

What's Nu?

Chapter 1: Coach, the Teacher

Aelish was in class listening to the baseball coach lecture about Einstein's theory of "Relativity." Coach was a really good teacher. He explained that Albert Einstein was a genius and he figured out that what we see is not always what we get. For example, Mr. Einstein said that light traveled in waves, like throwing a stone in a pond. He said that light would bend around planets and stars because of the magnetic fields and huge gravity fields. He also predicted that time was not what it seems....even time travel might be possible. This was fascinating stuff to Aelish.

He told the class a little about the equation of Einstein's theory of Relativity even though they had not had algebra yet.

He said that energy (like heat or light or atomic energy) equals the mass of an object (similar to the weight) times the speed of light squared. $E=MC^2$ Aelish remembered a story about her aunt Leslie when she was a little girl. She came home and told her parents that she had learned something about Mr. Einstein's equation. She said that "E equals muck-two." That got a big laugh from the whole family.

It turns out, the coach said, that light is like a ocean wave with ripples. He explained that the distance between the waves is called the wavelength and physicists abbreviate it with the Greek symbol "lambda" or λ . The number of waves each second is called the "frequency" of waves. It is abbreviated by the Greek symbol ν , or "nu." Einstein figured out that the frequency of light waves was inversely proportional to the wavelength divided with the speed of light a constant 186,000 miles per second.

This was great stuff, Aelish thought. I wonder what it would take to invent a time machine. Aelish's mom was going to read a story by a famous Science Fiction writer, H. G. Wells called "The Time Machine," where a man travels into the past and learns a lot of things that aren't in history books and goes far into the future to see what happens.

Aelish knew that her grandfather was fond of puns. After class, she went up to coach and asked, "Hey, coach, what's 'nu?'"

Coach laughed out loud. “C over lambda,” he shouted. They both laughed. The other students looked at them like they were both nuts but they didn’t care.

Chapter 2: Play ball

She stood there at the plate. Seventh and last inning. Tie score, two out nobody on. Dug her left toe into the dirt. Glared at the pitcher. Shifted her hips to get the right balance. Put her bat off her shoulder, high behind her right ear, waggled it and waited. She was thinking fast as the pitcher seemed to wind up so sloooooowly while she thought, “I don’t care about his stats...I can hit this guy.”

Time stopped while Aelish used her math brain to figure the odds. She remembered that the pitcher had an ERA of 0.10. He had impressive statistics. An Earned Run Average of 3.0 was excellent. Nobody has an ERA less than one, she knew. Little League games were seven innings and this guy was a killer. Everyone called him “Killer.”

“Earned Run Average” she remembered, was the number of runs the pitcher allowed over a nine inning game divided by the number of innings pitched. This pitcher had allowed only one run in the seven games he had pitched in the league this year and that was a lucky in-the-park home run that hit the outfielder in the head. Not even Cy Young, the most famous pitcher of all time had ever had an ERA under 1.0.

When the kid that lost the ball in the sun got hit, everyone laughed except Killer. It should have been an easy out. “Killer” kept grouching about his bad left fielder as he talked to the catcher. Aelish thought this pitcher was the worst sport of all. All he cared about was himself. She couldn’t hear what they were talking about, but the catcher was shouting at Killer.

The coach went out to hug the fielder who missed the ball. The Yankee coach felt so badly for the kid. He wanted him to feel ok...he had tried and he was a good ballplayer. All players make errors, even pitchers. Pitchers make “Earned Run Errors.”

Aelish thought to herself, “I hope I can make sure this jerk makes at least another error” She smiled. The field cleared when the outfielder walked off the field. Everyone in the stands clapped for him. Killer stopped talking to the catcher and went back to the pitcher’s mound.

Aelish watched all of this, but now she was at bat. She focused herself, relaxed, bat cocked, and looked the pitcher directly in the eye. “I know I can hit this guy,” she said aloud as the pitch came over the knees, a wicked curve breaking at the last moment.

“Striiiiiiiiiiiiik One,” said the umpire.

