

An Incorrect Solution



Book 5 in The Math Kids Series

The Math Kids series
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An Incorrect Solution



Book 5 in The Math Kids Series

by

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*To Stephanie, Jordan, and Justin—The world is,
and will be, better because you are a part of it.*



Chapter 1



Low, dark clouds spit angry drops of rain onto the pavement, where they splattered into growing puddles of muddy water. Justin Grant kept his head down and plodded on toward school, trying to keep up with the much longer stride of Jordan Waters, his best friend since kindergarten.

Truth be told, neither was in much of a hurry to get to McNair Elementary. That was unusual, because both were good students and normally loved school, especially since they had formed the Math Kids club with Stephanie Lewis. The three had solved the mystery of the neighborhood burglars together, but the club had become complete when they'd added Catherine Duchesne. With their new club member, they had solved the mystery of a bank robbery and found a fortune in gold that had helped the town recover from financial hardship. They had also come in second in the district math competition.

But that was all in fourth grade. Now they were

moving to fifth grade and things were changing—and not for the better.

For one thing, Catherine and Stephanie were going to be in a different classroom. The girls were going to be in Mrs. Wilson's class while the boys were going to be in Mr. Miller's. His nickname was "Miller the Killer" because he was so hard on kids. Some of the kids thought their fourth-grade teacher, Mrs. Gouche, had been tough too—they had called her Mrs. Grouch when she was mad—but the word was that Mr. Miller was much, much worse.

But that wasn't what was bothering Jordan about their new teacher. It was math. Mr. Miller hated math. He had the only classroom in the entire school who didn't have a math team in the school-wide competition. Mr. Miller loved English and social studies but made it clear that math was his least favorite subject. Jordan did great in math, but he struggled with English. He hated reading, mixed up letters when he tried to spell, and couldn't stand writing papers. Mr. Miller was going to be his worst nightmare.

"This is going to be a lousy year, isn't it?" Jordan said as he used his long legs to step over a puddle in a low spot in the sidewalk.

"Yeah," replied Justin glumly. He didn't even bother to try to step over the puddle. He was one of the shortest kids in his grade and he knew his short legs

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weren't going to reach from one side to the other. He just plowed through the puddle, splashing water everywhere. He was glad he had worn an old pair of tennis shoes and not the new ones his mom had bought him.



“It’s going to stink not having Stephanie and Catherine in the same class,” Justin said as he shook water from one leg.

“Wouldn’t really matter, since Mr. Miller hates

math anyway,” Jordan said. “I heard he doesn’t even have math groups.”

Justin didn’t reply, just trudged through the rain in his soaked sneakers. The first day of fifth grade was already miserable and they hadn’t even reached the school.

Four blocks away, Stephanie ducked her head and raced down the sidewalk and into the waiting dryness of Catherine’s dad’s car.

“Thanks so much for driving us to school, Mr. Duchesne,” Stephanie said politely, shaking a few drops of water out of her ponytail onto the floor in the back seat.

“Happy to do it,” Mr. Duchesne answered. “It’s right on my way to the college anyway, so it’s really no trouble. Besides, I still owe you one, don’t I?”

Stephanie smiled as she remembered meeting Catherine and working with the other Math Kids to solve the cryptic message Mr. Duchesne had left after he had been kidnapped. Teamwork and their math skills had helped them rescue their new friend’s father.

“Hey, check this out!” Catherine exclaimed. “My dad has a new book!” Catherine was positively beaming as she held it up for Stephanie to see.

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Mr. Duchesne taught math at the college and had a whole library of math books, many of which he had written himself. Stephanie thumbed through the book, not understanding any of the equations but envious that Catherine's dad was so into math. *She is so lucky*, Stephanie thought to herself.

"Congratulations!" she said. "I think it'll be a while before anything in the book makes any sense to me, but I can't wait to read it when it does."

Mr. Duchesne chuckled from the front seat.

Stephanie placed her gym bag on the seat next to her. If the rain stopped in time, maybe her soccer team would still be able to practice after school. Soccer was one of the few things in the world that Stephanie liked as much as math—well, almost as much. Catherine looked longingly at the bag containing Stephanie's soccer shorts, T-shirt, and sneakers. *I wish I could play soccer like Stephanie*, she thought.

"I can't believe they split us up into two different classrooms," Stephanie said.

"Yeah, it really stinks. Does that mean we'll have to be on a different math team for the district competition?"

"Worse. It means we'll actually have to compete against each other in the school contest," Stephanie said gloomily.

"We'll beat them, of course, but it won't be nearly as much fun," Catherine said.

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“Don’t move!” she said to him, pointing a finger just inches from his face. Next, she grabbed Brian, pulling him from beneath Dylan’s leg and depositing him next to Bryce.



