

Inside the weird and delightful origins of the jungle gym, which just turned 100

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This story starts in the fourth dimension.

Or, more specifically, with a British mathematician who, in the late 1800s, was intrigued by the fourth dimension and how to teach disinterested children about it.

Charles Hinton wore a lot of hats. He wrote sci-fi stories before there was sci-fi — he called them "scientific romances." At Princeton, where he worked for a time as mathematics instructor, he invented a baseball pitching machine powered by gunpowder. He also practiced polygamy, which was against both the mores and laws of his native England. And when he was convicted of bigamy in the 1880s, he was forced to move his young family to Japan where he found work teaching mathematics.

We will save all of that for the biopic, because for the purposes of *this* story, Hinton was the unintentional inspiration behind the jungle gym — the patent for which has just turned 100.

It turns out that the history of the jungle gym, and its sibling the monkey bars, is full of weird and delightful twists and sub-plots that take us from Japan to suburban Chicago and touch on child development theories and, yes, theoretical math.

Imagining dimensions — in bamboo

Hinton was a mathematician who explored the concept of the fourth dimension and how to represent it. His model of a tesseract as a way to represent the fourth dimension in geometrical space has since inspired a long lineage of science fiction writing and movies — from [A Wrinkle in Time](#) to [Interstellar](#).

Yet it was while living in Japan that Hinton struggled to get his students to adequately wrestle with the concept of the fourth dimension.

"He said, you know, the reason these students can't grasp the fourth dimension is because they were never exposed to the *third* dimension as children," says Luke Fannin, a primatologist and Ph.D. candidate at Dartmouth College, who became obsessed with finding out where the term "monkey bars" came from (more on that later) and ended up [becoming something of a Hinton family expert](#).

Hinton theorized that since we spend so much of our lives simply walking in straight lines, and not using all of the three-dimensional space around us, we have an even harder time making the mental leap to fourth dimension.

His solution was to train young children, namely his own kids, to internalize the third dimension. To pull this off, Hinton built his children a series of stacked bamboo cubes. He labeled the bamboo in all three directions, Fannin says: "Where the junctions would be, he would put X, Y, Z coordinates." Then he

attempted to turn these stacked cubes into a game. "He would say, 'X2, Y4, Z3 — go! And all the kids would race each other towards the correct coordinate,'" says Fannin.

If that does not sound like a fun game to you, you are not alone. And those bamboo cubes never amounted to much. But years later, Hinton's son Sebastian would recall how much fun it was to climb and swing on them.

"And he goes, 'That's what I remember. I don't remember anything about the math, but I remember that it was so fun,'" says Fannin.

By now it was the early 1920s, and the junior Hinton had moved to Winnetka, Illinois where he worked as a patent lawyer. He dreamed of recreating the bamboo climbing structure of his youth — minus the not very fun math games — and he started describing his plans at a dinner party one night.

Winnetka at this time was a hotbed for progressive education. The village was taken with the educational philosophy of John Dewey, which called for "whole child education." This meant not just teaching reading, writing and arithmetic, but also how to be healthy and active humans.

So, as Hinton was describing his dream climbing structure, the dinner party was stacked with educators, including the superintendent of the Winnetka City Schools, Carleton Washburne. Fannin says he imagines Washburne's eyes widening before telling Hinton, "We need to build this in the schools!"

Soon after, Hinton began filing his early patents for the design, which he registered to something he called JungleGym Inc. And the rest, as they say, is history.

If that dinner party had taken place anywhere else in the world, this iconic piece of equipment may never have existed. Or, as Fannin says, "It only stays in Hinton's backyard. It never becomes sort of the cultural mainstay that is now ubiquitous on most playgrounds."

The difference between monkeys and apes

From the outside, there's nothing remarkable about the old Victorian home at 411 Linden Street in Winnetka, Illinois, which these days serves as the headquarters for the town's historical society.

Inside, the 30,000 artifacts range from typewriters to vacuum cleaners. But for visitors who walk through a small gate into the back yard, surrounded by 20-foot tall conifers, there's a little bit of a hidden treasure, says Mary Treishman, the executive director of the Winnetka Historical Society.

"We currently don't have a historical plaque on it," she says. "We just have this laminated sign that says, 'Please do not climb on this artifact. It's not safe.'"

That artifact is a 100-year-old jungle gym — the first real version.

To this day, kids sometimes still stumble across it, and Treishman has to politely tell them to stay off.

"I've seen adults come back here and really want to climb it because it reminds them of their childhood," she says, adding that something about the classic bars really animates people. "The memories of this climbing structure are very deep. This is what everyone played on."

Few things last 100 years. Children's toys seem particularly fickle. Pet rocks, pogo sticks and scooters have all had full boom and bust cycles while the jungle gym — unflashy, workman-like, no fuss — keeps children coming back. Why is that?

It may be that the act of swinging and climbing in the jungle gym contains *just enough* risk, says Ellen Sandseter — a professor at the Department of Physical Education and Health at Norway's Queen Maud University College, and an expert on risky play.

Sandseter says the jungle gym, and its sibling the monkey bars, offer a lot of challenging and also risky play, which is a good thing. She says it helps kids' physical development — think motor skills — and their mental health, by building courage and self-confidence while reducing anxiety.

What's more, unlike a lot of newer equipment that tells kids how it's supposed to be used, Sandseter says the beauty of the jungle gym is in its simplicity.

"A monkey bar could be used in many different ways. And it, therefore, also affords creativity among children," she says.

This all may help explain why the jungle gym has endured 100 years. But what about Fannin's original question: how did the monkey bars get their name? Well, in the original 1923 patent for the jungle gym, Hinton seems to imagine children playing on it in language that has an ethereal quality of dreaming, of imagination:

"I have designed a climbing apparatus, so proportioned and constructed that it provides a kind of forest top through which a troop of children may play in a manner somewhat similar to that of a troop of monkeys through the treetops in a jungle."

"There's an illustration of it in the last patent he had approved. It basically is a jungle gym, and then adhered next to it is the 'Accessory monkey runway,'" says Fannin. AKA, the monkey bars.

It's worth remembering, Hinton was a patent lawyer, not a primatologist. And that behavior — swinging by your arms — is *ape* behavior, not what monkeys do. So should they be called ape bars?

"If you want to be pedantic about it," says Fannin. "But I love the term monkey bars."

Sadly, Sebastian Hinton never saw his invention get the U.S. Patent Office's stamp of approval. He died in April of 1923, just six months before his patent was officially approved.

Much has changed since then: safety concerns have softened materials and rounded edges in playgrounds. But Hinton's simple design that doesn't dictate behavior, but facilitates it, has endured.

Perhaps it's precisely because of this freedom that jungle gyms have afforded children the chance to dream for the last century. And maybe some of them will even dream about new dimensions.