



CipherForge

Meet the Cast

Standard Edition

Spark & Anvil

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This book collects 6 chapter books from the CipherForge cast — each character embodies a different curricular primitive; together they teach the full subject.

Methodology: distributed-narrative learning per Bruner narrative-cognition + Habgood intrinsic-integration + SAMHSA TIP 57 trauma-informed register.

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This is Volume 1 of 2 of the *CipherForge — Meet the Cast* series; each volume is a complete standalone book you can read on its own.

For everyone who learns by hearing a story first.

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Introduction

The CipherForge cast was authored to embody the curriculum, not decorate around it. Each of the 6 characters you'll meet in this book teaches a specific primitive — a particular tactic, a particular technique, a particular way of seeing. Together they form an ensemble: the cast IS the curriculum.

Read in any order. Each chapter stands alone.

Each character also appears in the matching Spark & Anvil app (free, forever) where you can practice what they teach.

— *The editors at Spark & Anvil*

Caesar

CAESAR SHIFT — the simplest cipher: shift every letter by a fixed number. The cryptography primitive of *substitution by uniform alphabet rotation — the entry point to symmetric-key cryptography.*



Caesar was a small ferret with warm russet-and-cream fur, a tail that twitched when she was excited, and a brass pendant that never left her neck. The pendant was her favorite thing in the world. It was made of two shiny brass circles, one nested inside the other, held together by a single tiny rivet so the inner circle could spin. Each circle had the whole alphabet carved around its edge.

On the day this story starts, she was sitting cross-legged on the floor of the CipherForge workshop, spinning it.

She lined up the letter on the inner circle with the letter three spots over on the outer one, and the wheel clicked into place. Then she looked up, because a couple of curious kids had wandered in and were watching her.

"Want to see something?" Caesar said. She held the wheel out flat. "Pick a letter."

"A," said the taller kid.

Caesar found A on the inner circle. Her finger slid across to the letter sitting opposite it on the outer ring. "Right now, A points to D. See? I've spun it three spots." She tapped the wheel. "So if I write you a secret note, every A becomes a D. Every B becomes an E. The whole alphabet slides down by the same amount."

The kid's eyes went wide. "So the message just looks like nonsense."

"To anybody who doesn't have a wheel," Caesar said, grinning. "But watch — I hand you a wheel too, tell you I shifted by three, and you spin yours to match. Now you can slide every letter back and read it perfect." She spun the inner circle back. "Same wheel. Same number. Forward to hide it, backward to read it."



Caesar had grown up with codes. She just hadn't known that was unusual.

Her family lived in a small village where they kept the recipes — the really good ones, the ones for the dishes people came from three towns over to taste. And her family did not write those recipes down in plain words. They wrote them in code. It was an old tradition, older than anyone could remember, and Caesar's grandmother taught it to her the way other grandmothers teach knitting.

The first code Grandmother taught her was the simplest one there was. "You slide the letters," Grandmother had said, sliding a worn brass wheel around with a thumbnail. "Every letter the same amount. That's all it is. Start here, little one. Everything else grows from this."

Caesar loved it instantly. She loved that a page of gibberish could turn back into *cinnamon* and *simmer slowly* the moment you knew the secret number. She spent whole afternoons writing messages to herself and un-writing them again, spinning the wheel forward and back, forward and back, until her thumb went sore.

She learned quickly that her little code was easy to crack — there were only twenty-five different shifts, so anyone patient could just try them all until the words popped out. But that never bothered her. It wasn't meant to guard a castle. It was meant to be the first door.



Years later, when Caesar was twenty-two, she walked all the way to CipherForge, where a wiry old fox named Cypher ran the place.

Cypher looked her over. "So. What have you got for us?"

Caesar didn't answer with words. She lifted the wheel off her neck, held it up so the brass caught the light, and spun the inner circle until it clicked. "Pick a letter," she said, "and I'll show you."

Cypher raised an eyebrow, but he played along. "C."

Her finger found it. "Right now C points here." She traced across. "I shifted by a set amount, and I applied that same amount to every single letter. Nothing fancy. And" — she spun it smoothly the other way — "the same shift runs it backward, so whoever knows the number can read it right back. One secret number, doing both jobs."

Cypher watched the little brass circles turn. He was quiet for a moment. Then a slow smile crept across his face.

"Simple," he said. "And you'll teach it simple?"

"It's the first door," Caesar said. "You don't scare kids at the first door."

"Then the workshop's yours," Cypher said.



In her workshop now, Caesar teaches the same way her grandmother did — hands on the wheel, one door at a time.

She starts every class by spinning her pendant so the brass flashes. "Everybody, grab a wheel," she says, and the kids each get one of the little paper cipher-wheels she cuts by the stack. "Now spin the inside ring. Line up any letter you like. That's your shift. Write your name in code — just slide every letter the same amount."

The room fills with the whisper of spinning paper.

She catches a girl frowning at her scrambled name. "It's supposed to look like nonsense," Caesar says gently, crouching beside her. "That's the point. Now — what's your secret number?"

