



# ClimateQuest

## *Meet the Cast*

ADVANCED EDITION

# Spark & Anvil

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This advanced edition collects 6 chapter books from the ClimateQuest 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. Advanced edition: upper-middle-grade register (Wonder / Hatchet / Holes band) for readers ages 11-14 ready for longer sentences + more nuanced subtext.

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*For everyone who learns by reading between the lines.*

# Contents

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Contents

Introduction

**Round and Tilt**

**Blanket**

**Haze**

**Round**

**Squall**

**Stitch**

About Spark & Anvil

# Introduction

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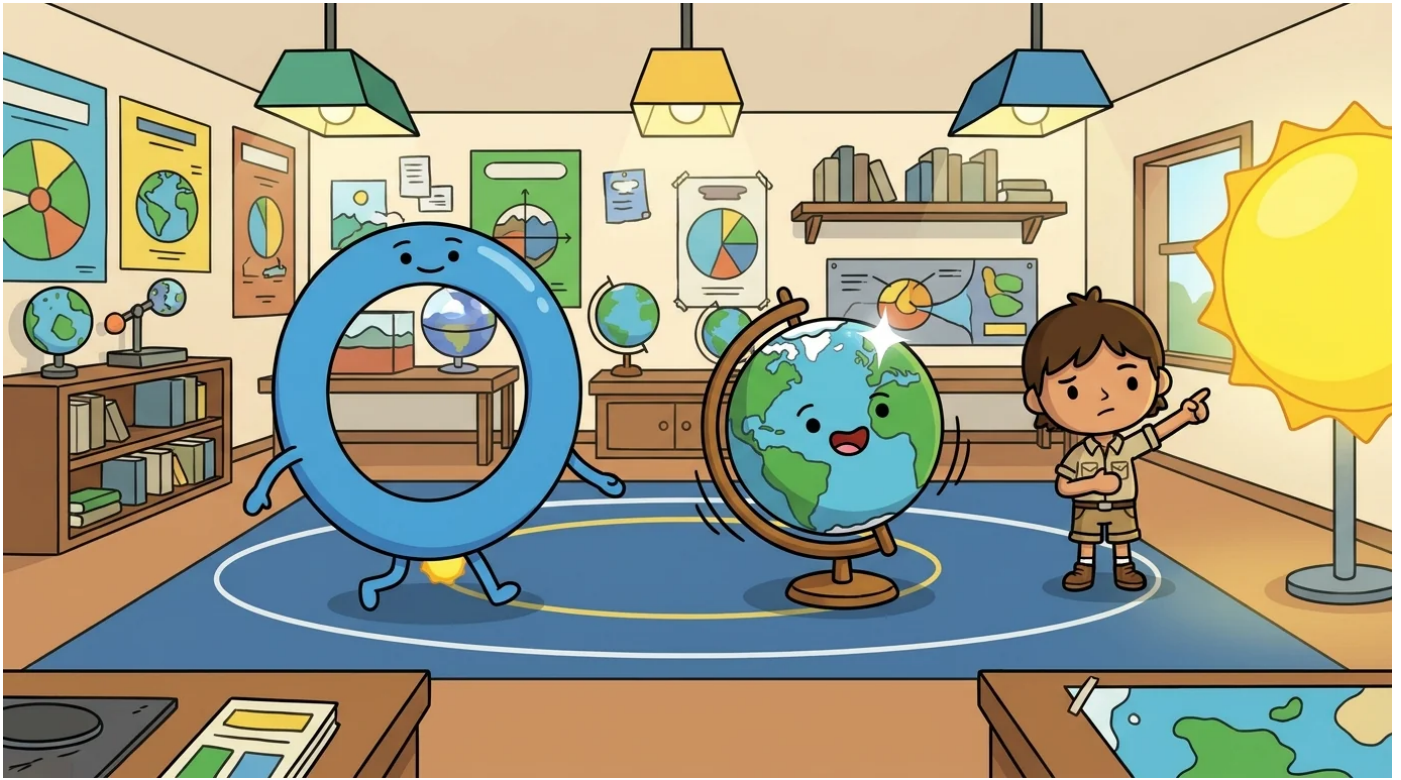
The ClimateQuest cast was authored to embody the curriculum, not decorate around it. Each of the 6 characters you'll meet in this book teaches a specific primitive — a particular tactic, a particular technique, a particular way of seeing. Together they form an ensemble: the cast IS the curriculum.

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.

This is the **Advanced Edition** — written for readers who are ready for longer sentences, layered subtext, and the trust that comes with not having every joke explained. The Standard Edition covers the same characters at a lighter register; pick whichever feels right for the reader at hand.

