



The Long and Short of It A Lesson with Second Graders

by Lisa Rogers

*Each two-page spread in Cheryl Nathan and Lisa McCourt's book *The Long and Short of It* (BridgeWater Books, 1998) shows two animals and compares the size of some part common to both of them by comparing each part to an everyday object. For example, the chameleon's tongue is described as being "longer than a fire hydrant," while the raccoon's tongue is "as short as a stick of gum." Lisa Rogers used the book, which is boldly illustrated with collages of painted cutout paper, to engage young students in measuring and comparing.*

The second graders gathered on a rug. Holding up *The Long and Short of It*, I asked, "What do you think the story will be about?" Hands shot up eagerly.

Dixita said, "Well, it has *long* and *short* in the title, so I think it's about measuring things."

Ceaph added, "Yeah, and the picture shows a bird with real long legs, and then the little blue bird next to it has short legs."

"It must be about birds," Gage said.

The children then settled in for the first reading of the book.

"Read it again!" Hannah exclaimed when I reached the end.

"First, let's talk about some things we learned from the book," I replied.

Jack offered, "It had cool animals and things."

"What about the animals?" I encouraged.

"Well, I liked that I could kind of see how big they really are from the pictures and stuff around us. My favorite was a monkey's hands and hot dogs, because that's what I had for lunch," Jack said.

"It wasn't a monkey, it was an orangutan like at the zoo," Kara interjected.

Jack and Kara were referring to a passage from the book that reads, "Can you imagine having fingers as long as hot dogs? Well, orangutans do. But the giant panda's little fingers are shorter than yo-yos."

After discussing other favorite parts and funny comparisons the book makes, we read the entire book again. And then I returned to the page about reindeer. "Reindeer have long antlers—longer than your arms stretched out as wide as you stretch them."

“That’s long. But is it as long as my arms or Sean’s arms?” Melissa wondered. She was the shortest in the class and Sean was noticeably the tallest in the class.

“Oh, I didn’t think of that,” Sean said. “But my dad’s arms are lots longer than my arms. So maybe they could be really long antlers.”

I then introduced the students to the activity I had planned. “We’re now going to figure out how long our arms are when stretched out wide.” I extended my arms out as wide as possible to demonstrate what I meant. “We will work in partners to find out the length, or span, of our stretches. But first you’ll make estimates. How long do you think your arms will stretch if we measure in inches?” I asked. From their previous measurement experiences, the children were familiar with measuring in inches.

I gave the children a moment to think on their own and then asked them each to turn to a neighbor and share their estimate. When I called them back to attention, I directed them to return to their desk and write their estimate on a sticky note that I had distributed to each of them. Then I initiated a discussion.

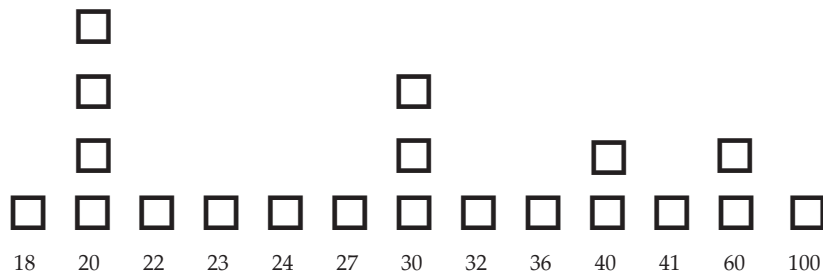
“Who thinks you have the shortest arm span or stretch?” I asked. Melissa quickly raised her hand. She had written *20 inches*.

“Please explain how you made that estimate,” I said.

“I think each arm is less than ten inches long and I have two arms, so it must be about eighteen inches,” she responded. I didn’t want to point out that she hadn’t taken into consideration her body when estimating her arm span. I knew that would become apparent as we worked through the lesson.

“Did anyone make an estimate that is less than eighteen inches?” I asked.

No one did, so I asked Melissa to post her sticky note on the left side of the board. We then ordered the rest of the students’ estimates; they ranged from 18 to 100 inches.

