



*Judy Sierra's Counting Crocodiles (Harcourt, 1997) is a story about a monkey who lives on an island in the Sillabobble Sea with a sour lemon tree on it. She spies another island in the distance that has a banana tree, and she cons the crocodiles in the sea into letting her step across them, promising to count how many of them there are. She counts one croc with a smile, two resting on rocks, three rocking in a box, four building with blocks, and so on up to ten dressed like Goldilocks. The crocodiles agree to the plan because they hope to eat the monkey, but she is far too clever for them. Marilyn Burns used this book with fifth graders for a measurement experience that also helped build the students' number sense.*

I gathered the fifth graders on the rug to read aloud *Counting Crocodiles*. I showed them the book and asked them what they knew about crocodiles. Several offered ideas.

"They swallow things whole because they can only bite up and down, not move their jaws sideways to chew," Alex said.

"They're dangerous," Brandon added.

"They can be really long," Max said.

"How long do you think they are?" I asked.

"Maybe five feet," he replied.

I stood up and said, "I'm just about five and a half feet tall."

"I think they can be longer," Bryce said. "I think maybe ten feet."

To give the students a reference for length, I asked, "How long do you think the rug is?" Several made guesses and then we measured the rug using a yardstick. It was twelve feet long.

I then told the students, "I'm going to read the book to you now. Then I'll tell you the problem I'd like you to solve, and also I'll share with you some information about crocodiles that I downloaded from the Internet." I had printed out information from several Web sites.

The students enjoyed the story and several commented on the language used. Andrew had a different comment.

"I think there were fifty-five crocodiles," he said, having added the numbers from one to ten in his head.

"I got fifty-seven," Jimmy said.

"I got fifty-five, like Andrew did," Erin said.

These students' comments were a good introduction to what I had planned. I wrote on the board:

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10$$

"How can we add these numbers to find out how many crocodiles the monkey counted?" I asked. I gave the students a chance to talk in pairs and then had several report.

Kailen added  $1 + 2 + 3 + 4$  to get 10 and then added on the 5 and the 10 to get 25. She then said, "So you have six, seven, eight, and nine left. Seven plus eight is fifteen and so is six plus nine, so that's thirty more. Thirty and twenty-five makes fifty-five."

Spencer said, "I added to make tens—one and nine, two and eight, three and seven, and four and six. That's forty. The ten at the end makes it fifty, and all you have to do is add on the five to get fifty-five."

Jimmy said, "I think fifty-five is right. I made a mistake when I said fifty-seven."

I then opened the book to show again the last picture of the crocodiles stretching snout to tail from the island with the sour lemon tree to the island with the banana tree. I presented the problem, writing it on the board and giving the students time to read it:

*About how far did the monkey walk on the 55 crocodiles to get from one island to the other in the Sillabobble Sea?*

"We don't know how long a crocodile is!" Alvin exclaimed.

"I didn't either," I said, "so I did a search on the Internet." I shared some of the information I had found—that there are freshwater and saltwater crocodiles, and that saltwater crocodiles are the largest reptiles in the world. One way to tell crocodiles from alligators is by their snouts—alligators tend to have wide, rounded, U-shaped snouts while crocodiles' snouts are longer, more pointed, and V-shaped. It takes ten to fifteen years for saltwater crocodiles to reach maturity, and when they do, the males can reach between 20 and 23 feet in length, with an average length of about 17 feet. Females rarely exceed 10 feet. I wrote on the board:

*average length of mature male: 17' (can be 20'–23')*

*average length of mature female: 10'*

"What other information do you need in order to figure out how far the monkey walked while she counted them?" I asked.

"How many males and females there are," Carina said.

"If they're all grown-ups or if some are babies," Aiden said.

"I think that thirteen and a half feet is the average length," Madeleine said.

"How did you get that?" Jimmy asked.

Madeleine responded, "Seventeen and ten makes twenty-seven, and half of that is thirteen and a half." Jimmy and the others seemed satisfied. I added to the board:

*$13\frac{1}{2}'$  is the average length of males and females*

I gave further directions. "It's up to you to decide on the length of the crocodiles and how many males and females there are. After you do your figuring, explain what information you chose to use."

I posed one more question: "Do you think the monkey had to walk a mile?" Some students thought yes, others thought no, and others weren't sure. Not many knew how many feet are in a mile, so I added that information to what I had written on the board:

*$5,280' = 1$  mile*

"It couldn't be a mile," Aiden said. "Even if there were a hundred crocodiles, and even if they were twenty feet each, that would only be . . . mmm, let's see . . . oh, I know, it would be one hundred times twenty, and that's only two thousand feet."

Before sending the students back to their desks to work, I gave a follow-up problem for those who finished more quickly. "After solving the problem, try this one." I wrote it on the board underneath the first problem:

*What fraction of a mile did the monkey walk from one island to the other?*

The students then returned to their seats about began work. Most dove in but about a third of the students needed some sort of help, direction, or reassurance. I circulated and gave assistance as needed. Some of the students used the average length that Madeleine had suggested. Others decided how many males and females there were and used the average lengths for each. Adam used friendly numbers, deciding that the crocodiles were all male and all were 20 feet long. Those who solved the second problem concluded that the monkey had walked  $\frac{1}{7}$  of a mile.