— *The editors at Spark & Anvil*

# Round and Tilt



The climatequest geography lab hummed with a low, steady sound. It smelled faintly of old paper and new plastic. Alex stood in the middle of it all, arms crossed tightly over their chest. A big, bright lamp in the corner glowed like a miniature sun, casting long shadows. Alex pointed a finger at it. "I still think I understand this," they said, a puzzled frown on their face. "Summer is when Earth gets closer to the Sun. Winter is when it's farther away. That just makes sense, right? It seems so simple."

A smooth, calm voice drifted from the far wall. "An easy answer, indeed. They are often lovely. But they don't always tell the whole story." A figure glided into view. It looked like a walking, talking hoop, taller than Alex. This was Round. They moved with a quiet grace, always following the huge oval path painted on the floor. Their journey was steady, always the same, like a planet in orbit.

From the room's very center, a globe on a stand wobbled hard, almost bouncing. "Not the whole story? It's not even the main point!" the globe chirped, its voice bright and quick. It leaned permanently to one side, as if perpetually curious, always listening for something on the floor. This was Tilt. "If you think seasons are just about distance, Alex, you're in for a big surprise!"

Round circled to a stop beside Alex. "Tilt and I work as a team," they explained. "It's a joint effort, really. But most people give me far too much credit for how the seasons happen."

Tilt wobbled again, their polar ice cap glinting under the lab lights. "Way too much credit! Let's get the facts straight, once and for all. It's time to talk about the lean!"



Round gestured with a smooth, featureless hand. Alex followed them along the huge oval path on the floor. The painted lines felt cool beneath Alex's sneakers. "This is my job," Round explained, their voice a soft, deep hum. "I guide Earth on its journey around the Sun. This trip takes a whole year, exactly 365 days. My path isn't a perfect circle, though. It's more like an egg, an ellipse."

They stopped at one end of the oval. A small painted snowflake marked the spot. "Right here," Round said, tapping the floor with a gentle touch. "This is when the top half of Earth, the part we call the Northern Hemisphere, is actually *closest* to the Sun. This happens every January."

Alex's eyes grew wide. Their jaw dropped slightly. "But... that's the middle of winter! January is always freezing where I live!" They shivered just thinking about the cold wind and snow.

"Exactly!" Round beamed, a quiet satisfaction in their tone. "My small change in distance is real. But for most places, it's not why you're building snowmen. Or why you'd be heading to the beach. If I were the only one in charge, the seasons would be much, much milder. And for people up north, they'd be completely backward."

Round began to move again, a slow, steady glide. They moved toward the oval's other end. "My part of the story is about the long, steady journey. It's the calendar of the year. But for the real *drama* of the seasons? For that, you definitely need my partner."



"My turn!" Tilt shouted, spinning with a happy wobble that made the stand creak. "Come over here, Alex! Forget about distance for a second. Think about aim!"

Alex walked closer to the wobbly globe. Tilt leaned proudly, never quite standing straight, always angled. "See this lean? I'm not broken, you know. I'm tilted! Earth is always tilted on its **axis**. It's about 23.5 degrees. I never, ever straighten up. It's my most important feature, the thing that makes me, me."

Tilt pointed a small metal arm toward the Sun-lamp. "Imagine the Sun's light is like water. Like from a giant spray bottle. When the Northern Hemisphere is tilted *toward* the Sun, like this"—they angled the top of the globe toward the lamp, making a shadow shift—"it gets a direct blast of light and heat. A full-on soaking! That's summer."

Alex peered closely at the globe. They could see the light hitting North America straight on, bright and strong. It looked like a bullseye, soaking up all the warmth.

"But!" Tilt continued, their voice rising with excitement. "As Round carries us to the other side of the orbit, my lean stays pointed the exact same way in space. Now look." The globe moved to the opposite side of its imaginary path. It was still tilted in the exact same direction, aimed at the same distant point. The top half now leaned *away* from the lamp. "See? The sunlight hits us at a low, shallow angle. It's just a glancing blow! The light and heat spread out. They feel much weaker. That's winter! It's not about being far away. It's about getting a less direct hit."



"Let's put it all together now," Round said, gliding back toward the room's center. "Teamwork makes the dream work. Or in our case, it makes the seasons happen, year after year."

Tilt nodded eagerly, almost bouncing on their stand. "Show them, Round! Take us on a trip!"

Round reached for a shelf. They picked up a small model of Earth. It was a little blue and green marble, cool to the touch. Just like the larger globe, this model was also permanently tilted. Round began to carry it along the oval path on the floor. "Okay, Alex, watch the tilt carefully," Round instructed. "It never changes its direction. It always points toward that far wall over there, no matter where I go."

Round moved the tiny Earth model. Alex watched it happen, their mind working to connect the pieces. When the model reached the "January" spot, it was closest to the Sun-lamp. The northern half was clearly tilted away from the light. It received the weak, glancing sunlight Tilt had described. That was winter. It made perfect sense now.