“Sit!” she said firmly, as if Brian were a misbehaving dog. This caused Bryce to let out a laugh, which drew a stern look from the teacher.

“I said that’s enough!” she shouted once more, and the class finally went silent. Dylan and Bill froze in place, their arms and legs still entangled.

Mrs. Wilson’s face was a bright red and she was struggling to maintain her control as she looked down at the bullies.

“You four, follow me!” she commanded, then she turned and without looking back led them out of the classroom. The bullies followed, but not before Dylan gave Brian one more shove, threatening to start the whole fight over again. Brian managed to restrain himself and followed the others out into the hallway, muttering under his breath.

It was twenty long minutes before Mrs. Wilson returned to the classroom. She seemed very calm and even gave the class a smile when she walked in.

“Well, I think that was quite enough excitement for one day, don’t you think?” she asked. “We only have forty minutes left until the bell rings, so please pick a book and we’ll have silent reading for the rest of the day.”

The remaining time passed in silence. Stephanie read a few chapters in a new book her mom had bought

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her. It was called *Girls Think of EVERYTHING*. It was full of stories about inventions created by women. Stephanie had one story she was going to show to Justin at lunch. She knew he would appreciate it because it was about Ruth Wakefield's invention of the chocolate chip cookie. Catherine looked through a book of math puzzles, scribbling numbers and equations on a sheet of scratch paper as she worked. The bullies didn't come back to the classroom.

When school ended, Catherine and Stephanie ran to catch up with Justin and Jordan.

"Hey, wait up!" Catherine called.

Jordan turned, and the girls could tell the day had not gone well.

"That bad, huh?" Stephanie asked.

"Worse," Jordan said glumly.

"He's thinking about asking his parents if he can homeschool this year," Justin said.

"At least I could do some math at home."

"How's Mrs. Wilson?" Justin asked.

"Too soon to tell, but okay so far, I guess," Stephanie responded.

Catherine went on to explain about the afternoon fight in the class. "It was total chaos," she said. "There were desks flying everywhere."

"Wow, and that was without Robbie," Justin said.

“No Robbie, but we’ve got the whole rest of the gang,” Catherine said. “At least you only have to deal with one of them.”

“Yeah, but Robbie is a handful all by himself,” Justin said.

“Why do you think he acts like that?” asked Stephanie.

“I think he got dropped on his head a few too many times as a baby,” Justin quipped.

Everyone but Jordan laughed. He was lost in his thoughts of the miserable new school year.

Chapter 3



The next morning, the bullies were back in Mrs. Wilson's class, but they seemed quieter than usual. Brian's eye was bruised, and Bryce had several bandages on his arm where he had scraped it against a desk during the near riot in the classroom the previous day. Catherine wondered what kind of punishment they had received. They were used to being in detention, but she had a feeling this time they were going to get something worse.

"Normally, we would break into our reading groups at this time," started Mrs. Wilson, "but since we got some extra reading time yesterday afternoon, we're going to try something different this morning."

She had the class divide into groups of four. That would have been a no brainer for Stephanie and Catherine the previous year. The Math Kids had stuck together through thick and thin. This year, though, they had to look around the room for two more people.

“Looking for someone to join your group?” Ally Brooks asked in her squeaky voice. Her twin sister, Vivie, was right next to her. Though the girls were identical in looks, they could not have been any more different in personality. Ally was outgoing and loud while her sister was quiet and shy. One day they were best of friends and the next they were bitter opponents. Today they seemed to like each other, with Ally resting her hand lightly on Vivie’s shoulder.

Catherine looked at Stephanie.

Stephanie shrugged. The four girls pushed desks together in the front corner of the room. Surprisingly, the bullies formed their own group even though they had been throwing punches at each other only yesterday. Susie McDonald and her friends formed a group and were soon arguing over who should be the leader of the group.

If history is any indication, Susie will win that battle, Catherine thought.

When all the groups had been formed, Mrs. Wilson gave each person two poker chips, one white and one black. “Okay, everyone,” she said, “we’re going to play a cooperation game. We will play three rounds. The winner will be the team who accumulates the most points. In each round, every person will decide whether to hide a white chip or a black chip under their hand.

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Here are the rules on how many points you will earn in each round.”

She wrote the rules on the board.

- 1) *If everyone on the team selects a white chip, everyone on the team wins 10 points*
- 2) *If only one person shows a black chip, that person wins 30 points and everyone else on the team wins nothing*
- 3) *If two people choose black chips, they each win 15 points and everyone else wins nothing*
- 4) *If three people choose black chips, they each win 10 points and the remaining person wins nothing*
- 5) *If everyone on the team chooses a black chip, everyone gets zero points*

The winner will be the team with the most total points at the end of 0 rounds.

