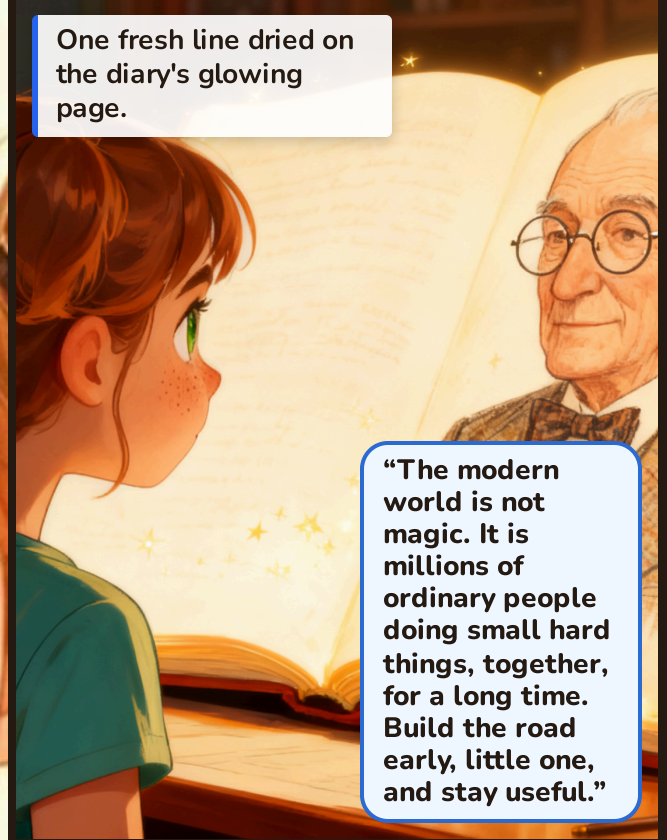
COMING HOME

Her own bed. Morning. The compass: quiet. The house: somehow different.



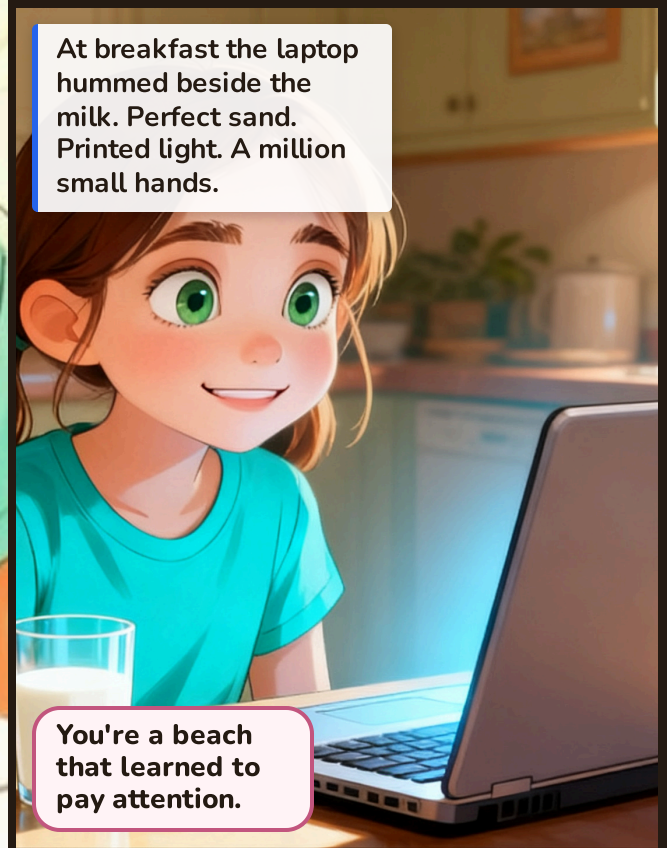
Was it real? It FELT real...

One fresh line dried on the diary's glowing page.