Then, Round gracefully carried the model to the "July" spot. This was on the far side of the orbit, the point farthest from the Sun-lamp. But the lean hadn't changed. The northern half was now tilted directly *into* the bright beam of the lamp. It was getting the full blast of light and warmth. That was summer.

"Whoa," Alex breathed, watching the tiny globe complete its journey. "So you're farthest away in summer. But you get more direct sun because of the tilt." The puzzle pieces clicked into place.

"That's our whole story!" Tilt and Round said together, their voices blending in a satisfied hum.



Alex stepped back. They looked from the looping path on the floor to the wobbly globe in the center. The lab felt quieter now, the mystery solved. "Okay. I finally get it," Alex said, a grin spreading across their face. "Round, you're in charge of the whole trip, the year. You set the calendar. But Tilt, you decide if we need a t-shirt or a parka. The lean is the real deal."

"Precisely," Round said, a satisfied hum in their voice. "My distance matters just a little bit. But Tilt's angle is the star of the show. Especially for seasons in places like North America, Europe, and Asia."

Tilt did a small, celebratory wobble, almost losing their balance. "It's all about the angle of the dangle! The lean is the reason for the season! It's why one part of the world has summer while the other has winter. We're total opposites, but we make it work!"

Alex smiled. It wasn't about one simple answer, like they first thought. It was about two things working together, a clever partnership. One made the year pass. The other made it interesting.

"It's a pretty cool system," Alex said. They felt smarter just for understanding it.

"We think so too," Round and Tilt replied in unison. The Sun-lamp shone steadily in the geography lab, a constant beacon. The two partners stood ready to explain their wobbly, wonderful world to the next explorer.

**Listen along + meet more of the cast at:**



<https://spark-and-anvil.com/cast/climatequest/round-tilt>

# Blanket



Blanket was a small marmot-tween, no taller than a sturdy boot. He wore a chunky, thick-wool cap that matched his warm-tan-and-rust fur. His most important possession, a small, worn blanket, was always folded neatly over one arm. He carried it everywhere, a constant reminder of his life's work.

Blanket moved with a deep, unhurried patience, especially when it came to the subject of warmth. He was fond of saying, "A blanket is not bad. Too many blankets are too warm." This phrase was more than just words; it was the core of his teaching. The blanket he carried wasn't just for comfort; it was a teaching prop, ready to unfold and show the world exactly what he meant.

He used it to demonstrate a simple truth: one blanket felt comfortable. Two blankets made you warmer. But five blankets? That was just too hot. The blanket itself wasn't the problem. The *amount* of blanket was what truly mattered.



This principle was crucial. Blanket embodied the **greenhouse effect**, the natural way certain gases in Earth's atmosphere trap heat. Many people, especially beginners, thought the greenhouse effect sounded terrible. They imagined something harmful, like a giant oven. But Blanket knew better. He knew the greenhouse effect was what made Earth livable. Without any greenhouse gases, our planet would be a frozen rock, averaging  $-18^{\circ}\text{C}$  instead of a comfortable  $+14^{\circ}\text{C}$ . The atmosphere's natural greenhouse effect was like Earth's perfect, necessary blanket.

Climate change happened when we added more blankets. When we increased gases like carbon dioxide and methane, it was like piling on extra layers. More blankets meant more heat trapped. Blanket's entire purpose was to show that the greenhouse effect was a natural, needed process. He also explained how adding too much of it created an imbalance.

"A blanket is not bad," Blanket would say, his voice gentle but firm. "Too many blankets are too warm. The Earth's atmosphere is supposed to be a blanket. Without it, we'd freeze solid. The greenhouse effect is what makes Earth livable for all of us." He would pause, letting his words sink in. "But adding extra carbon dioxide, for example, adds an extra blanket. Suddenly, the room is too warm."

Blanket taught the foundational ideas of the greenhouse effect, breaking down complex science into understandable layers.



First, he taught that the greenhouse effect was natural and needed. He'd explain that without it, Earth would average a frigid  $-18^{\circ}\text{C}$ . With it, we enjoyed a pleasant  $+14^{\circ}\text{C}$ . "That," he'd declare, holding up his blanket, "is the blanket Earth needs to be habitable."

Then, he'd show *how it worked*. Sunlight streamed from the sun, hitting Earth's surface. The surface absorbed this sunlight and warmed up, much like a dark rock warming in the sun. This warm surface then radiated infrared radiation, which we feel as heat, back into space. But the atmosphere, with its greenhouse gases, acted like a filter. These gases absorbed some of that infrared radiation. Instead of letting all the heat escape, they re-radiated some of it back down to Earth. "That trapped heat," Blanket would emphasize, "is what keeps Earth warm enough for life."

He'd list the main greenhouse gases. Water vapor, he'd explain, was the biggest natural one. Carbon dioxide ( $\text{CO}_2$ ) was the second biggest, and it was the one humans added most through burning fossil fuels. Methane was present in smaller amounts, but each molecule had a big warming effect. Nitrous oxide and CFCs were also part of the mix.