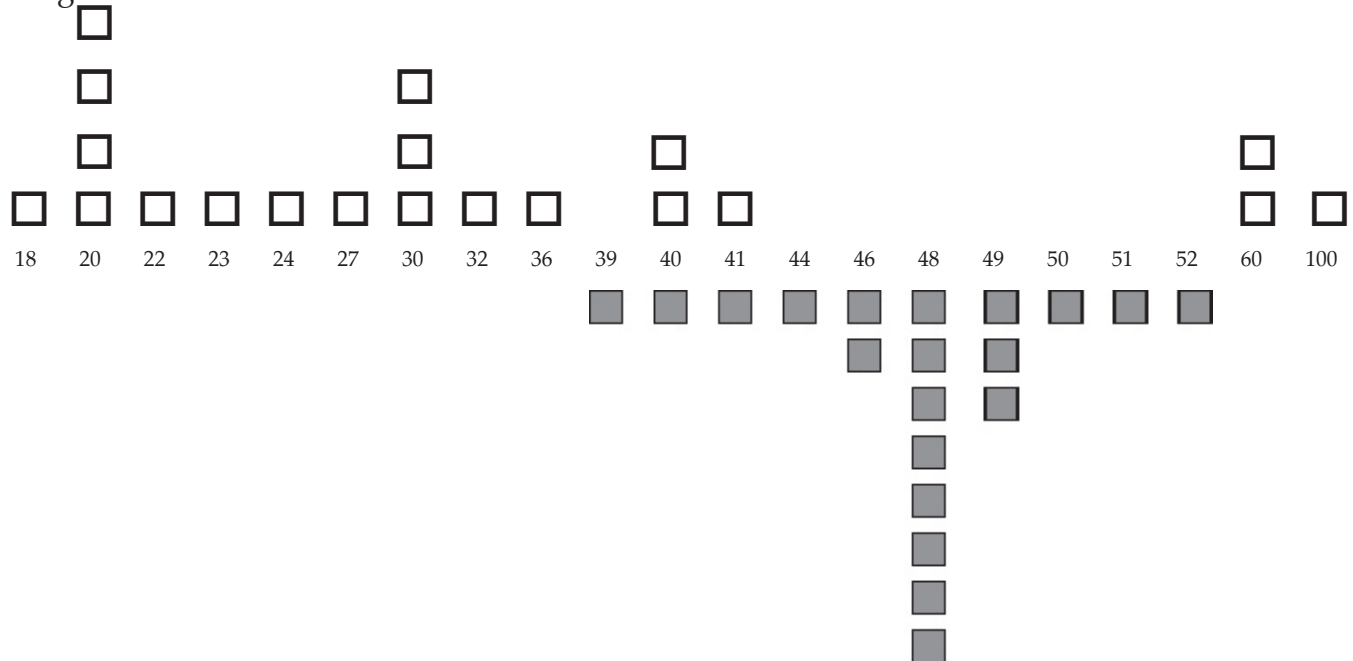


I then gave the children the following directions:

- Help your partner measure his or her arm span by cutting a piece of string the length of the arm span.

- Use a ruler to measure the length of the string in inches. (*If you were doing this activity with younger students, you might have them measure the length of the string in cubes or color tiles and report their answer in this nonstandard unit.*)
- Record the length of each of your arm spans at your table.
- Find the difference between your estimate and the actual length of your arm span. Record how you figured this difference.
- Share your work with your partner and be ready to share it with the class.

After the students shared their work, I asked them to each post their actual arm span length on a different-colored sticky note under the original chart we had created. This way, the children had a clear visual comparison between their estimates and actual arm spans. We discussed the range of measurements.



Then I posed another question: “What could we say is the typical arm span length for our class?” This resulted in an interesting discussion. The children seemed to understand that if they wanted to report a span for the class, they had to determine one number because listing all the possible lengths would be too cumbersome. The class finally decided to report the span that came up most often on the graph. This discussion enabled us to practice vocabulary we had been studying—*measure, estimate, longer than, shorter than, inches, ruler, comparing, minimum, maximum*, and so on.

Once the children had agreed that our class’s typical arm span length was 48 inches, I then shared information I had gathered online that stated that an average adult reindeer had an antler length of 52 inches. Working with their partners, the children found the difference between these two lengths.