

Serena and Her Math Club

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Serena twisted her hands eagerly. Today was the first day of Math Club for Girls, a Math Club that she started. When she first sent out the signup email, she didn't expect so many to sign up. Now, she was just waiting for them to arrive.

The girls arrived in clumps of two or three, many of them texting on their cellphones as she walked through the door. They flopped down onto the chairs, not bothering to look up to check if they were in the right place. Serena's energy dampened at that.

Soon, all fifteen girls were seated at the tables. Seven of them were still tapping at their phones. Serena cleared her throat.

"Hi! My name is Serena. Welcome to our first meeting of this Math Club!" she said cheerfully. "Are you all ready to further your knowledge of math?" She got a few noncommittal grunts in response.

"Let's start with some simple math problems. After I ask the problem, you can say the answer out loud. Alright. Here's the problem: If there are fifty crows on a fence, and three crows fly away per minute, how many crows are left after 5 minutes?" Serena looked around expectantly. Nobody answered. Out of the corner of her eye, she could see a few of the girls texting secretly underneath the table. The rest of the girls were staring into space.

"Please do not text during class." she said, pointedly staring at the girls who were texting. One of the girls who was texting shoved her phone in her bag and stood up.

"This is a waste of time," she said, glaring at Serena, "I'm only here because my parents signed me up. If they didn't, I wouldn't be bothered to come."

Serena tilted her head at the girl. "What's your name?"

"Abigail."

"Well, who else agrees with Abigail?" Serena looked around. Several other girls nodded. Serena frowned slightly, put out.

Serena took a deep breath. *I can do this. I can continue as long as one person is here.*

Abigail snorted. "Are you just going to stand there for the rest of the time?" when Serena didn't answer, Abigail picked up her bag, and got up from the table, and headed towards the door. Just before she left, she turned around.

"This is a waste of time. Anyone who stays is a fool." Sneering, Abigail left the room.

Serena kept on desperately moving forward with the problems. But Abigail's words still hung in the air. Soon after, everyone but one girl had left.

Serena continued with the problems, internally crying in distress. *What had gone wrong? She wondered to herself. No. I can't think about that now. There's still a girl here. While she is still here, I will continue to do this.*

When the Club was over, the girl was still there. Serena walked over to the girl, intercepting her before she could leave.

"Thank you," she said, blinking gratefully. "Thank you for staying."

"It could be better," she said, "Maybe you should do something fun next week."

Serena blinked in surprise. "You'll be here?"

"Of course."

Serena smiled. "Then I'll be waiting for you."



The next week, Serena prepared for the meet, trying to add more fun content to her agenda. This time, she borrowed a computer and a projector for Math Club. As she planned, she kept checking her watch, to see when the Club Members would arrive. She opened the computer and searched for fun quiz-like games for math. At the top of the feed was Kahoot. *Of course! Everyone loves Kahoot!* Serena quickly created a quiz and added the problems she created to the Kahoot. Then, she logged out of the computer. She looked out the window. The sun seemed to shine brighter today. Perhaps today would be better.

Serena arranged the desks in three rows of five. On each desk she placed a small stack of ten pieces of paper for the girls to use. She put three pencil, an eraser, and a pen on each table. *Hopefully that's enough.*

As the girls arrived, they immediately started texting underneath the table. Serena counted the number of girls there. Only six of them. Her spirits sank. She crossed her fingers. *Please, please, please make this work.*

Wait! She thought suddenly. *What is Abigail doing here? I thought she didn't want to come!*

Abigail saw her looking and sighed. "She told me to come," she said, jabbing her finger at the girl who had stayed. The girl smiled at Serena.

Serena cleared her throat. "Welcome everyone. Thank you to everyone for coming. Today we're going to start with a warmup." A few groans and eye-rolls from the group. "Can everyone please open Kahoot on your device. The code for today is 126458."

Some of the girls immediately whipped out their phones, opened Kahoot, and typed the code in. Soon, names started to pop up on the screen. However, three girls, including Abigail, were too busy chatting with someone on their phone.

Serena froze. *This won't work. I have to catch their attention. Something that will make them look up. I can take it from there.* An idea popped into her head. She adjusted the volume of her computer sound, and turned on the Kahoot music.

Abigail and the three other girls finally looked up, sighing and rolling their eyes. When they saw the Kahoot screen, they reluctantly closed their chat window and opened Kahoot, typing in the code. Soon, four new names popped up on the screen: Bella, Harriet, and @big@i1.

Serena sighed in relief. *Thank Goodness! Now I just need to keep their attention.* She cast a wry look at Abigail. *It's not going to be easy, though.*

Serena started the Kahoot. The first problem popped onto the screen.