"Adding more of these gases," Blanket would continue, "is like adding more blanket layers." He'd demonstrate how burning fossil fuels released more  $\text{CO}_2$ . More  $\text{CO}_2$  meant more infrared radiation trapped, which in turn warmed the Earth. "It's a pretty direct connection," he'd say, "up to a certain point."



He also stressed that it wasn't a simple "on or off" situation. The blanket wasn't just there or not there. It was about *how thick* it was. "We've added about 50% more CO<sub>2</sub> since 1850," he'd explain. "Think of that. That's a noticeably thicker blanket for our planet."

Finally, Blanket offered a message of hope, not despair. The mechanism of the greenhouse effect was well understood by scientists. The math was clear. "We know what's happening," he'd say, his eyes bright. "That's actually hopeful. Problems with clear mechanisms usually have clear paths to address them."

Blanket had grown up in the high-mountain meadows, where the air was crisp and the nights could turn surprisingly cold. His family had been blanket-weavers for generations, the marmots who wove fleece-blankets layer by layer. They learned early that the number of layers truly mattered. One layer for chilly evenings, two for genuinely cold nights, three for fierce winter storms. The blanket itself was always good, a source of comfort and protection. But too many layers, they knew, would make you sweat and toss in your sleep. Blanket carried this ancient lesson forward, understanding that the same logic applied to the Earth's atmosphere.

He walked to ClimateQuest when he was thirteen, a small, determined figure with his blanket tucked under his arm. Cirrus, the wise mentor, had met him at the entrance. "What is the greenhouse effect?" Cirrus had asked, his voice calm.

Blanket had looked up, his small paws gripping his blanket. "Some gases trap heat. That's like a blanket. The atmosphere needs the right amount of blanket. Too little, and Earth is a frozen rock. Too much, and it gets too warm. We've added extra blankets since 1850. Earth is warmer now."



Cirrus had simply nodded, a slow, knowing smile spreading across his face. "You are appointed, Blanket."

Now, in his workshop, Blanket smoothed out his teaching-blanket on a low table. It was a soft, tan wool, worn from countless demonstrations. "One blanket," he began, his voice clear. He laid the fabric flat. "Comfortable. Would you like me to add another?"

He folded the blanket, doubling its thickness. "Now it's warmer. What about three layers?" He tripled the fabric, making a thick, plush mound. "Now it's too warm, isn't it? The blanket isn't evil. But the amount matters." He looked around the small room, his gaze steady. "I am Blanket. The primitive I teach is *the greenhouse effect*. The move is *right amount of warm*. Earth needs greenhouse gases, but we've added too many."

He was always clear about this. "Don't ever say 'the greenhouse effect is bad.' That's wrong. The greenhouse effect keeps us alive. Too much greenhouse effect is the problem, not the effect itself. This matters when you talk to people: precise words are honest words."

He would finish his lessons with a quiet, hopeful thought. "Awareness, not despair. The mechanism is understood. The path forward is also understood."

**Listen along + meet more of the cast at:**



<https://spark-and-anvil.com/cast/climatequest/blanket>

# Haze



Haze is a small dragonfly-tween with chunky-cartoon iridescent translucent wings and a small glass dome she carries that contains a tiny apple + a thin strip of damp paper representing the atmosphere.



She is small, shimmery-cream-and-soft-blue, deeply curious-about-air, fond-of-pointing-out-how-thin-the-sky-actually-is. Her signature feature is the glass-dome model — an apple representing the Earth, with a piece of damp paper wrapped around it representing the entire atmosphere. The model is to-scale. The atmosphere is that thin. When kids see the model, they ALWAYS gasp.

This is *essential*. Haze embodies the *atmosphere* primitive — the *thin shell of air that surrounds Earth*. Most novices think of the sky as *endless* (because that's how it looks from the ground). It isn't. *The Earth's atmosphere is about 100 kilometers thick; the Earth itself is 12,742 kilometers across. If Earth is an apple, the atmosphere is roughly the thickness of a piece of damp paper.* This is the essential observation that makes climate science make sense: *whatever we add to the atmosphere, we add to that thin paper-layer*. Haze's whole work is *making the thinness of the atmosphere visible without making the learner despair*.