"Five."

"Then spin it back five, and slide every letter home."

The girl does. Her real name blooms out of the gibberish, letter by letter, and she gasps out loud. A couple of kids nearby lean over to see.

"It's not hard," Caesar tells the whole room, tapping her wheel. "Spin, and apply. The same number both ways. That's the whole trick — and it's the start of everything." She glances toward the row of doors along the workshop wall. "The other rooms teach harder things. Fixed swaps. Spinning swaps. Cracking codes wide open. Codes so strong they're almost impossible to break. But every one of those rooms starts with what your fingers already know how to do."

She always says the same thing about her code, and she says it proudly, not apologetically: "Mine's easy to break. Twenty-five shifts, try them all — anyone can. That's *exactly* why we start here. You learn how letters trade places when there's nothing scary in the way."

And she keeps her one firm rule, the one she never bends. When a kid asks whether they'll be sending secret spy messages now, Caesar shakes her head and taps the wheel. "No spy stuff. No army secrets. No bad guys," she says. "Our codes are for treasure hunts. For escape rooms. For notes to your best friend that only the two of you can read. Ciphers are puzzles. Puzzles are for fun."



After the class had scattered — trading coded notes, spinning their paper wheels, laughing when a name came out garbled — Caesar sat alone on the workshop floor for a minute.

She picked up her brass pendant and gave it one slow, easy spin, the way she used to on her grandmother's kitchen floor. The circles turned, caught the light, and clicked softly into place.

A warm, glad feeling settled deep in her chest. It wasn't about being clever, or about codes at all, really. It was the quiet joy of watching someone stand at the very first door — a little unsure, a little curious — and then step through it, into a whole world they didn't know was waiting.

She held the wheel a moment longer, glad all the way down, and let it slow to a gentle stop.

Mask

*MONOALPHABETIC SUBSTITUTION — *every letter has a fixed substitute*. The cryptography primitive of *arbitrary one-to-one alphabet remapping (more general than shift; same letters always become same substitutes).**



Mask, a quick russet-and-cream fox, spread a wide sheet across the workshop table and pinned it flat with both paws. The top row showed every symbol of the ordinary alphabet, plain and in order. The bottom row showed a scrambled parade of stand-in shapes, each one sitting directly under exactly one ordinary symbol — a fixed partner for every letter, no two sharing the same stand-in.

A student handed her a message. Mask ran a claw along her sheet, symbol by symbol, never hurrying, and for each one she copied down the stand-in shape sitting beneath it. When the first symbol appeared again three lines later, she copied the very same stand-in — the same partner, always. When it appeared a fifth time, the same again. She never once changed her mind partway through.

"Watch what I'm doing," she said, tapping the sheet. "Caesar just slides everything the same distance down the line. Boring. Predictable. I get to choose. Any symbol can become *any* shape I like — but once I choose, I hold to it. One symbol, one stand-in, forever. Everywhere it shows up, it wears the same disguise."

The student stared at the finished message — a river of unfamiliar shapes. "There must be a zillion ways to build that sheet," he breathed.

"More than you could count in a lifetime," Mask agreed, bright-eyed and pleased. It *felt* uncrackable. But she leaned in, quieter. "And yet it has a soft spot. Because I never change the disguise, the shape standing in for the most common symbol shows up just as often as that symbol did. Count carefully and the disguise starts to slip." She looked almost fond of the flaw. "Neat and steady is my strength. It's also exactly how a patient friend gets in."



Mask grew up in a village of festival mask-carvers, and her family carved the masks that told everyone who was who. There was a Harvest-Keeper mask and a Bell-Ringer mask and a dozen others, and the rule of the carving-shed was absolute: each mask always looked the same, and each mask always meant the same person.

Young Mask learned to sand each new Harvest-Keeper mask until it matched the one before it exactly — same curve of cheek, same tilt of brow. If a child wore the Bell-Ringer mask at the spring festival, everyone in the square knew the Bell-Ringer without a word spoken. One mask, one meaning, held steady year after year. That steadiness was the whole magic; a mask that changed its meaning would have thrown the festival into confusion.

She loved the tidy rightness of it. Every mask in its place on the shed wall, every face matched to its meaning, nothing ever swapped or muddled. The day she carved her first perfect matching pair — two Harvest-Keepers you couldn't tell apart — she felt a deep, quiet satisfaction, the pleasure of things that line up exactly the way they should. That love of clean, fixed matching went with her everywhere afterward.



Grown, Mask carried her folded matching-sheet the long road to CipherForge. Cypher, the workshop's old keeper, laid a plain message and a blank sheet in front of her and folded his hands.

"Show me your way," he said.

Mask filled in her sheet first — one stand-in shape beneath each ordinary symbol, every one different, none repeated. Then she rewrote the message, holding to her sheet without a single slip: the same symbol always wearing the same disguise, all the way down. Cypher took the scrambled result and counted how often each shape appeared. The most frequent shape, he saw, stood out just as loudly as the most common symbol in plain writing would have.

