Summer exhibit of wild and wacky posers might just have you scratching your head.

Slocum won't tell you how the wooden arrow pierced the Coke bottle.

At a glance

What: Puzzles
Where: Today through Sept. 5. Puzzle expert Jerry Slocum will sign copies of his "Tricky Optical Illusion Puzzles" from 10 a.m. to noon today in the center's Explorer Store.
Where: St. Louis Science Center, 5050 Oakland Ave., St. Louis
Admission: $6 adults, $5 children and seniors
Summer exhibit hours: 10 a.m.-4 p.m. daily except 10 a.m. to 8 p.m. Fridays and noon to 4 p.m. Sundays. Entry times every half-hour.
Information: (800) 456-SLSC or www.slsc.org

Jerry Slocum holds a puzzle jug. How did they get the shoe and ball through the small neck?
Slocum, who will autograph his latest book from 10 a.m. to noon today at the center, says it can’t help but be a crowd-pleaser.

"It's the thrill of solving," said Slocum in explaining the mystique of puzzles through the ages. "It's the process of trying different ways to look at a puzzle — sort of thinking outside the box, looking for different angles of your mind and coming up with a way of solving it. That's a thrill."

The Chicago native has been thrilling himself almost as long as he can remember. When his parents would travel, instead of toy pistols or some junky souvenir, they would bring back puzzles. With his quarter-week allowance, he started buying puzzles himself.

Then, one day, he solved the Rings of Seven, a Chinese torture test that involves removing a series of rings off a loop. That was the final piece of the puzzle, so to speak.

"When I figured that out at about age 10, I was just so thrilled at the prospect, I was just hooked on puzzles," Slocum said.

If you're lucky, he'll hook you, too, with the sheer enthusiasm he has for his mind-expanding pastime. Take one of his favorite puzzle-makers, for example — Akio Kamei of Japan.

All of Kamei's puzzles look like everyday objects, but they all have a clue that leads to a secret compartment within the object. Just look at his egg. It looks like a plain wooden egg on the outside, but if you "crack" it by tapping it on its Japanese symbol, you open a wooden lock that allows you to take the egg apart and release a small wooden chicken. That should convince you which came first.

Kamei's wooden can with a spinach leaf design on it is just as cute. The "clue" is that the leaf is supposed to remind you of Popeye, so if you squeeze the can like Popeye did, the top pops open.

That's just the start. He tells how puzzles can be functional as well as fun by showing off his 17th century German lock that has no apparent keyhole. Instead, you first put the key in a decoration to reveal the keyhole, then put the key in the hole and turn twice. But before you can open it, you still have to swing open a bar on the back that looks welded.

"So puzzles have been used as a functional aid in security, too," Slocum said. "People in the 16th century would carry puzzle knives with them, so if they were robbed on the road, the robber couldn't hurt them with their own knife because the thief couldn't open it."

Slocum told of another puzzle made by an English company and distributed by the Red Cross for British prisoners of war in World War I. The puzzle itself didn't work, but that didn't matter. The real puzzle was opening it to find a hacksaw, compass and map. Another more lighthearted puzzle had people in the 1940s folding up four pigs to reveal a fifth — Hitler's face.

Even the simplest of puzzles can leave people scratching their heads. Taking four oddly shaped pieces to form an ordinary T or even two pieces to build a pyramid can be impossible if people refuse to obey one of the commandments of puzzle-solving — "Thou shalt open thy mind to new perspectives."

That's why puzzles are so good for children, Slocum says. "They help them to learn to think analytically and clearly," Slocum said. "I think they can see with the puzzle more than in real life what works and what doesn't, so it helps to sharpen their reasoning, their logic and their deduction helps them figure out problems about life."

It's been that way since the dawn of civilization, speculates Slocum, who was asked to write an article on the history of puzzles for Microsoft's Encarta encyclopedia. To prove his point, he shows what looks to be a bronze mirror from the Han dynasty in China more than two millennia ago.

It looks quite ordinary. The front of the mirror is a piece of highly polished bronze while the back is decorated with Chinese calligraphy. But if you take the mirror outside and aim a reflection of the sun at a piece of white paper, you'll see the letters from the back of the mirror
You won't believe your eyes when you see the examples of optical illusions in the Maze of Illusion, above. The display at right shows some of Jerry Slocum's collection of interlocking puzzles. Try your luck at a common disentanglement puzzle, below.

projected on the paper. Centuries later, Japanese Christians used the same trick with crucifix mirrors so they could prove their faith secretly and avoid persecution.

After all this, it should come as no surprise that Slocum's career involved puzzles of a sort, too. An engineer like his dad, Slocum developed cockpit display designs for pilots for Hughes Aircraft and then helped General Motors incorporate aircraft technology into automobile features.

Now, though, he can devote all of his time to his avocation. In 1993, he even established the nonprofit Slocum Puzzle Foundation. Royalties from his books go to the foundation, enabling him to finance exhibitions. Eventually, all of his puzzles along with his 5,000-book library on puzzles will go to the Lilly Library at Indiana University at Bloomington.

Until then, he will continue to tease people's imaginations with puzzles like the Coke bottle with a wooden arrow through it. He says he's bound by oath not to reveal the solution of how the piece of wood came to be where it is. It's part of the "wonderment" Slocum wants people to find in puzzles. And, if you still aren't convinced, he'll ask you to solve the Rings of 65 puzzle that a friend made for him based on that childhood Rings of Seven.

"Even if you could correctly move the rings at one per second, it would take you 100 billion years to solve it," Slocum informed his amazed listeners. "It's just to make a point that the mathematics behind these puzzles can be powerful indeed."