Serena could hear the girls scribbling some things on paper, and then pings as they clicked their answer. When time was up, seven of them got the correct answer. Abigail and Katie high-fived, grinning.

"Right. Can someone explain how they got their answer?" Abigail and Katie immediately quieted down, unwilling to share. The rest of the girls seemed to be wary as well. Serena sighed. "I won't bite, you know." The girl who had helped Serena hesitantly raised her hand. "Yes? Also, tell me your name please."

"My name is Amy," she said. "Here's my answer: If Rachel uses 5% of her battery every hour, she can use it for $100/5=20$ hours."

Serena smiled at Amy. "Very good Amy!" she exclaimed.

Abigail rolled her eyes. “Even I knew that.”

Serena sighed. “Let’s continue with the next problem.”

She clicked the ‘next’ button, and let the next problem pop up on the screen. When time ran out, only five of them got the correct answer.

“Right. So does anyone want to say how they did this problem?” Serena glanced around. This time, a few hands went up, including Abigail’s, rather reluctantly. “Yes, Abigail?”

Abigail blinked in surprise when Serena called her by her name. “Uh, there are five ways to choose the first letter, four ways to choose the second letter, and so on. So that would be $5*4*3*2*1$, which is 120. And that’s the answer I got.”

Serena opened her mouth to speak, but was interrupted by another girl.

“Why do you multiply them?” she asked. After a moment, she added, “My name is Sarah, by the way.”

Abigail turned to face Sarah. “Because the five slots are independent, so we multiply. Remember? We multiply when they are independent and add when they are dependent.”

Serena smiled happily to herself. *It’s working! They’re talking to each other about math now!* She clicked to start the next problem.

By the time they reached problem ten, everyone was contributing, saying how they did it and arguing about the smartest method. When it was time to go, even Abigail looked slightly reluctant.

As Amy walked out, she turned around and called to Serena, who was still packing her stuff.

“Today was fun,” she said warmly, “I’ll be sure to tell some friends about this!” Amy hurried out the door.

Serena smiled. *Mission Accomplished.*



Just like Amy had said, the next week there were more girls. Amy came in with three new girls following her. She winked at Serena.

Serena smiled back. “Welcome!” she said to the newcomers. They looked around warily, before sitting together at a table.

When everyone arrived. Serena opened Kahoot. “Today’s code will be 346394.” As everyone started to open Kahoot, Serena smiled. They were settling into a pattern.

Months passed. The Club grew, from nine girls to twenty-five. Every time more girls seemed to join, brought by friends who had convinced them that it was fun. Even Abigail and her friends had settled in.

Soon, it was the end of the year. Serena prepared one last Kahoot for the Math Club to do.

“Alright everyone. The end of the year is almost upon us. This will be the last Math Club meet of the year.” Serena met each and every one of their eyes steadily. “I hope you enjoyed Math Club, and that you come again next year.” She started the Kahoot one last time.

When the meeting was over, everyone slowly walked out of the door. Almost everyone. A few stayed behind to give their thanks to Serena. Amy approached Serena first.

“Thank you,” she murmured. “For everything. I’ve always wanted to learn math, and become a mathematician. But fear of mockery stopped me. You showed me that girls can not only learn math, but

we can excel at it too.” A glint of determination appeared in her eyes. “Who knows, maybe I’ll become a mathematician when I grow up.” Amy smiled at Serena.

Serena smiled at Amy. “Thank you,” she said softly, “You helped me so much.” Amy gave her a grin, then left the room.

Abigail approached next.

“When I first came here, I didn’t believe you at all,” she confessed. “I guess I wasn’t that nice, but I thought you were pushing us to something that we couldn’t do. But you didn’t back off. You kept at it, until you showed all of us that we could be successful at math. You’ve shown me how fun math is. Even if I have different plans for my future, I’ll never look at math the same way again.” Her gaze softened. “Thanks.” Abigail stood by the door, waiting for Katie.

Serena blinked, surprised. *I didn’t realize I would have that much of an impact.*

Katie came forward. “I’ll be blunt,” she said, narrowing her eyes at Serena. “You messed up pretty bad that first day.” Serena gulped. *She must hate me*, she thought miserably. Katie continued. “But you made up for it. We could all see how hard you tried. I used to hate STEM. I would insist that girls are made for ELA. But you’ve changed my mind. Even if I still want to be a writer, maybe I’ll include math in my books.” She grinned at Serena. “See you next year.” Sauntering towards Abigail, they left the room together.

Serena stood there, shocked. *I did it*, she thought numbly, *I never thought I would. Abigail and her friends put me down over and over again that first day. But one person stayed. And that kept me going. I guess that just shows that you can do anything as long as your heart is up to it.* Serena felt a bolt of energy run through her. *Next year*, she promised to herself, *I’ll help the community even more.*