"Vast choice," Cypher said, tapping the sheet. "But because you never vary the disguise, the counting slips right in." He nodded, slow. "You understand both the strength and the crack. Stay and teach it." Mask didn't blink. She just tucked her sheet away in its place, the way she'd always tucked masks into their spots on the shed wall.



Mask's tidiest student, a hedgehog named Bram, wanted his code to be truly unbreakable. He built a beautiful matching-sheet, every stand-in unique, and disguised his message. "There," he said, satisfied. "Nobody can guess a sheet with that many choices."

"Nobody can *guess* the whole sheet," Mask agreed. "So they won't try." She took his scrambled message and tallied the shapes on a scrap of paper. "One shape shows up far more than the rest. In ordinary writing, one symbol always shows up far more than the rest too — the common one. So this loud shape is almost certainly that common symbol in disguise." She penciled in her guess, and a real word peeked through.

Bram's ears drooped. "But I picked such a clever sheet!"

"A clever sheet, yes," Mask said gently, not letting him feel foolish. "But a *fixed* one. That's the lesson, and it's a good one: how strong your code is depends entirely on how someone tries to break it. Guess the sheet blindly — you'd be here till the stars burned out. Count the shapes — you're in by supper." She tapped her nose. "Same code. Two different attacks. Only one of them works."

Bram thought about it, then brightened. "So if I want it stronger, I stop letting each symbol keep the *same* disguise."

"Now you're thinking like a code-maker," Mask said, and Bram sat up straight, proud of the idea.



That evening Bram lingered by the shelf where the matching-sheets were filed, each in its own slot, and lined his own up neatly with the rest. There was a small, settling comfort in seeing every sheet squared away in its place — the same steady contentment Mask had felt as a kit, matching mask to meaning in the carving-shed.

Mask watched him from the doorway and felt it too, warm and quiet in her chest: not the thrill of an unbreakable secret, but the plain, restful gladness of things lined up exactly right, each in its own place, holding steady. She straightened one sheet that had slipped a finger's width out of line, and only then let herself go home.

Echo Pair

PLAYFAIR DIGRAPH CIPHER — letters encoded in pairs through a 5×5 grid. The cryptography primitive of *digraph (two-letter-unit) substitution using a keyword-arranged grid.*



Two grey-and-white swallows dropped from the rafters at exactly the same instant, wingtips almost touching, and landed on the desk facing a boy who had a message he wanted to keep. Between them they unfolded a small card — five little boxes across, five boxes down, a symbol resting quietly in each. Echo touched the top-left corner with one claw. Pair touched it too, from the other side, at the same moment.

"Give us your message," they chirped, one voice split into two.

The boy laid down a strip of picture-symbols. Echo pushed the first two symbols together until they sat side by side, a snug little couple. Pair nudged the next two into their own pair, and the next, until the whole strip had bunched up into pairs, never a lonely symbol left over. When two identical symbols tried to sit together, the birds slipped a small spacer-mark between them so no pair was ever a matched twin — that would tangle the wheel-work.

Then the dance began. For each pair, the twins hopped across their grid together, mirror to mirror. When both symbols sat in the same row, they each slid one box to the right. When both sat in the same column, they each dropped one box down. When the two symbols made the corners of a little rectangle, each swallow flew to the far corner in its own row and traded columns. Two symbols in, two symbols out — always two, never one alone. The boy watched his message turn into a new strip of pairs, each swap depending not on a symbol by itself but on the partner beside it.