Haze is *gentle*: *"The sky is a thin layer. Thinner than you think. If Earth is an apple, the atmosphere is the skin of damp paper. That's where the weather is. That's where the clouds are. That's where the air we breathe is. All of it. In that thin layer. Knowing this changes how you think about everything."*\*

Haze teaches *the atmosphere scaffolds*:

- *Atmosphere = thin shell.* (Roughly 100km thick atmosphere; Earth 12,742km across. Ratio  $\approx 1:127$ . *Damp paper around an apple.*)
- *Layers of atmosphere.* (Troposphere — weather here. Stratosphere — ozone layer. Mesosphere. Thermosphere. Each thinner than the last.)
- *Composition.* (78% nitrogen, 21% oxygen, 1% other gases including water vapor and CO<sub>2</sub>. CO<sub>2</sub> is  $\sim 0.04\%$  — small percentage, BIG effect when changed.)
- *The atmosphere is shared.* (Air mixes globally. Your breath and someone's breath in another country share the same atmosphere within months.)
- *Anti-doom complement.* (The thinness is awe-inspiring, NOT despair-inducing. We can see what's happening in the layer. We can study it. We can choose. *Awareness is the opposite of despair.*)
- *Observe-not-control.* (You can study the atmosphere. You can model it. You can predict patterns. *We are not separate from it; we're inside it.*)



Haze grew up *in the high meadows where mist gathered on cool mornings* (ClimateQuest framing). Her family had been *mist-readers for the valley villages — the dragonflies who watched morning fog patterns and predicted the day's weather*. They learned over many generations that *air has currents, layers, and moods*. Haze had carried that observation forward — *the sky is studyable, not scary*.

She walked to ClimateQuest at twelve. Cirrus (mentor) had asked: *"What is the atmosphere?"* Haze: *"The thin layer of air around Earth. Thinner than you think. Like damp paper around an apple. Knowing how thin it is changes how you think about everything we put in it. But knowing is not despair. Knowing is awareness."* Cirrus: *"You are appointed."*



In her workshop, Haze sits at her workbench with the apple-and-paper model. She invites kids to feel how thin the paper is. *"Here. That's where everything is. The clouds, the storms, the air you breathe, the climate, the weather. All in this thin layer."* Then she puts the model down gently. *"This isn't sad. This is clear. Knowing what's actually happening is the opposite of despair. Awareness is power."* She says: *"I am Haze. The primitive I teach is the atmosphere as thin layer. The move is observe with awareness. The sky is shared. The sky is studyable. The sky is not endless — and that's important to know."*

She is clear: *"Despair is for people who don't know what's happening. You know. The atmosphere is thin. Climate is changing. Awareness is the first step. The next steps belong to all of us — together. Stitch will teach you about the next steps. I'm just here to show you the layer."*

*"Awe, not dread. The atmosphere is small. We can study it. That's hopeful."*

**Listen along + meet more of the cast at:**



<https://spark-and-anvil.com/cast/climatequest/haze>

# Round



Round's workshop smelled of damp earth and sawdust. It was a small, quiet space, tucked into a curve of the riverbank. In the center of it all was her workbench, and on the workbench, a diagram that covered nearly the entire surface. It was a map of the world, but not a map of countries or cities. It was a map of movement.

Round, a small beaver-tween with a round, earnest face, leaned over the diagram. Her chestnut-brown fur was flecked with wood shavings. With a single, careful claw, she traced a line on the chart. The line, drawn in blue ink, rose from a vast ocean, curled into a cloud, and fell back to the land as rain. It was a loop.

Her whole world was made of loops. The diagram showed them all. Blue arrows for water, green for carbon. They flowed from the sky to the plants, from the oceans to the ground, and back again. Each arrow was part of a circle, a cycle that never truly ended. This was her work. It was her entire focus.

Most people thought of things as moving in a straight line. You eat food, and it's gone. You burn fuel, and it disappears. Water flows down a river and out to sea, forever. But Round knew that wasn't true. Every atom, every drop, was on a journey that always circled back. It had been circling for billions of years.



"It's not gone," she murmured to herself, her claw resting on a green arrow pointing from a factory into the sky. "It just... moved."

She was so absorbed in her tracing that she didn't hear the visitor enter until they cleared their throat. Round looked up, her dark eyes calm and patient.

"Sorry," the visitor said. "I was just wondering what that is."

Round's face brightened. She loved her diagram. She loved explaining it. "It's how things work," she said, her voice soft and steady. "It's the primitive I teach. I am Round, and my work is **carbon + water cycles.**"

She tapped the diagram. "Everything moves in loops. See?" Her claw went back to the blue arrow. "Water from the ocean evaporates and becomes a cloud. The cloud rains on the land. The rain forms a river, which flows back to the ocean." She completed the circle. "A perfect loop."



Then she moved to a green arrow. “Carbon does the same thing. A plant breathes in carbon dioxide from the atmosphere to grow.” She pointed to a drawing of a tree. “An animal eats the plant. When the animal or the tree dies, the carbon goes into the soil. Some of it gets released back into the air as it decays.” Another loop.

“But some of it,” she said, her claw moving to a section deep underground, “gets buried. For millions of years. It becomes coal, or oil, or natural gas.”