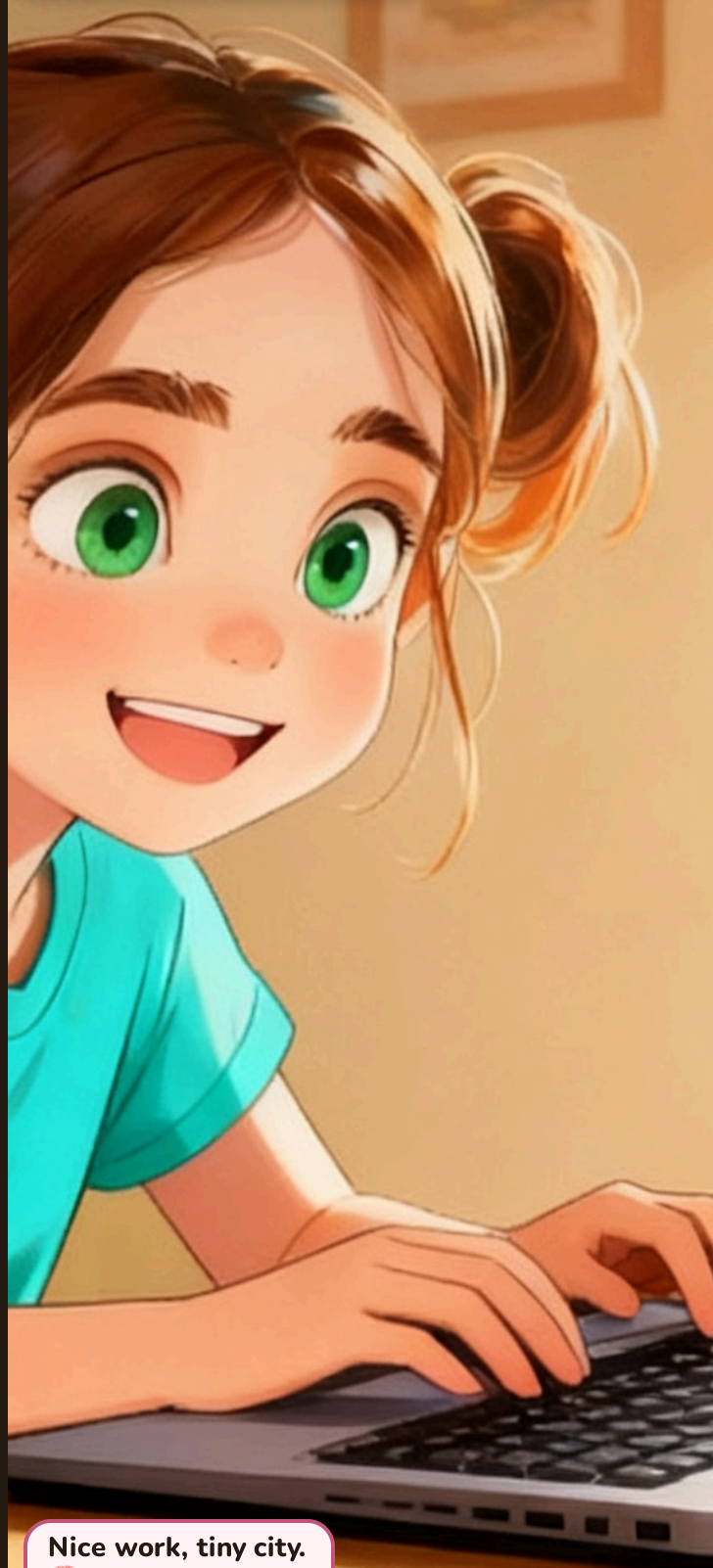
"The modern world is not magic. It is millions of ordinary people doing small hard things, together, for a long time. Build the road early, little one, and stay useful."

At breakfast the laptop hummed beside the milk. Perfect sand. Printed light. A million small hands.



You're a beach that learned to pay attention.

She asked it one question,
just to watch. Two seconds.
Somewhere, a hall of
machines had thought.



Nice work, tiny city.



She hugged the diary tight.
Somewhere far away, a
hall of machines thought
quietly through the night.



Show me the next
one, Grandpa. ♥



★ WORTH REMEMBERING

Next time a machine answers you, feel it: nine-nines sand printed with violet light — eighty billion switches — a million small hands multiplying grids — a wall of dials nudged by a trillion mistakes — heat carried off by waterfalls. A chip is no longer just a chip.

Nothing, from now on, is just anything.



SIRI'S SECRET NOTEBOOK · VOLUME CLOSED

Seven stops. Twelve models. One napkin in a diner. One road paved twenty years early. But the compass just twitched at the thin grey slab inside the laptop — the patient boss that got there FIRST...  



OUR PHILOSOPHY

We believe the greatest gift we can give a child is the ability to think.

