

EXTRA: STEM Literacy Saves Fish, Helps Parents Avoid Speeding Tickets

Tanks A Lot!

When Giselle and Camilla finally got the aquarium they had wanted in their room, their mother reminded them that they had promised to take good care of the fish.

“You need to replace a third of the water every week,” she said as they set up the tank. “And once a month, put the fish in another container, clean everything and put in all new water.”

“That sounds like two equal jobs,” Giselle said when the girls were alone later. “One person changes a third of the water once a week and the other does the complete change once a month. Doesn’t matter to me. Take your pick.”

“I’ll change a third of the water every week,” Camilla said.

“Deal,” Giselle said.

“And I’ll do it the easy way,” Camilla added.

“What do you mean?” Giselle asked.

“I won’t have to take out the old water,” Camilla said. “I’ll just leave the top off the tank. Over a week, about that much will evaporate. Then all I’ll need to do is put in the fresh water.”

“That’s not fair!” Giselle said.

“Sorry, we had a deal,” Camilla said.

“I mean it’s not fair to the fish, Giselle said.

“What do you mean, not fair to the fish?”

One Minute Mysteries: 65 MORE Short Mysteries You Solve With Science, page 153

Your GPS is dead...

...what are the four measurements we need to determine the exact location of a place on earth?

101 Things Everyone Should Know About Science, Question 75

Eggcellent Idea

“Mom, where are you?” Carol called as she unlocked the back door and entered the kitchen?”

Three other equally sweaty and hungry girls followed her after playing a pick-up soccer game on the field near Carol’s house.

On the table, they saw a note from Carol’s mother. It said, “Had to run an errand. Will be back around one. You and your friends can help yourselves to lunch. Eggs are in the fridge.”

“Mom boiled a dozen eggs this morning to make egg salad sandwiches. I know how to make them,” Carol said as she opened the refrigerator.

Two identical egg cartons were inside.

“How do we know which dozen is hardboiled?” Bianca asked. “If we crack one open and it’s still raw, we’re wasting an egg and making a mess.”

“How about seeing if any are still warm?” Jade suggested. “Or wet from being in the water?”

Carol brought out both egg containers and felt the eggs. All the eggs were cold and dry.

“That doesn’t help. They’re all the same. I think we have to guess,” she said.

“We don’t have to guess,” Lucy said.

All their heads turned towards her.

One Minute Mysteries: 65 MORE Short Mysteries You Solve With Science, page 89

Heavy Toll

“A speeding ticket? What?” Suzy’s father said as he opened the day’s mail.

“What’s the matter, Daddy?” Suzy asked.

“Well, Suzy, this ticket says that we were speeding on the toll road we took when we were driving back from the state science fair last weekend,” he explained.

As drivers entered the road they got a receipt showing the time and exit number. The exit numbers were also mileage markers. When they got off the road, drivers had to pay different amounts depending on how far they went.

“Are you sure they’re right?” Suzy asked. “What does it say?”

“Well, it says we got on at exit 64 at 12:13 p.m., then got off the road at exit 148 at 1:33 p.m.,” he said. “And it says the speed limit was 55 miles and hour—I thought it was 65. How can they know if I were speeding?” he asked. “I didn’t see any police cars.”

“It’s too bad, but they’re right,” Suzy said.

“How do you know?” he asked.

One Minute Mysteries: 65 Short Mysteries You Solve With Math, page 17

ANSWERS AND MORE!

Report: Study finds 87% of adults read answers before solving problems for themselves

Tanks A Lot!

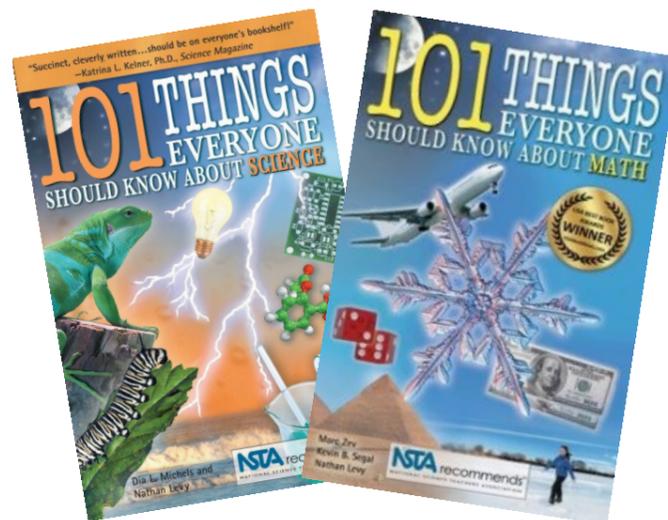
“The point of changing water is that you’re taking out some of the old water that has gotten dirty from uneaten food and from the fish living in the water,” Giselle said. “If you just let water evaporate, the dirty stuff stays in the water left behind and it’s even worse for the fish because it’s more concentrated.”

“Okay, I’ll take out the old water,” Camilla said. “We’ve been asking for these fish for a long time and we should take care of them the right way.”

One Minute Mysteries: 65 MORE Short Mysteries You Solve With Science, page 154

Longitude, latitude, height, and time.

For the full answer, turn to page 106 *101 Things Everyone Should Know About Science*, Question 75



Heavy Toll

“If we got on the road at 12:13 and got off at 1:33, that means we were on the road for one hour and 20 minutes, or 80 minutes,” Suzy explained. “Since the exit numbers are mileage markers, the distance between exits 64 and 148 is 84 miles —148 minus 64. That means we went 84 miles in 80 minutes—that’s more than one mile per minute, which is more than 60 miles per hour. So we were speeding, since the speed limit was 55 miles per hour.”

“To figure it out exactly,” she added, “84 miles divided by 80 minutes makes 1.05 miles per minute. Multiplying 1.05 miles per minute by 60 minutes in an hour to get miles per hour means we averaged 63 miles per hour.”

“Well, we were going less than that for some of the time,” her father said.

“Yes, but to average 63 miles and hour, we must have been going faster than that at other times,” she said. “I hope that ticket isn’t too expensive.”

One Minute Mysteries: 65 Short Mysteries You Solve With Math, page 17

Eggcellent Idea

Lucy explained, “Spin the eggs here on the counter. They will spin differently. The raw ones will spin more slowly than hard-boiled ones. That’s because the hard-boiled eggs have been cooked solid, but the liquid inside of the raw egg will slow the egg down. That’s how we will be able to tell which eggs are which.”



One Minute Mysteries: 65 MORE Short Mysteries You Solve With Science, page 90

Literary Corner: We gather 65 short men all named Mr. Ease and discover they are not as effective at teaching STEM concepts than the book *65 Short Mysteries* **Full Story on F13**



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