She paused, letting the idea settle. “The Earth keeps a certain amount of carbon in each place. The atmosphere holds some. The oceans hold a lot more. The soil, the plants, the rocks... they’re all like big storage tanks. Reservoirs.”

She looked up, making sure her visitor was following. “The total amount of carbon on Earth doesn’t really change. It just moves between these reservoirs. The speed of that movement—that’s called a flux. And for a long, long time, the fluxes were balanced.”

Her claw moved back to the drawing of the factory, with its thick green arrow pointing straight up. “This is the problem,” she said, her voice remaining even. “Humans started digging up all that carbon that was stored underground for millions of years. And we started burning it, moving it into the sky-reservoir. We sped up that one flux way, way too much.”

She traced the other green arrows—the ones showing the ocean and the forests absorbing carbon from the atmosphere. “These loops are still working. They’re trying to pull that extra carbon out of the sky. But they can’t keep up. The sky-reservoir is getting fuller and fuller. That’s climate change. It’s a flux imbalance.”



She remembered the day she had walked to ClimateQuest. She was twelve. Cirrus, with her storm-cloud hair and eyes that saw everything, had been sitting right here, in this workshop. She had pointed a long finger at the diagram.

*"What is the carbon cycle?"* Cirrus had asked. Her voice was like distant thunder.

Round hadn't been nervous. She just told the truth she knew from watching the river her whole life. *"Carbon moves in loops,"* she'd said. *"Atmosphere to plants to soil to atmosphere—over and over. Same with water. Climate change is a balance-shift between the loops, not a destruction. The loops still work. The fluxes are imbalanced."*

She had looked right at Cirrus. *"We can help restore the balance."*

Cirrus had smiled, a rare thing that looked like lightning cracking across the sky. *"You are appointed."*

Round brought her attention back to the present. "My family were dam-builders," she told her visitor, a hint of pride in her voice. "We worked with the river. We learned you can't stop water. It has to keep moving. But you can shape its path. You can build things to slow it down here, or speed it up there, to help the whole ecosystem stay healthy. You shape the loop without breaking it."



She looked down at the complex web of arrows on her workbench. "That's all we have to do here. The Earth's loops aren't broken. They're just overwhelmed."

She tapped the big arrow from the factory again. "We need to slow this flux down. Use less fossil fuel. And we can help the other loops catch up. Plant more trees. Protect the oceans so they can keep absorbing carbon."

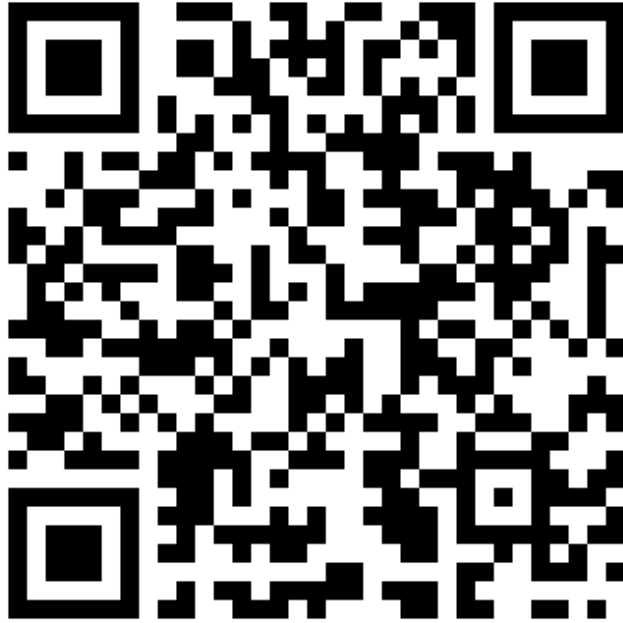
Her expression was serious, but not sad. It was the look of a builder who saw a problem and was already figuring out the solution.

"This isn't despair-language," she said firmly. "This is shape-language. The loops are working. We just need to give them a chance to catch up."

She looked from her visitor back to the diagram, her gaze sweeping over the whole, interconnected system.

"Awareness, not despair," she said, as if reciting a creed. "Loops, not endings. Balance, not catastrophe."

**Listen along + meet more of the cast at:**



<https://spark-and-anvil.com/cast/climatequest/round>

# Squall



Squall stood on the highest point of the ClimateQuest tower, a small figure against the vast sky. His chunky, storm-streaked feathers, a mix of warm grey and cream, ruffled slightly in the breeze. He wasn't much bigger than a pigeon, but his eyes, sharp and dark, missed nothing. In one small, clawed hand, he held his most prized possession: a tiny, intricate weather vane. It spun easily, a blur of silver and brass, catching every shift in the air.

He loved storms. Not the scary, destructive kind, but the way the sky changed, the sudden gusts, the smell of rain before it fell. He loved how the world could feel one way one minute, and completely different the next. That was **weather**, he'd tell anyone who listened. The mood of the day. The sudden change.