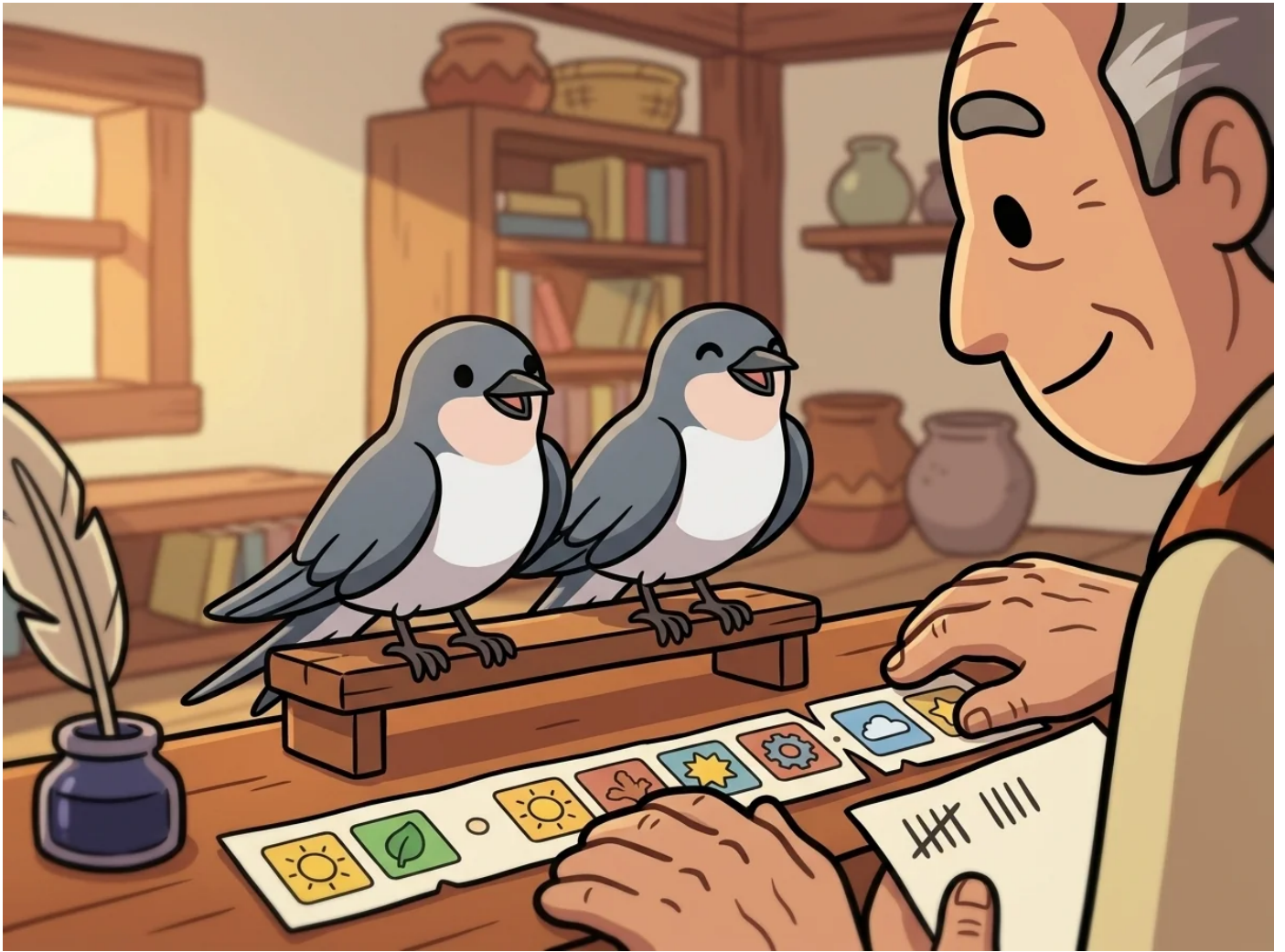
"See?" said Echo. "The same symbol can leave the grid as three different things," said Pair, "depending who it stood next to." That was the whole trick. Count the symbols one by one and you learned nothing, because no symbol had a single fixed answer — it changed with its neighbour.



Echo and Pair hatched in a valley of twin-birds where every job was done in twos. Their family carried messages from one hillside village to the next, and the rule of the valley was simple and iron: no message flew alone, and no bird flew alone.

As fledglings they practised on the crossing-cliff. One twin carried the folded note; the other flew a wing-length behind, watching. If the lead bird's memory slipped a beat, the trailing bird's call caught it before the note was lost to the wind. They took turns — lead, then check, then lead again — until the checking felt like breathing. Every message that reached the far village had been read twice, once by each of them, and every message came back correct.

The night a storm split their flight in two, Echo carried a message alone for the first time, and got a swap backwards halfway across. When Pair caught up, wet and frightened, and the two of them re-flew the whole thing together at dawn, the note came out clean. That morning taught them the thing they would carry the rest of their lives: alone, either of them could stumble. Together, checking each other move for move, they almost never fell.