Killer took the throw back from the catcher and grinned. The catcher said just under his breath so the umpire couldn’t hear...but Aelish could. “So the great Aelish can’t hit a curve ball...woo, woo.”

Aelish was pissed. She glared at the catcher, got settled again in the batter’s box and wagged her bat.

Killer looked in at the catcher, nodded and began his windup. Aelish looked at his glove. He was gripping the ball across the seams. “Probably another curveball,” she thought.

The ball came in slowly, fat, a change-up, easy to hit, but Aelish was expecting the curve.

“Striiiiiiiiiiiiike two,” came the umpire’s call.

“Woo, woo,” said the catcher, louder this time. “Girls should take knitting and stay away from boy’s games.” Aelish was really pissed now, but she didn’t say anything.

With a count of two strikes, the pitcher looked at the catcher, nodded and began his windup.

Again it was slow motion. Aelish’s brain took over and started calculating things. She thought, “I have a batting average of .425 in this league. That’s almost a hit every other time I bat. I lead the league in batting average and I have a slugging average of .750. I know I can hit this jerk.”

She saw the pitcher had not hidden his hand in the glove. Big mistake. She could see that he was gripping the ball on the seams. “Fast ball,” she decided.

The pitcher raised his leg, came down off the mound as hard as he could and let fly. Aelish shifted her weight back on her right foot, timed the pitch, and felt the wonderful feeling of a bat hitting a ball perfectly.

She knew it was gone. She trotted off to first base, not showboating at all, went around the bases and came down to home plate. Just before her teammates came out of the dugout to give her hugs, the catcher said “Lucky hit.”

She turned around and said to the catcher, quietly, “You guys are bad sports. Take your ERA and stuff it. Why don’t you just have a good time playing baseball?” Then her coach picked her up and hugged her while her teammates were dancing up and down.

Killer had been watching all this. After the celebrations were over and everyone had left the field, he wandered over to Aelish. He touched her on the shoulder.

“I’m sorry. Bubba, our catcher, shouldn’t say things like that to you. You are a really good baseball player. I wish you were on my team.”

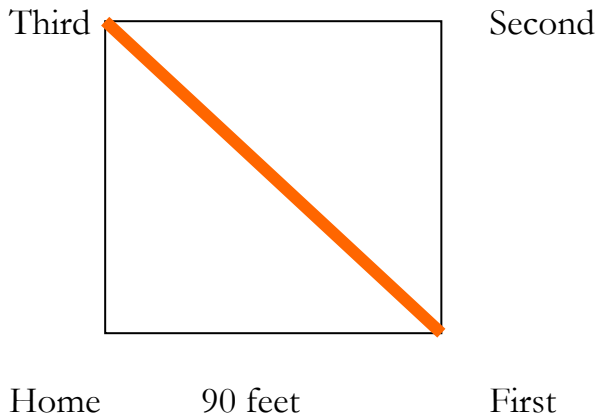
Aelish was taken aback. She expected Killer to be the jerk she was sure he was. “Thanks,” she said and shook hands, looked at him one more time and walked back to the dugout.

Aelish felt good about everything today. Nice to be a Met.

Chapter 3: Ouch!

It was a cold, rainy afternoon. Baseball practice was not fun, running in the sloppy outfield, catching wet balls, but it had to be done. The playoff games were next and the Mets needed the practice. Often the coach would give the team instructions on drills that would make their defense better. Today, he asked a surprise question. He told them that it was 90 feet from home to first, from first to second, second to third and third to home. So the perimeter of the baseball diamond was 360 feet.

“So,” he said. “Can anyone figure out how many feet it is from first base to third base directly without going to second base?” He drew a diagram in the dust.



The players looked at their coach as if he was completely nuts. What did going from first to third have to do with Baseball?

Coach said, “I know how good Bobby’s arm is because he plays third base and throws to first all the time but sometimes the first baseman has to throw out a player at third too. If that happens, we would like to know that Aelish can make the play every time. Now how far is it?”

The coach was also the math teacher at school and most of the guys on the team thought this was a big pain in the butt, but Aelish started to figure it out anyway because she liked math best.