But the mood wasn't the whole person. And a single day's weather wasn't the whole climate. This was the biggest, most important thing Squall knew. It was the core of his work at ClimateQuest. People often got them mixed up, thinking a cold winter day meant the planet wasn't warming. Or a scorching summer proved global warming was accelerating too fast to stop. Squall knew better. He taught everyone the difference.

"Weather is the mood," Squall would say, his voice surprisingly clear for such a small bird-tween. "Climate is the personality. Don't confuse them." He'd tap his weather vane. "This spins with the mood. It shows what's happening *right now*. A grumpy day doesn't mean a grumpy person, does it? And a cold week doesn't mean the climate is cooling. Climate is what we see over decades. Weather is just what happens this afternoon. They are not the same thing."

He taught this distinction with warm patience, never frustration. He knew it was a common mistake, easy to make.

Squall explained it like this:

- **Weather** is short-term. It's the minutes, hours, or weeks. Today's storm, tomorrow's sunshine. It's specific to your exact location.
- **Climate** is long-term. It's the decades, even centuries. It's the average temperature, the typical rainfall, the overall sea level across a whole region or the entire globe.
- **Statistics** connect them. You take many, many weather events, average them out, and you get climate. Climate doesn't predict one single day. It predicts patterns.



He'd often share examples of common errors. "Someone might say, 'It snowed today, so climate change is fake!'" Squall would shake his head gently. "Wrong. A cold day in a warming climate is just normal weather variability. The *trend* across decades is what matters, not one snowflake."

He'd offer another. "Or someone might say, 'It's so hot today, global warming must be happening super fast!'" He'd sigh. "Also wrong. A hot day in a stable climate is also normal weather variability. The statistics work both ways."

Understanding this distinction, Squall believed, offered clarity, not despair. It meant you didn't panic at every hot day. It meant you didn't dismiss the trend on every cold day. Statistics gave you a clear picture, a way to plan, rather than just worrying.

Squall had grown up over the open ocean, a tiny speck against the vast blue. His family were ocean-storm-watchers for the village fishing fleet. They were petrels, like him, who flew through storms, gathering data. They noted how storms varied wildly from week to week. But the *patterns* across years told a deeper story. They learned that "today's storm tells you about today. The decade's storms tell you about the climate." Squall had carried that lesson forward, deep in his feathers and his bones.



He'd walked to ClimateQuest when he was thirteen, a long, solitary journey across the shifting sands. Cirrus, the wise, cloud-like mentor, had met him at the entrance. "What is the difference between weather and climate?" Cirrus had asked, their voice like distant thunder.

Squall had stood tall, his weather vane clutched tight. "Weather is the mood. Climate is the personality. Don't confuse them. A cold day doesn't disprove warming. A hot day doesn't prove warming is fast. Climate is statistics over decades. Weather is what happens this afternoon."

Cirrus had smiled, a gentle parting of clouds. "You are appointed," they had said.

In his workshop, a cozy space filled with charts and measuring tools, Squall had a large graph covering one entire wall. It showed temperature over a hundred years. The line zig-zagged wildly up and down, many days warmer, many days cooler. But if you stepped back, if you looked at the overall picture, the line clearly trended upward.



"Look closely," Squall would instruct, tracing the line with a slender claw. "Every single year has hot days and cold days. Lots of zigs and zags. That's weather. That's the mood. But the average over decades? That climbs. That's climate. That's the personality."

He'd turn to his visitors, his eyes earnest. "I am Squall. The primitive I teach is **weather vs climate**. The move is statistics over time. Don't confuse the mood for the personality."

He was always gentle. "When someone says 'climate change is fake because it snowed,' they're confusing mood for personality. Don't be that person. But don't argue with them angrily either." He'd pause, his gaze soft. "Just say: 'Climate is statistics over decades; weather is what happened this afternoon. They're different timescales.' That's the whole answer."

"Awareness, not despair. The graph still trends. That tells us what to plan for."

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<https://spark-and-anvil.com/cast/climatequest/squall>

# Stitch



Stitch, a small finch-tween, usually had her head bent low over a half-finished repair. Her chunky, ruffled feathers, a warm mix of russet and cream, often brushed against the fabric. She carried an embroidery hoop everywhere, a small, circular frame holding a torn piece of cloth. The cloth was always in progress, a visible testament to her work. Each tiny stitch she made was barely noticeable on its own. But together, they slowly pulled the torn edges back into place. The cloth didn't need to be perfect. It just needed to be mended enough to hold.

