



THE 2023 YOUNG MATHEMATICAL STORY AUTHOR (YMSA) COMPETITION

**THE CINDY NEUSCHWANDER AWARD
(THE 12-15 YEARS OLD CATEGORY)**

SHORTLISTED

'Leicester The Cheese Tester' by Sophie Kelland (12 years old)
at Townley Grammar School (UK)

You can read the author's inspiration for the story and the judges' comments
on:

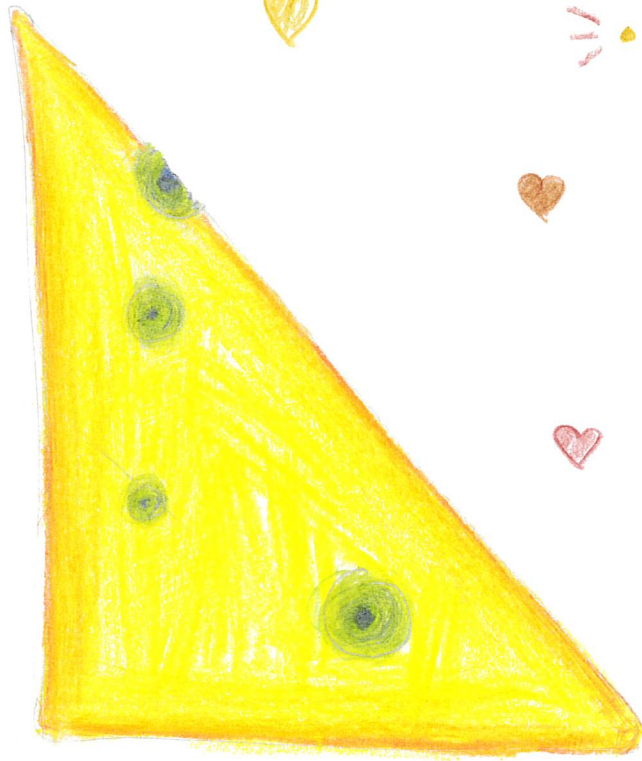
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#YMSAMaths

LEICESTER

THE CHEESE

TESTER



Sophie Kelland Townley Grammar

Leicester the cheese tester

Introducing the characters...

Leicester

*Leicester is
A world famous
Cheese crafter*

Cheddar

*Cheddar is Leicester's
friend and his
birthday is coming up.*

Maverick

*A skilled mathematician
And is good friends with Leicester*

Evelyn

Hot air balloonner.

It was the beginning of May and Leicester sat on his little mouse sized stool and thought of his next creation. After all Leicester was the best cheese crafter in town and was known for his amazing cheese, both in flavour and in his intricate designs. Whilst he was daydreaming about the cheese in the fridge, he received a call from Cheddar, his best-mouse friend.

"Hello Leicester!" Cheddar said merrily

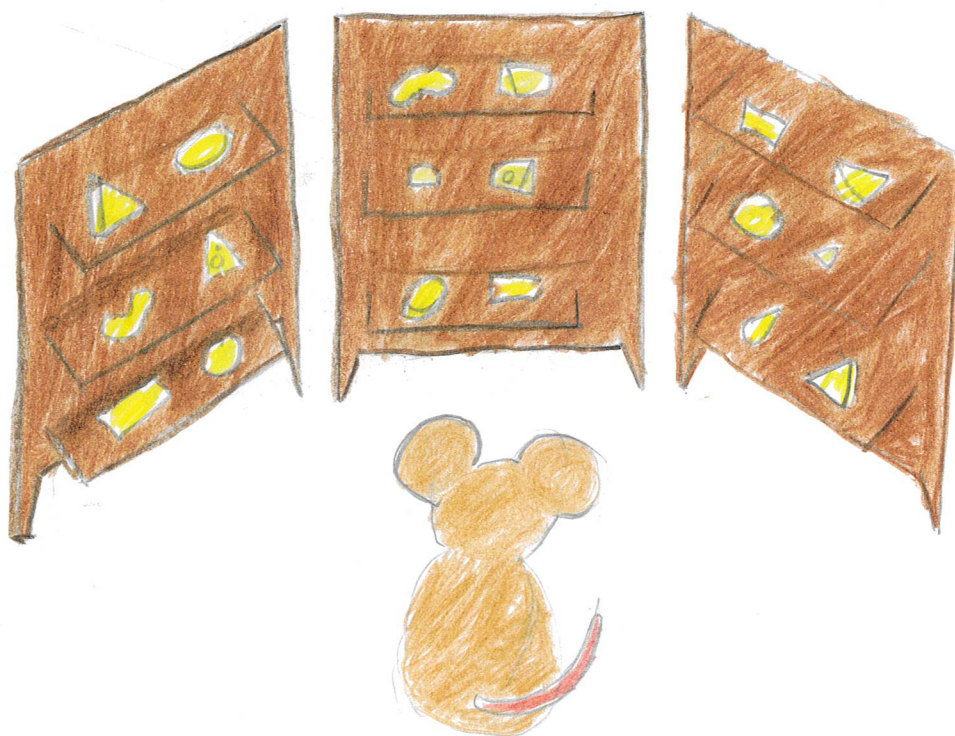
"Hello!"