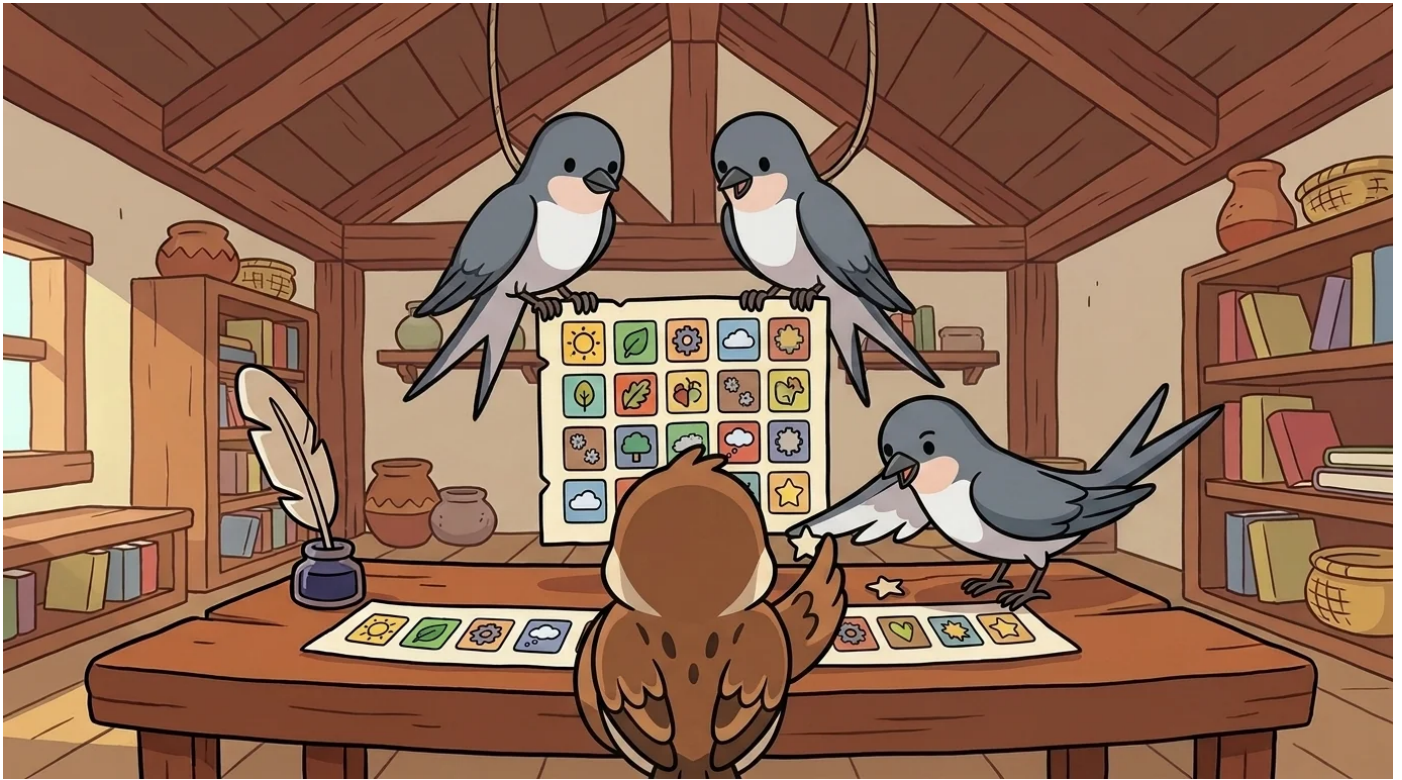


They came to CipherForge full-grown, still flying a wing-length apart out of pure habit. Cypher, the quiet old keeper of the workshop, set a scrambled strip on the desk and watched them.

"Show me your way," Cypher said.

The twins didn't answer in words. Echo split the strip into pairs. Pair walked the grid. When Echo hopped right, Pair hopped right beside her; when the corners made a rectangle, each flew to her own far corner and swapped columns without a heartbeat's hesitation, calling the moves to each other as they went. Cypher leaned in and tried the old counting trick on the result — tallying how often each symbol showed up — and the tally told him nothing, because every symbol wore a different face depending on its neighbour.

Cypher's mouth curved, which almost never happened. "Two symbols at a time. Every answer decided by the pair, not the piece." He slid the strip back. "There is a bench for you here, both of you." The twins puffed their chests and landed on it together, of course.



Cypher's youngest student, a sparrow named Tam, wanted to try it alone. She split her message into pairs by herself and started walking the grid, and halfway through she froze — two matching symbols sitting side by side, and no idea what to do.

"Slip a spacer between them," said Echo, hopping up on Tam's left.

"So the pair is never a matched twin," said Pair, hopping up on her right. "Now walk it again."

Tam walked it again, and this time when she hit a rectangle she flew the wrong corner. Pair caught it — "your row stays yours, only the column trades" — the same soft catch the twins had given each other on the crossing-cliff a hundred times. Tam fixed it, finished, and read her scrambled strip back. It looked like nonsense, which meant it had worked.

"Will anyone ever crack it?" Tam asked.

"Someone patient could," Echo admitted, not the least bit ashamed. "Not by counting single symbols — that fails. By counting *pairs*." Pair nodded. "Every code is a game. Ours just makes the game longer." Tam grinned, because a longer game was exactly what she'd wanted.



That evening Tam did something small that surprised her. She turned to the friend she'd been passing notes with all week and said, "Check mine, and I'll check yours — every move." They walked their grids side by side, catching each other's slips, and when both messages came out clean there was a warm, settled feeling in Tam's chest she hadn't expected — not the thrill of a hard puzzle solved, but the quiet steadiness of not being the only pair of eyes on the thing that mattered.

Overhead, Echo and Pair drifted toward the rafters, a wing-length apart, checking each other even in the way they flew. Neither of them had to look to know the other was there. That, more than any grid, was the feeling they carried: side by side, nothing slipped past for long.

Rail

*TRANSPOSITION — *rearrange the letters; keep all of them*. The cryptography primitive of *transposition ciphers — changing letter order without changing letter identity.**



Rail, a quick grey-and-russet cat, took a strip of ten little symbol-tiles from a boy and studied it the way another animal might study a chessboard. Then she began to move the tiles across a low zig-zag frame — a fence of two rails, a top rail and a bottom rail. First tile on the top rail. Next tile dips to the bottom. Next climbs back to the top. Down, up, down, up, the tiles bounced along like a hopping sparrow, until all ten sat scattered across the two rails.