“A little over 127 feet,” she said after awhile.

“Great,” coach said. All the guys looked at her, amazed. “Now let’s get to practice. Sorry about the weather, but we have to get this show on the road if we are going to beat the Yankees in the playoffs.”

They all went about their business. Aelish hit fly balls to the outfielders. Coach hit ground balls to the infielders. The pitchers warmed up on the sidelines.

Later they all played their usual positions in a game just for practice. With two on and two out, the batter hit a slow grounder just to the right of first base. Aelish scooped it up and rifled it to third. “Out!” said coach and he smiled. 127 feet wasn’t too far for Aelish’s arm, that was for sure.

It was Aelish's turn at bat the next inning. She got settled, crouched a little as the ball came in chest high. She swung as hard as she could. The ball dribbled down the third base line and she ran to first base. Just before she reached first, the ball went "thwack" in the first baseman's glove for an out but Aelish still ran as fast as she could. Coach always said to run out the play no matter what. It showed hustle and a good attitude. As she crossed the first base bag, she tripped and fell.

She didn't get up. She held her ankle. It was incredibly painful. She didn't want to cry but it hurt so much, tears started to run down her cheeks. The ankle started to swell up. It began to throb. Coach came over right away and told her to relax as he began to feel her ankle very carefully. Then she was surrounded by the rest of the team while coach tried to find out what was wrong.

Coach began to gently massage her ankle, but Aelish cried out in pain. This was a very bad sprain. Coach picked her up and took her to his minivan to take her to the hospital. Later, her mom and dad were there with coach. The doctor said that there was no ligament damage, but she should just stay off her leg for awhile. He said that it was going to be very hard to run on it for now.

Aelish said loudly, "Does that mean I can't play in the playoffs against the Yankees?"

The doctor, looked at her, and shook her head. "I'm afraid not, Aelish. Sorry. Your ankle is very badly sprained. It will be several weeks before you can walk on it. Here are some crutches that you will need to use to get around. At least you can be a cheerleader on the bench while your ankle heals."

Aelish listened while the doctor explained to her parents and coach what they needed to do to help heal the bad sprain. Soaking in hot water with Epsom Salts. Regular light massages to get the blood to the capillaries. Perhaps the coach could arrange for Aelish to be able to put her injured ankle in the whirlpool at the local high school. That would help.

She listened to all this. "I am going to play," she said to herself.

Chapter 4. The Playoffs

There were six teams in the playoffs. The Mets killed the Tigers 6 to 0. The next game, still without Aelish who sat on the bench with her crutches, was a 5 to 4 thriller in two extra innings against the Dodgers. The accursed Yankees had won each of their games against the Red Sox and the Athletics easily. This was the game for the Little League championship. Killer was the opposing pitcher.

Aelish hobbled over to the team huddle on her crutches. Coach looked at her and put his arm around her shoulders. "Ok, guys. We can beat these guys. We did it earlier in the season. Killer is a good pitcher, but remember that Aelish hit a home run off him. He isn't invincible. Let's just play heads up ball and we can win."

In the first inning, the Yankees got a run on a hit, a walk and an error. In the third, the Mets challenged with a walk, a hit batsman and a long fly ball but couldn't get the runner home. Still 1 to zip, Yankees.

Aelish sat on the bench rooting for her team, but unhappy because she couldn't play. In the fourth inning the Mets got a player on third with an infield single, a stolen base and a long fly ball. Killer was still very hard to hit.

At the seventh inning stretch, the teams got together for a time out. Coach looked at his team. They were still down one to nothing and their last chance. Aelish walked over to the team huddle and tried to pump her team mates up. "Come on, you guys," she yelled. "We can beat these guys."

The second baseman, Bobby, was up first and grounded out to the shortstop. Then the left fielder, Mick, legged out an infield hit. The catcher hit a long fly ball and Mick went to second. Two outs. The pitcher, Kelly, bunted, made it to first and Mick was on third. One out from oblivion.

