



One Minute Mysteries: 65 Short Mysteries You Solve With Science!

“For anyone who loves good science, good mysteries or both!”

Ages 8-12, 8.5” x 5.5”, 176 pages; \$9.95



Not an ordinary mystery book, *One Minute Mysteries: 65 Short Mysteries You Solve With Science!* makes science fun. These short mysteries have a clever twist—you have to tap into your science wisdom to solve them. Each story, just one minute long, challenges your knowledge in earth, space, life, physical, chemical and general science. Exercise critical thinking skills with dozens of science mysteries (solutions included) that will keep you entertained—and eager to learn more! Written by a father-daughter team, this entertaining and educational book is great for kids, grown-ups, educators and anyone who loves good mysteries, good science, or both!

Sample Questions and Answers!

1. Bear Scare

At a one-week ski camp in mid-winter, three best friends were in the same group—Carla, Sasha and Elizabeth. Today their group was going on a treasure hunt for a bag of candy. They had a map with names of the different ski trails and clues that led them to the right ones. After going down several trails and up some ski lifts, they found a tree painted with an X. Also on the tree was a large scratch mark. “X marks the spot,” Carla said. They took off their skis and dug in the snow at the base of the tree. But there was only an empty box. They skied down to the ski school, where they found Leslie Coyle, their instructor. “We found the box, but there was no candy in it,” Sasha said.

“I asked the workers to take out the prize because of the bears,” Ms. Coyle said. “Bears can smell food even through a box and we don’t want them going to the areas where there are skiers.”



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Elizabeth noticed a big bag of candy on Ms. Coyle's desk.

"Stealer!" Elizabeth said, laughing. "You just wanted the candy for yourself. And I can prove it."

"So, prove it," Ms. Coyle laughed. "Are you saying there are no bears in this area? Or that bears couldn't smell candy through a box?"

Answer: "There are bears here—that's what made the scratch mark on the tree," replied Elizabeth. "And bears probably could smell the candy through a box. But it's the middle of winter. Bears are hibernating now, so they wouldn't be out roaming around," Elizabeth said as they all shared the candy.

2. A Question of Identity

"Watch out!" Samir yelled.

"What?" Maggie asked.

"Don't step on it! Look!" Samir said.

"Eww, yuck!" Maggie said as she lifted her foot. On the ground lay something slimy, long and skinny.

They were outside walking alongside the playground during break time, and Samir had spotted something dark in the grass just where Maggie was about to step. It was several inches long, dark in color and about as big around as a pencil. It was also dead, and a little shriveled up, so it was hard to tell exactly what it was. Their teacher heard them and came over. "What's wrong?" Miss Geong said.

"I almost stepped on a dead snake!" Maggie said. Miss Geong took a stick and poked at it. "It could be a small snake, or maybe just a large worm," she said. "Whatever it is, let's just leave it here," Maggie said. "I can't do that," Miss Geong said. "If it's a snake, there could be a whole lot more. I'll have to tell the principal to cancel all recesses until an expert comes."

"No, we can figure this out ourselves," Samir said. "Is it okay if we take a closer look at it?"

"Yes, since it's dead," Miss Geong said. "But how do you expect to tell what it is?"

Answer: They picked up the dead, unknown thing with the stick, put it into a bag and carried it into the science room. There Samir got a sharp knife and cut it open. "The playground doesn't have to be closed," he said. "This cannot be a snake because a snake has a backbone—it's a vertebrate. Worms do not have backbones—they're invertebrates. This does not have a backbone, so it must be just a large worm."

3. A Fishy Solution

"Man, a backyard fish pond is a lot more work than an aquarium!" Dennis said to his friend Anders. Digging the hole for the pond was hard work, and then Dennis and his father had to set up the liner, cover it with gravel and fill it with water. Now they were ready to get the fish and put them in. Or so they thought. The man in the fish store had a warning. "Raccoons, skunks and certain birds might treat your pond as a fast-food restaurant," he said.

Dennis told that to Anders, who had come over to see how things were going. "That could be a problem," Anders said. "I've seen raccoons around, and sometimes you smell that a skunk has been here. And there are a lot of crows."

“That’s why I came up with the idea to put a cover on the pond,” Dennis said, showing Anders a large sheet of clear plastic. “It had to be something that we could see through, but that would discourage anything from getting at the fish. All I have to do is cut this to the shape of the pond and lay it on top of the water. That way we’ll have no problems.”

“I’m not so sure about that. You might want to talk to the guy in the fish store again,” Anders said. “You could be causing a bigger problem than you’re solving.”

“What do you mean?” Dennis asked.

Answer: “Fish need oxygen to live, just like we do,” Anders said. “A lot of the oxygen that’s in their water gets absorbed from the air. If you lay that plastic on top of the water, you’d be cutting off their supply of oxygen and it could kill them.”