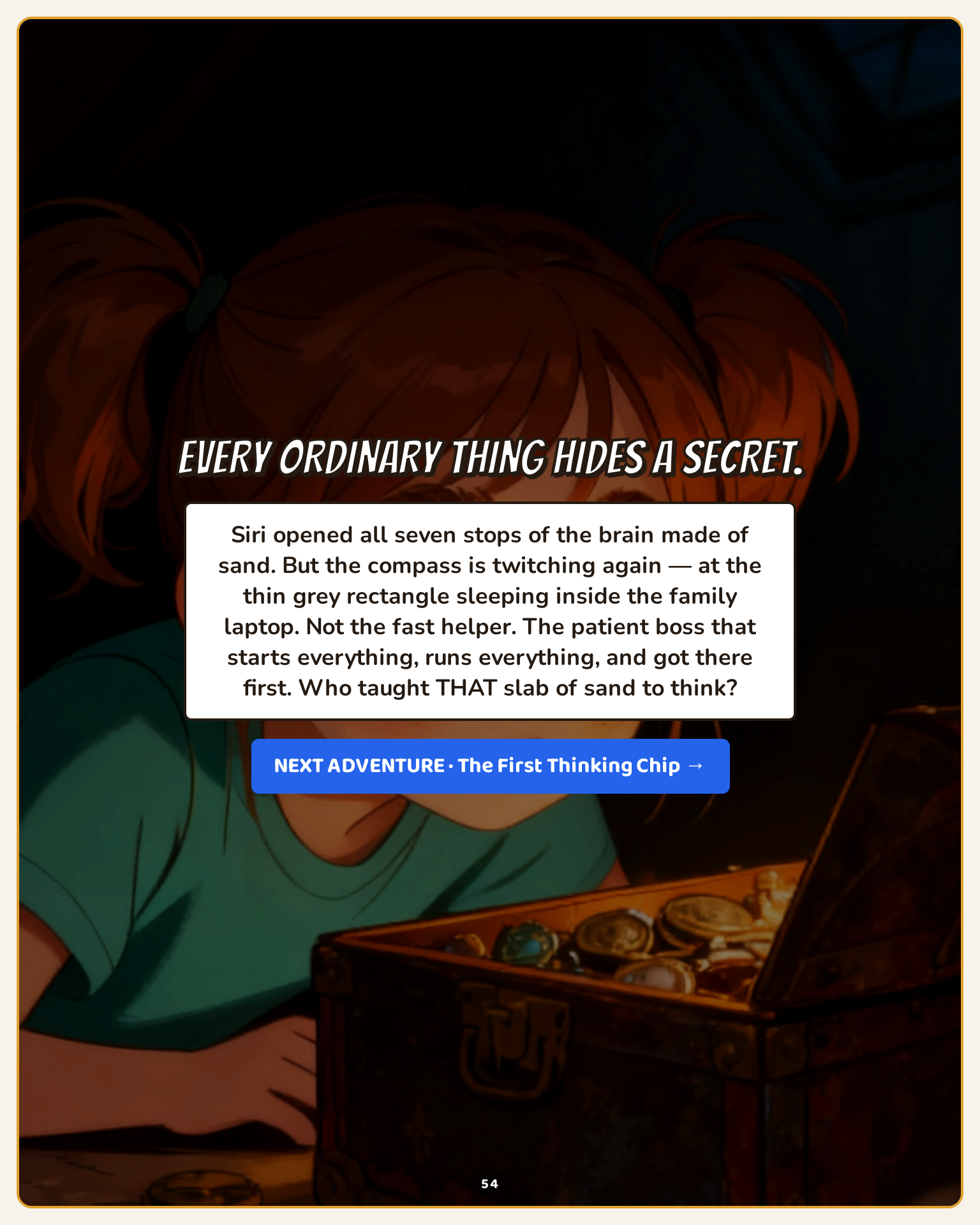
Inspired by the multidisciplinary thinking of [Charlie Munger](#) and the rational, long-term philosophy of [Warren Buffett](#), our comics connect science, technology, business, history, and human behavior to show how the real world works.

Every story begins with a scientific idea and follows its journey into innovation, industry, and the businesses that create value for society. Along the way, children learn that great companies are built on curiosity, experimentation, integrity, and long-term thinking.

Our goal is not to teach children how to invest, but to help them build the mental models needed to understand the world, ask better questions, and think independently.

The companies featured in *The Great Company Adventures* are educational case studies—not investment recommendations. They show how knowledge, innovation, and perseverance turn ideas into products, services, and enduring businesses.

LEARN THE SCIENCE. • UNDERSTAND THE BUSINESS. • THINK FOR LIFE.

A girl with red hair in pigtails, wearing a green shirt, is looking into an open wooden treasure chest. The chest is filled with gold coins and jewelry. The scene is dimly lit, with a warm, orange glow from the chest's contents.

EVERY ORDINARY THING HIDES A SECRET.

Siri opened all seven stops of the brain made of sand. But the compass is twitching again — at the thin grey rectangle sleeping inside the family laptop. Not the fast helper. The patient boss that starts everything, runs everything, and got there first. Who taught THAT slab of sand to think?

NEXT ADVENTURE · The First Thinking Chip →