Coach called for a time out. Aelish came over to the huddle. Coach said, "One more chance. Aelish, I saw you walk around without your crutches. Can you run at all?"

"I don't think so, Coach," she said truthfully. "But I promise you I can try to get a hit and get to first base if I hit it hard." Coach looked at her. Her crutches were back at the bench. He had noticed that she had left them there and could jump up and down when she was excited.

He looked over at Axelrod, the first baseman who replaced Aelish when she had hurt her ankle.

“What do you think, Axe,” Coach asked? Axel looked at Coach, looked at Aelish and said, “Give her a shot, Coach. She can hit this guy.” Coach thought for a few moments and said, “That is a really unselfish thing to do, Axel. Ok, Aelish, nail this sucker.”

Aelish took her favorite bat out of the rack, limped to the plate and watched Killer warm up. She dug her left toe into the dirt. She smiled at the pitcher. She sort of liked this guy because he had been nice and honest with her before. But just like before, she shifted her hips to get the right balance. She put her bat just off her shoulder, high behind her right ear, waggled it and waited. And frowned as she focused, looking at the pitcher’s motion on the mound.

Killer looked down to the catcher. Bubba gave the sign and said, really soft so that the umpire wouldn’t hear, “Little girlie Aelish, woo woo, can’t run, can’t hit, can’t play with the big boys...ha ha.”

Aelish ignored Bubba. He was the real jerk, she realized.

The first pitch came in high and hard.

“Steeeeeeriuuuuuike one,” the umpire called.

Aelish tried to relax. She knew that her ankle wouldn’t take much, so she had to get a hit so that she could hobble down to first. That meant a triple at least.

Killer was winding up. He threw a pitch that looked really hard and Aelish swung as hard as she could. The ball plopped into Bubba’s glove.

“Woo, woo,” Bubba said. Strike two.

Aelish dug in again, looked back at the catcher. She said, “Bubba, you are a bad sport. When I hit this ball, I want you to know that you are a gosh-a-mickle, dickle-pickle, gee willie wobble, rowerbazzle.”

The umpire asked loudly, “What did you say?”

“Nothing bad,” Aelish said, grinning and turning again to Bubba.

Then she turned around to face Killer. They looked at each other. Now it was just a contest. Killer throwing, Aelish the hitter, Bubba dumbstruck and silent.

Killer went to the rosin bag. He picked it up, threw it away, planted himself on the rubber and looked in for the sigh from Bubba. Aelish looked back. "Call a fast ball, chicken little," she said. "I can hit anything he can throw."

Then Aelish turned again to face Killer's best fast ball.

And the ball floated up, a change up. Bubba is even dumber than I thought, Aelish thought. He called a fast ball. The ball came up, then down, like a big balloon, Aelish timed it perfectly.

"Thwaaaaaak" was the sound as the bat hit the ball. Right down the pike. Deep into the gap in center field and right field. Aelish hobbled to first base. Bobby and Mick made it to home plate as Aelish stood on first base. Game over. 2 to 1. The Mets were champions.

There was a huge celebration, Everyone hugged Aelish. Everyone danced around. Aelish hobbled around. Bubba sat in the Yankee dugout after everyone had left. Aelish went over, finally, and sat in front of him.

"I really think you need to talk to Killer. He is a good sport. You can lose and still be a good baseball team."

She got up, went over to her dugout and picked up her crutches. Her ankle really hurt. As she went to the bus, someone tapped her on the shoulder, It was Killer.

"You know, Aelish," he said. "If dumb ol' Bubba had called for a fast ball I would have struck you out."

"Yeah," Aelish said. "And monkeys would fly out of my butt."

They both laughed and hugged. Killer said, "Wait until next year."

Aelish said, "I can hardly wait for your next change up." She laughed, so did he, and she got on the bus home, Mets champions for this year at least.

Chapter 5: The End

Coach came up to Aelish in the bus. He gave her another hug. She said, “Hey, coach. What’s ‘nu?’”

“C over lambda,” he answered. This time they didn’t laugh. They knew what it meant.