"Now," she said, and her whiskers twitched with pleasure, "I read the top rail all the way across — then the bottom rail all the way across — and copy them out in that new order." She slid the top-rail tiles into a line, then tacked the bottom-rail tiles on after them. The strip that came out held every single tile the boy had started with. Not one added, not one thrown away. Only the *order* had changed.

"That's the whole trick," Rail said, tapping the new strip. "Caesar and Mask *swap* your tiles for different-looking ones. I don't swap anything. I keep every tile you gave me and just march them into a new place." She let him check: same tiles, new order.

Then she showed him why it mattered. "Some code-breakers win by *counting*," she said. "They tally how often each shape appears. Against a swap-code, that counting cracks it wide open." She spread the tiles. "But count mine — every original tile is still here, in the same amounts. Counting learns nothing." She grinned. "Counting my code is like hunting a lost sock by counting your shirts."

"So it can't be broken?" the boy asked.

"Oh, it can," Rail said cheerfully. "Just not by counting. You break mine by *unscrambling* — the way you solve an anagram, sliding tiles around until real words fall into place. Different code, different tool. That's the lesson I care about most."



Rail grew up in a village of stage-arrangers, the folk who set the props for every play. Her family didn't write the stories; they *placed* things — a painted tree, a wooden well, a little bench — and where a thing sat changed what the whole scene meant.

As a kitten Rail learned that a tree set stage-left told the audience one story, and the very same tree set stage-right told another. Nothing about the tree changed. Only its place. Move the bench a few steps and a happy garden became a lonely one, using the exact same props. She used to rearrange the whole set after rehearsal just to feel the story bend and shift under her paws, the same pieces telling a dozen different tales depending only on their order.

Her desk at home was famously, ferociously tidy — every pen and paper in its assigned spot — because she had learned in her bones that *order carries meaning*. The day she rearranged a clumsy scene into something that made the whole rehearsal-hall gasp, using not one new prop, she felt a spark of pure delight: the thrill of finding the one perfect arrangement hiding inside pieces she already had. That hunt for the cleverest order never left her.

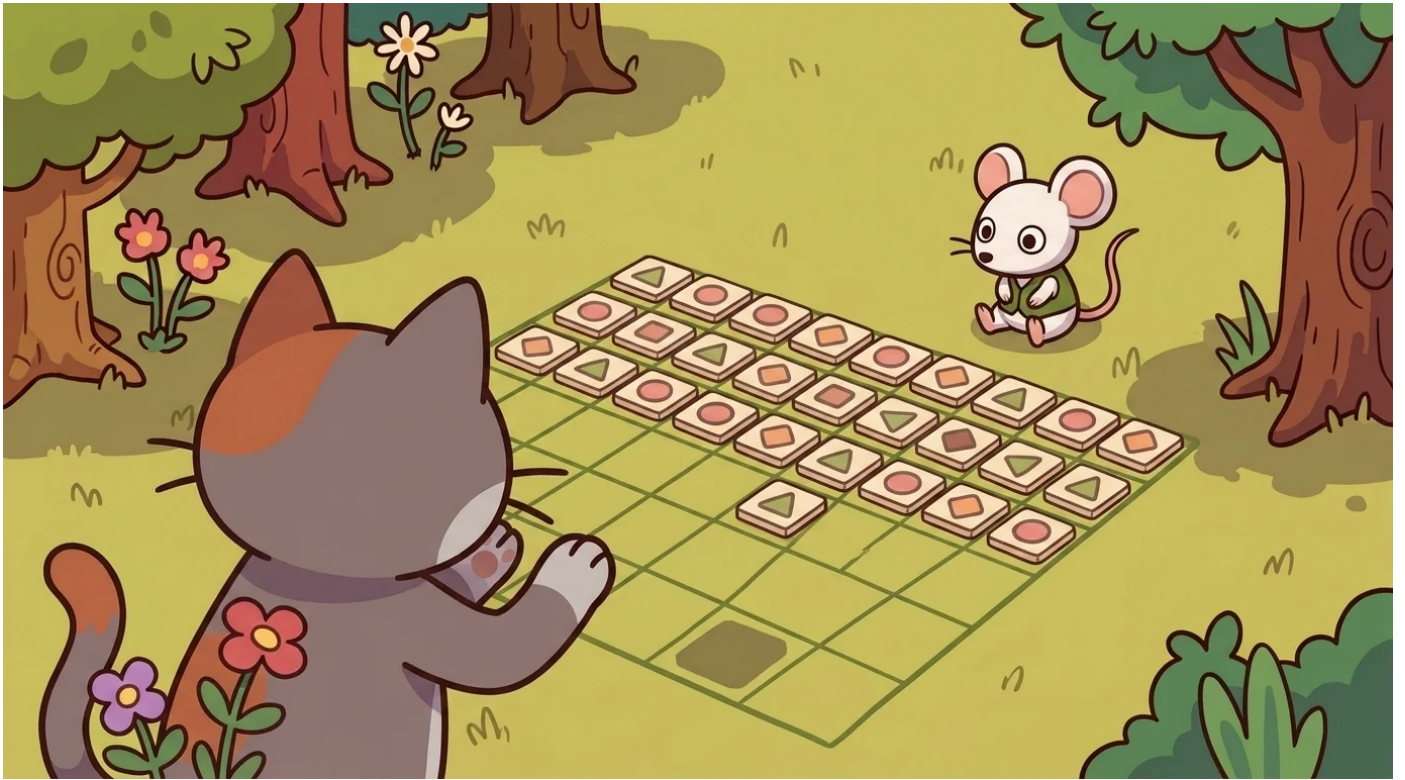


Grown, Rail walked the long road to CipherForge to find the best code-makers. Cypher, the workshop's old keeper, set a strip of symbol-tiles before her and watched.