She gave the class a minute to review the rules, and then asked if there were any questions. When no one raised their hand she said, “Okay, then, you’ll have two minutes to discuss which chips you’ll each be selecting.”

Almost immediately, the arguments began.

“We should all put in white chips,” Susie argued.

“But what if you say you’re going to and then put in a black instead?” asked Mindy Klinger.

“I told you I was putting in a white one!” Susie said, her voice rising.

The group of bullies was having their own loud discussion. Dylan was half out of his seat, pointing a finger at Bill. “Yeah, well you better put in a white chip,” he said threateningly.

“What, so you can hold out on us and get thirty?” Brian asked.

“No, we’re all going to put in white chips,” Dylan growled.

While the other teams huddled, Stephanie whispered a few words to their team. Ally and Vivie looked confused. Ally started to speak up, but kept her mouth shut when she saw Catherine nod confidently. She and Stephanie had already calculated the best strategy without having to say a word.

“Okay, times up! It’s time to decide which chip you’re going to choose,” Mrs. Wilson said.

Mrs. Wilson watched as Catherine’s team revealed their choices. Four white chips. Mrs. Wilson gave ten points to everyone on the team.

Susie’s group uncovered two black chips and two white chips. Madison and Lashonna high-fived as they each collected fifteen points. The others frowned when they received nothing.

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case was everyone putting in a black chip, in which case the team won nothing.

	Chip color / winnings				
Player 1	○ 10	○ 0	○ 0	○ 0	● 0
Player 2	○ 10	○ 0	○ 0	● 10	● 0
Player 3	○ 10	○ 0	● 15	● 10	● 0
Player 4	○ 10	● 30	● 15	● 10	● 0
Team	40	30	30	30	0

That made the decision simple. The best team strategy was for everyone to put in a white chip every time. Each person would not win as much, but the team won the most each round.

Catherine and Stephanie were still talking about the game, and the bonus test points, as they walked to lunch. They saw Jordan and Justin sitting at a table against the far wall of the cafeteria and joined them.

“Mrs. Wilson is growing on me,” Stephanie said as she examined her lunch box. She smiled as she opened a plastic container. “Gulab jamun!”

“A glob of jam?” Jordan asked.

“Gulab jamun,” Stephanie laughed. “It’s a dessert. My grandma makes them whenever she comes to visit. You’d love ’em. They’re sweet dumplings—like an Indian doughnut, only better!”

“Speaking of dessert...” Justin said.

Stephanie smiled as she watched Justin start to eat his cookies, his sandwich untouched.

“You never know how much time we have to live,” he explained, “so you might as well eat your dessert first.”

“Words to live by,” Catherine said as she reached for one of the dumplings.



“Why’s Mrs. Wilson growing on you?” Justin asked.

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Stephanie explained the cooperation game and how they had figured out the best way to play.

“That would never happen in Mr. Miller’s class,” Jordan complained. “If it has something to do with math, it’s off the table.”

“I don’t think she intended it as a math exercise,” Catherine said.

“So why do you think Mrs. Wilson had us play that game?” Stephanie asked. She suspected that Mrs. Wilson hadn’t done it without a reason.

“My dad told me about a game like that called the prisoner’s dilemma,” Catherine said. “It’s about making decisions that help you personally instead of working as a team.”

“We should talk about that at our next meeting,” Jordan said, his mood instantly brightened by the prospect of doing math. “Does Saturday morning still work for everyone?”

“I might not be able to come,” Justin said. “I need to get started on my history paper.”

Jordan frowned. Just the thought of writing a paper was bad enough, but when it interfered with the Math Kids, it was even worse.

“What history paper?” Stephanie asked.

“We’ve got to write a paper on a historical event that happened between 1500 and 1700,” Justin said.

“Yeah, and then we have to read it in front of the whole class,” Jordan added. “I hate history. I hate writing papers. I hate standing in front of the class. I hate this whole stupid assignment.”

“Wow, tell us how you really feel,” Catherine teased. Jordan gave her a look, but Catherine smiled to let him know she was just joking.

Stephanie twisted her ponytail, thinking. “Wait a minute,” she said. “Maybe it’s not as bad as you think.”

Justin looked up from his carrot sticks. Jordan quit chewing his cookie, a bit of a chocolate chip hanging from his lower lip. He looked hopeful.

“Can it be *any* historical event?” Stephanie asked.

“That’s what Mr. Miller said.”

“Well, you know, there were a lot of math events that happened in history,” she said, lifting one eyebrow. Jordan’s face lit up as he figured out where she was going.

“So instead of a history paper, you’re saying I should write a math paper,” he said thoughtfully.

“It beats history, right?”

Jordan began to smile. “Yeah, writing a math paper isn’t nearly as bad,” he said.