4. Freeze Fall

It was late winter, and the temperature had just fallen after several mild days. To make the walk home from school even colder, it had rained earlier, and a chilly mist still hung in the air. Tom and Evan glanced up at the flashing clock in front of the bank. It said “32°F, 0°C.”

They stopped in a candy store for a snack and to warm up before they continued on their way home. Their shoes splashed through puddles as they headed toward the railroad bridge. The bridge, several hundred yards long, had a narrow sidewalk next to train tracks, where the tracks crossed the river far below. It could get scary crossing the bridge when a train was on it. But the only way to avoid it was to take a different route that added ten minutes to the walk.

“I think we should go the long way,” Evan said. “The bridge is probably icy.”

“We haven’t seen any ice. These sidewalks are just wet,” Tom said.

A few moments later they were on the bridge. Tom’s foot slipped on a patch of ice and he fell.

“I told you so,” Evan said, teasing him.

“How did you know there would be ice here when there isn’t ice anywhere else?” Tom asked as Evan helped him up.

Answer: “The Earth absorbs heat from the Sun and radiates that heat back out. Up until the bridge, there is ground under the sidewalks. The ground provides some insulation and keeps the sidewalks above the freezing point, even though the air temperature itself is at the freezing point,” Evan said. “But underneath the bridge there is just cold air without any insulation, so the surface on the bridge freezes first.”

5. In Hot Water

Danielle and her family went to a hot-springs pool after a day that included ice skating on an outdoor rink and a horse-drawn sleigh ride through the snow. They were staying at a resort hotel that had hot springs. They checked out the spot where the water was bubbling out from the ground, sending up wisps of steam. From there, the water flowed into a pool about the size of a small swimming pool. The sign said the water in that pool was 105° F (41° C). The water flowed down from there to another pool, where the temperature was 98° F (37° C).

They stayed in the 98° pool for about ten minutes and then went to the 105-degree pool. Danielle enjoyed sitting right where the water was flowing in from spring. A man with a nametag that said “Charlie” came over to where the water was coming out of the ground and dipped a little glass container in the water. “What are you doing?” Danielle asked him.

“I’m just testing the chlorine level,” he said. Danielle had seen the lifeguards at the pool she belonged to back home test for chlorine. But when the man walked away, she said to her father, “I

think you ought to tell the people who are in charge here about that man. I bet he doesn't even work here. Maybe he's looking for a chance to steal somebody's wallet." "What makes you think that?" her father asked.

Answer: "Since the water is coming right from the ground, there's no chlorine in it," Danielle said. "Anyone who worked here would know that." "That's right," her father said. "Chlorine is found in water that has been treated for home use, and even more is added at swimming pools to kill bacteria in the water. I'll go talk to the manager."

6. Taken with a Grain of Salt

One evening, the campers cooked their own meals with their cooking kits over open fires outside the dining hall. Then, they brought the food inside where the tables were set up for dinner as usual, and desserts were on a side table. Mark should have known better than to get up from the table to get a dessert without taking his glass of water along, because when he got back to the table, he saw that the glass had been moved. He couldn't quite be sure, but he thought the salt shaker had been moved too. And a couple of the guys looked like they were trying hard not to laugh. "Did you guys put salt in my water?" Mark asked. "There's only one way to find out," Breon said, picking up the glass and handing it to him. "Take a nice deep drink."

"I bet I can find out without tasting even a drop of it," Mark said. "Without anyone else tasting it either. And without anyone telling me."

"What do you want to bet?" Breon responded.

"Chores for the rest of the week," Mark said. "If I win, you do mine. If you win, I do yours." "You're on," Breon said. "How are you going to prove it?"

Answer: "I'll take the glass out to the campfire, pour the water into my cooking pan and let the water boil off," Mark said. "If there's salt in the water, it's in solution now and we can't see it, but once I remove the water by boiling it off, any salt will stay behind in the pan."

7. Needing a Lift

"Hey, watch out!" Karl said. "Oops, sorry!" Barry said. It was Earth Day, and as part of their project, they were planting trees at the elementary-school playground. Karl and Barry each had taken one handle of a wheelbarrow. In the wheelbarrow was a tree, its roots protected by a heavy cloth sack full of dirt. As they crossed the playground toward the holes that had already been dug for the trees, they struggled to control the wheelbarrow because of the weight.

As they got near the see-saw, Barry's hand had slipped and he let go of his handle. The wheelbarrow tipped over and the tree slid out onto the ground. The two of them tried to pick it up, but it was too heavy. Alejandro and DeWayne came to help, but even the four of them couldn't lift the tree. "We'd better stop before we hurt ourselves," Alejandro said.