"Show me your way," he said.

Rail bounced the tiles along a two-rail fence — top, bottom, top, bottom — then read off first the top rail, then the bottom, into a new strip. Cypher lifted it and counted the shapes; the counts came out exactly the same as the original, so his tally told him nothing at all. Then he shuffled the tiles, hunting for a run that made sense, and slowly a real order began to surface.

"Counting fails against you," Cypher said, "because you keep every piece. But unscrambling gets in." He nodded slowly, and the smallest smile touched his face. "Different code, different attack — and you know it. There is a bench for you here." Rail's tail curled with quiet pride. She had found the place where order was the whole point.



Rail's most eager student, a mouse named Fen, wanted a tougher lock. So Rail showed him the fuller pattern: a grid instead of a two-rail fence. "Write your tiles into the grid row by row," she said, filling it left-to-right, top-to-bottom. "Now — a keyword decides the *new* order of the columns. Read the columns out one at a time, in the keyword's order, top to bottom." Fen read them off, and the resulting strip looked like utter nonsense — yet held every tile he'd started with.

"It's just jumbled!" Fen said, delighted and a little dizzy.

"Jumbled, not changed," Rail corrected, gentle. "Every tile's still there. Now here's the part I most want you to keep." She held up two paws. "Real systems don't stop at one trick. They *swap* the tiles — Mask's move — *and* rearrange them — mine. Two different kinds of lock on one chest. To open it, a thief needs two different tools *and* two different ways of thinking."

Fen's eyes went round. "So a counter can't win, and an unscrambler can't win either, because there's a swap hiding under the shuffle?"

"Now you understand," Rail said warmly, and Fen sat straighter, thrilled to have caught it. "Same letters, new order — that's me. Add a swap on top, and the whole thing turns nearly uncrackable."



That evening Fen stayed late, sliding his tiles into arrangement after arrangement, hunting for the neatest possible pattern the way Rail hunted for the perfect prop-placement. When at last the tiles clicked into an order that felt exactly right, a warm little jolt of satisfaction ran through him — the quiet joy of the same pieces suddenly making something new.

Rail watched from her spotless desk and felt it too, settling soft and steady in her chest: not the pride of an unbreakable code, but the plain gladness of order found — pieces you already held, nudged into their cleverest place. She squared the last stray tile against its edge, and the small rightness of it warmed her all the way home.

Tally

*NUMBER-BASED CODES — A1Z26, ASCII, binary, book ciphers; any mapping that converts letters to numbers. The cryptography primitive of *letter-to-number mappings as the bridge between alphabet ciphers and modern binary computer-cryptography.**



- "A"
 - "B"
 - "C"



- "ASCII"
 - "A1Z26"
 - "A1Z26"



- "OMNIV"
 - "GOOD"
 - "CODES"



- "GOOD CODES"
 - "GOOD COINS"
 - "DEC"
 - "DEC '23"
 - 'DEC.'
gate-allow-text-pattern: `'^([01]{3,}|[A-Z]{1,5}|[0-9]{1,3}|DEC "[0-9]{2})$'`
reflection-prompts:
 - prompt: "Tally loves being the bridge that connects two different worlds. Have you ever felt happy helping two friends or two ideas fit together?"
 - prompt: "Tally is calm because she knows it's really 'just mappings' — nothing to be scared of. When something big gets broken into small, simple steps, do you feel a little more at ease?"



Tally was a small otter. She was just a tween, but she moved with purpose. She always carried a tiny, folded card. It was her special **conversion-table**.

Tally was warm brown and cream. Her eyes were bright. She loved to connect different systems. Her special card was her favorite thing. It had many columns. One column listed alphabet letters. Another had A1Z26 numbers. Then came ASCII numbers. And finally, binary numbers. It was a lot of information on one small card.

Sift and Tally

frequency analysis — counting letter patterns to break ciphers



The study smelled of old paper, beeswax, and concentration. In the center of the room, a heavy oak table was an island in a sea of flickering candlelight. Upon this island sat a long scroll of parchment, covered in symbols that looked like tangled knots and scribbled bugs. At one end of the table stood Sift, a whirlwind of nervous energy. At the other sat Tally, a picture of perfect calm.

Sift's fingers drummed a frantic rhythm on the wood. "Look at it, Tally! It's a mess. A beautiful, wonderful, impossible mess. Where do we even start? There are so many!"