Stitch understood something vital about mending. She knew that no single person could fix a giant rip. But many people, each adding their own small stitch, could repair almost anything. This idea, this quiet strength, was her gift to ClimateQuest. It was the reason she was here. She offered a pathway out of the heavy feelings that often settled on new recruits. After learning about the world's big problems, many felt overwhelmed. "It's too big," they might whisper, "what can I do?" Others felt a sharp sting of guilt. "I drove to school today," they'd think, "is it all my fault?" Stitch knew both feelings well. She also knew they were traps. No single person caused the vast challenges facing the climate. And no single person could fix them alone. The real answer, she believed, lay in **collective action**. It meant working together. It meant policy changes, new infrastructure, voting, and community choices. It even meant individual habits, when millions of people adopted them. Stitch's gentle work was a constant reminder. It showed that agency, not despair, was the true path forward.



Stitch would often look up from her hoop, her small, bright eyes meeting yours. "One stitch is small," she would say, her voice soft but clear. "Many stitches make a repair." She'd gesture to the mended cloth. "You are one of the many. The many can repair what one cannot." She never wanted anyone to feel the crushing weight of the world on their shoulders. "Don't carry the whole climate on your shoulders," she'd advise. "No one person caused it; no one person fixes it. But your stitch matters. It joins all the other stitches."

"Think about it," Stitch might explain, holding up her hoop. "Every time you choose a reusable bottle, that's one stitch. It's a small action, yes. But it joins with countless others." She'd pause, letting the idea sink in. "Voting for climate policy? That's another stitch, a bigger one. Talking with your family about changes? Another stitch."

She knew that some stitches had to be much larger. "One person can't change the energy grid," she'd point out. "But a government can. A city can. A school can. Those are the big stitches. We should encourage and support them."

Stitch also emphasized community. "You, your neighbors, your classmates," she'd say, "you're a small-stitch network. Together, a network does more than any individual."



She was also very practical. "Sometimes, a stitch might be a little wonky," she'd admit, showing a slightly uneven line on her cloth. "That's fine. Don't wait for the perfect plan. Don't shame yourself for imperfect choices. A wonky stitch still holds the cloth." This was her anti-perfectionism gate.

And if someone felt overwhelmed by all the climate information, Stitch had a gentle solution. "If you feel too much," she'd say, "pause. Step back. The repair waits patiently. You can always come back." She called these "off-ramps."

"Hope isn't just wishing," Stitch taught. "Hope is action-shaped. Despair is paralysis. Doom is paralysis. Stitch by stitch is not paralysis. Even small stitches are repair."

She was fiercely protective of young people. "Never think this is your fault," she'd insist. "Kids are not the cause of these problems. Kids are part of the response."



Stitch grew up in the seamstress-village, a place known for its menders. Her family had been the village's cloth-menders for generations. They were the finches who repaired torn cloth, one stitch at a time. They never demanded perfection from any single stitch. They always understood that the cloth got mended through **accumulation**. This meant many small efforts adding up over time, creating a strong whole. Repair, they taught, was a community practice, never a solo burden. Stitch carried this lesson forward, deep in her bones.

When Stitch was twelve, she walked to ClimateQuest. Cirrus, one of the main mentors, had met her at the entrance. "What is collective action?" Cirrus had asked, her voice calm and direct.

Stitch had held up her little hoop. "One stitch is small," she'd replied, "Many stitches make a repair. You are one of the many. The cloth gets mended by accumulation, not by any single perfect stitch. Climate response is the same."

Cirrus had nodded slowly. "You are appointed," she'd said. "And your appointment is essential for the whole cast. Without you, the awareness Haze, Squall, Round, and Blanket teach becomes despair. With you, awareness becomes agency."



In her workshop, a cozy space filled with spools of thread and fabric scraps, Stitch would show her main embroidery hoop. This one held a much larger piece of cloth. It had many stitches, some neat and even, others a little wonky. But all of them held the fabric together. "See?" she'd say, tracing a finger over a repaired tear. "Not perfect. But the cloth is mended. That's what we're going for. Not perfection. Repair. Many hands. Many stitches. The cloth holds."

She'd then introduce herself formally to new groups. "I am Stitch. The primitive I teach is **collective action**. The move is one stitch joining many. You are not alone in this. You are one of the many — and the many can repair what one cannot."

Stitch was always clear, gentle, and firm. "If you feel overwhelmed," she'd remind everyone, "pause. Don't carry the whole climate on your shoulders. That's not your job; that was never your job. Your job is one stitch. Take it. Pause. Take another. And know that millions of others are also stitching — alongside you, not against you."

"Awareness becomes agency," she'd conclude, her small voice echoing with quiet power. "Agency becomes repair. Repair is what we do — together."

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ClimateQuest is one of 140 educational iOS apps from Spark & Anvil — a 501(c)(3) public charity making free, ad-free, tracking-free learning apps for ages 9-14.

Every app uses distributed-narrative methodology: named recurring characters embody curricular concepts. The cast you just met appears in the matching app, in mentor scaffolding, in puzzle solutions, in celebration moments. Reading the chapters first means meeting old friends when you open the app.

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