"How about if we push it?" DeWayne suggested. They did manage to scoot it across the ground a little. "That won't work. Even if we could push it all the way to the hole, the sack would tear and we'd ruin the roots," Barry said.

"I have an idea," Karl said. "Let's hear it," Barry said.

Answer: "A see-saw is a lever," Karl said. "Let's adjust it so the side next to the tree is the short end. Then we'll push the root ball onto that end. Alejandro and DeWayne, you push down on the long end, I'll hold the tree steady and Barry can move the wheelbarrow underneath it." In a few moments, the tree was back in the wheelbarrow and on its way to being planted.

8. Powerful Argument

Jeremy, Vishal and Aiden met in the extended-day room before school one day to assemble the project they'd all been working on. It was a model of a city, showing how services such as water and electricity are delivered. The model had miniature businesses and homes along streets, with model-railroad telephone poles strung with thread to represent power lines, and air hoses from a fish tank to represent water lines. They had put most of it together after school the day before when they realized they had forgotten to make a power plant. Aiden had volunteered to do that, and this morning he brought in a clay model of a building to use as the power plant for the finishing touch. "You know, this doesn't look much like a power plant," Vishal said, examining it. "It's missing something . . . I know, it has no smokestacks!" "So what?" Aiden said. "Power plants burn fuel to generate electricity. You burn coal, you need a smokestack. You burn oil, you need a smokestack," Vishal said. "Well, it's too late," Aiden said. "I didn't bring any more clay with me, and we have to turn this in during first period." "There goes our grade," Vishal grumbled. "Take it easy. I know how to fix this," Jeremy said, walking toward the cafeteria. He returned with some aluminum foil. "What are you going to do with that?" Aiden asked.

Answer: Jeremy folded the foil so it would fit on top of the roof of the model power plant. "Now it's a solar power plant, which means it gets energy from the Sun. Nothing gets burned, so no smoke is made, and no smokestack is needed."

9. Bird Watching

"It's one o'clock. Time for my shift," Mike said as he opened the gate into Garreth's backyard. For science class, Mike and Garreth were counting how many birds came to a feeder in two-hour time spans in the morning, mid-day and evening. That Saturday morning, they set up a bird feeder at Garreth's house, which was next door to Mike's, and sat in his yard from eight o'clock to ten, counting the birds. But there wasn't enough to do for two people, so they decided that for the other two periods, each would take one hour. Mike sat down in the chair next to Garreth and looked at the fizzing drink on the ground next to him. Garreth noticed Mike eyeing it and said, "I opened that thing at noon when I started and I've been sitting here with it the whole time and forgot to drink it. Do you want me to go inside and get you one?" "No, thanks. How did the bird watching go?" Mike asked. Garreth showed him the sheet. There were hardly any marks on it. "Well, you can see, not many birds came for lunch." Mike said, "You would have seen more if you had been sitting here the whole time like you say you were." "What makes you think I wasn't?" Garreth asked.

Answer: "If you opened that soda an hour ago at noon like you said, it would have gone flat by now," Mike said. "But it's still fizzing, so you must have just opened it. That meant you went in the house, and probably not just to get a soda. Which video game were you playing rather than counting birds?"

10. Thrown a Curve

“No kidding, your coach taught you how to throw a curve ball?” Wayne asked.

“Yep,” Randy said.

Randy was a good athlete. He was quarterback for his football team in the fall, point guard for his basketball team in the winter and pitcher for his baseball team in the spring.

“I thought you weren’t allowed to throw curve balls until you got older,” said Wayne.

“The rule actually is that you can only throw so many curve balls in a practice or a game,” Randy said. “Because throwing too many can hurt your arm.” “Can you show me how?” Wayne asked.

They were standing in the school courtyard at break time after lunch. The problem was they didn’t have a baseball, just a smooth ball about the size and weight of a baseball.

“Okay, you grip it like this,” Randy said, showing Wayne how to position his fingers. “When you throw it, you snap your hand down to put topspin on it. Like this.” Randy threw the ball with a downward snap of his wrist, but the ball just went straight. Wayne retrieved the ball after it bounced off the brick wall and handed it back to Randy. “Try again,” Wayne said.

Randy did, snapping his wrist harder this time. But still the ball went straight.

After three more tries with the same result, Randy said, “The ball was really curving for me at practice last night. What’s happening?”

Answer: “At practice, you were using a real baseball, which has stitches that are above the surface of the ball,” Wayne said. “The stitches are what grab into the air when you put topspin on the ball by snapping your wrist. Because of the topspin, air is moved out of the way under the ball, lowering the air pressure there, and more air is brought around to the top of the ball, raising the air pressure there. The result is the ball curves down. It’s the same reason golf balls have dimples—to grab the air. Except in golf, backspin is put on the ball and the dimples help it go up. This ball is smooth, so you don’t get that effect.”



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