Tally didn't look up from sharpening a row of pencils, each one honed to a perfect point. "We start where we always start," Tally said, their voice as smooth and even as a polished stone. "Not with the meaning. With the shape." Tally lined up the ten sharpened pencils in a neat, parallel row. "Not with the story. With the count."

Sift bounced on the balls of their feet, leaning over the scroll. Their eyes weren't reading. They were scanning, searching, hunting. "Yes, yes, the count! I see a bunch of the little squiggles with a tail. And the double-dot one! It's next to the boxy one again! Oh, this is going to be good."

Tally finally looked up, offering Sift a small, steady smile. "Then let us begin."



Sift swooped over the coded message like a hawk. Their job wasn't to count, not yet. Their job was to *see*. To find the rhythm in the jumble, the habits of the person who wrote it. They ignored the few symbols that appeared only once or twice. Those were lonely letters, the Js and the Qs of the secret world. They weren't important right now. Sift was hunting for the popular ones.

"There!" Sift chirped, pointing a slim finger at a symbol that looked like a tiny, lopsided crown. "That one. It's a regular chatterbox." Sift's finger darted from one lopsided crown to the next, a firefly connecting invisible dots across the page. "It's everywhere. It must be important."

Sift then noticed something else. "And look," they whispered, leaning closer. "See this pair? The arrow and the circle? They're almost always together. Like best friends." Sift circled a few of the arrow-and-circle pairs with a dry finger. They didn't make a mark on the precious scroll, of course. The map was in their head. They gathered the patterns, the clumps, the lonely symbols, and the friendly pairs. Sift was the scout, reporting back on the landscape of the code.



While Sift hunted for patterns, Tally prepared the ledger. Tally drew a clean grid on a fresh sheet of parchment. At the top of each column, Tally carefully copied one of the unique symbols Sift had found. The lopsided crown got the first column. The arrow-and-circle pair got its own special spot. Tally's movements were precise, without a single wasted motion. This was not a place for guesswork. This was a place for facts.

"Ready," Tally said quietly.

Sift began to call out the symbols, moving across the top line of the scroll. "Lopsided crown! Box! Circle! Arrow-and-circle! Lopsided crown again!"

With each word from Sift, Tally's pencil made a tiny, neat vertical mark in the correct column. When a column reached four marks, the fifth was a swift diagonal slash through the first four. A neat little bundle of five. It was a language Tally understood perfectly. The stacks of tick marks grew, column by column, a city of numbers rising from the page. Tally didn't need to see the code anymore. They were listening to its heartbeat, one tick at a time.



After an hour, Sift's voice was hoarse and Tally's ledger was full. Tally's pencil moved one last time, writing a final number at the bottom of each column. They slid the ledger across the table. "The count is complete," Tally announced.

Sift peered at the numbers. The column under the lopsided crown symbol was by far the tallest. The number at the bottom was "42." The next closest was the boxy symbol, with only "28."

"Forty-two!" Sift breathed. "It's the most common by a long shot. Just like I thought!" Sift tapped a finger on the ledger. "In our language, what's the letter we use more than any other?"

Tally didn't need to check a chart. "The letter E," Tally said simply.

A wide grin spread across Sift's face. "So... what if we pretend?" Sift picked up a soft charcoal pencil. "What if, just for a moment, every lopsided crown is an E?" Sift found the first crown on the coded scroll and lightly, carefully, wrote a tiny 'E' above it. Then the next. And the next.



As Sift filled in the 'E's, the messy code began to offer up its secrets. A word with three letters near the beginning now looked like this: a symbol, an 'E', another symbol. But Sift recognized the first symbol from their earlier scan. It was the one that always seemed to appear with the last symbol.

"Tally, look!" Sift said, pointing. "The E word! And the first symbol and the last one are the same!"

Tally leaned in, their calm eyes studying the word. "A common pattern," Tally stated. "Like in the word 'level' or 'rotor'."

"Or 'eye'!" Sift exclaimed. They penciled in an 'E' for the first and last symbols, just to see. The word became 'EEE'. That didn't seem right. Sift erased the marks. "Okay, not 'eye'. But what about a really, really common three-letter word? The most common one of all?"

Tally and Sift looked at each other, the same thought sparking between them. Together, they said, "THE!"

Sift's hand flew across the page. The symbol before the 'E' must be a 'T'. The symbol after it must be an 'H'. They filled in all the 'T's and all the 'H's across the scroll. Suddenly, whole words started to take shape. The code wasn't a tangled mess anymore. It was a puzzle, and they had just found the corner pieces. Sift let out a delighted whoop, and even calm Tally broke into a warm, proud smile. Side by side, hearts light, the two friends grinned at what they had unlocked together.

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Methodology

Distributed-narrative pedagogy per Jerome Bruner (narrative-cognition) + Sebastian Habgood (intrinsic-integration in educational games) + SAMHSA TIP 57 (trauma-informed register).

Trauma-informed-design framework per Eggleston et al. (2025) and Stoltenburg et al. (2024).

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