"I was wondering if you could make me a MASSIVE cheese for my birthday coming up but the hypotenuse has to be 15 metres long or the cheese will not fit on the stand I bought."

"Don't worry Cheddar, I've got you covered." Leicester said with a grin on his face, excited at the prospect of making such a magnificent cheese sculpture.

"You're a life-saver! My cake didn't come!" Cheddar squeaked

"No worries, bye Cheddar!" Leicester put the phone down and started to plan his dear friend's giant cheese cake. First of all he scuttled to his stock room and searched the shelves for the most delicious cheese he had.



Leicester hopped onto his antique ladder and clambered to the top shelf to take down his finest cheddar cheese. He grasped it in his little paw and jumped down elegantly. He examined the cheese carefully to make sure it was in good condition. Leicester nibbled the

corner of the cheese, just to make sure it was as sweet and creamy as it could be.

He walked over to his crafting table and sat down to get to work but soon Leicester spotted a problem. Cheddar had asked for the Hypotenuse to be exactly 15 metres long but he only knew the length of the base and height of the cheese and Leicester was a good cheese maker but certainly not a good mathematician. He pondered for a few seconds before calling Maverik, after two rings he picked up and squeaked a very big hello for such a small mouse.

"Hello to you too!" Said Leicester to Maverick "why so chirpy?"

"Well" Maverik replied "I've just figured out how to work out the hypotenuse of a triangle only with the knowledge of the base and height!"

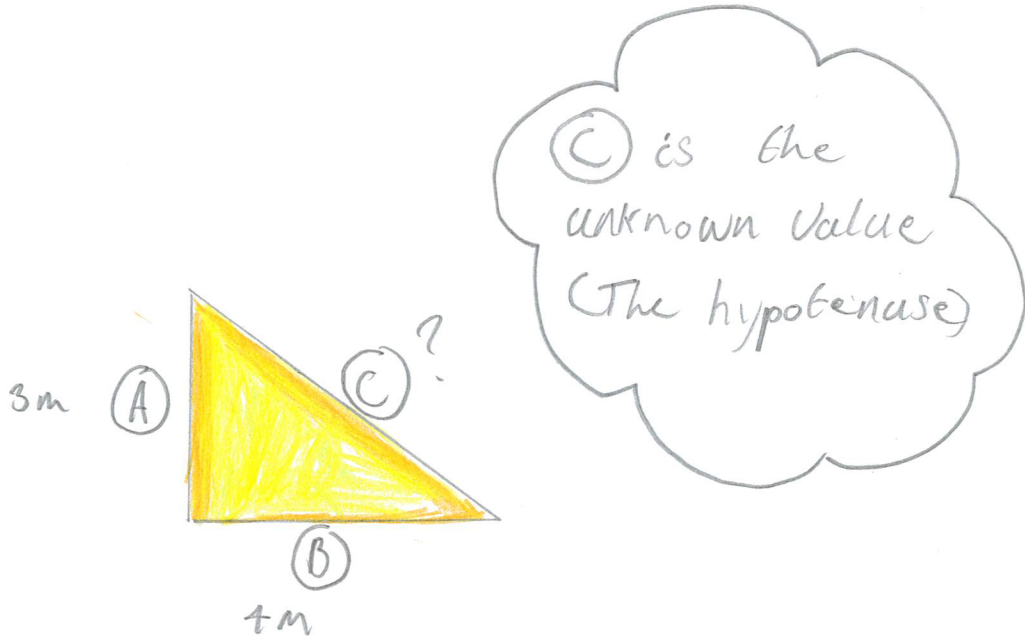
"Funny you say that because that was the very reason I called you, I couldn't figure out how to do it, I hope you wouldn't mind coming over for an hour or so to help me with it."

"I'll do it...but under one condition, there are snacks." Maverick replied sheepishly

"My friend! When have there ever not been any snacks." so they agreed a time and Leicester started to bake his famous cheese biscuits for Maverick's arrival.

1 hour later and the sweet aroma of freshly baked biscuits filled Leicester's house and in came Maverick. Greedily he grabbed a biscuit and popped it into his mouth and then sat down to look at his work

5 minutes later he cried out "Ah ha! What we have here is simple we should even be able to do the first few steps in our head but to make it easier let's draw a diagram to represent the small cheese:



So as you can see, along the bottom of the triangle (the base) is 4m long and the height of the triangle is 3 metres so to work out the hypotenuse you simply have to square a and b labelled on the diagram so 9 and 16 and then add them together which is 25 and then find the square root (what times itself equals the number) of 25 which is 5. And it's that easy. The small cheese's hypotenuse is 5. For future reference the formula is $a^2 + b^2 = c^2$

"Oh my that is awfully clever!" exclaimed Leicester "But you'll have to explain a few more times as I'm not nearly as quick as you!"

"I'm sure you'll get it in no time" scoffed Maverick

"I hope so."

Some time later Leicester had figured it out.

"Hang on," squeaked Leicester, "but Cheddar specifically said it had to be 15 metres long and these are only 5 metres long?"

"Yes, I noticed, but fear not. I already have a plan." said Maverick triumphantly.

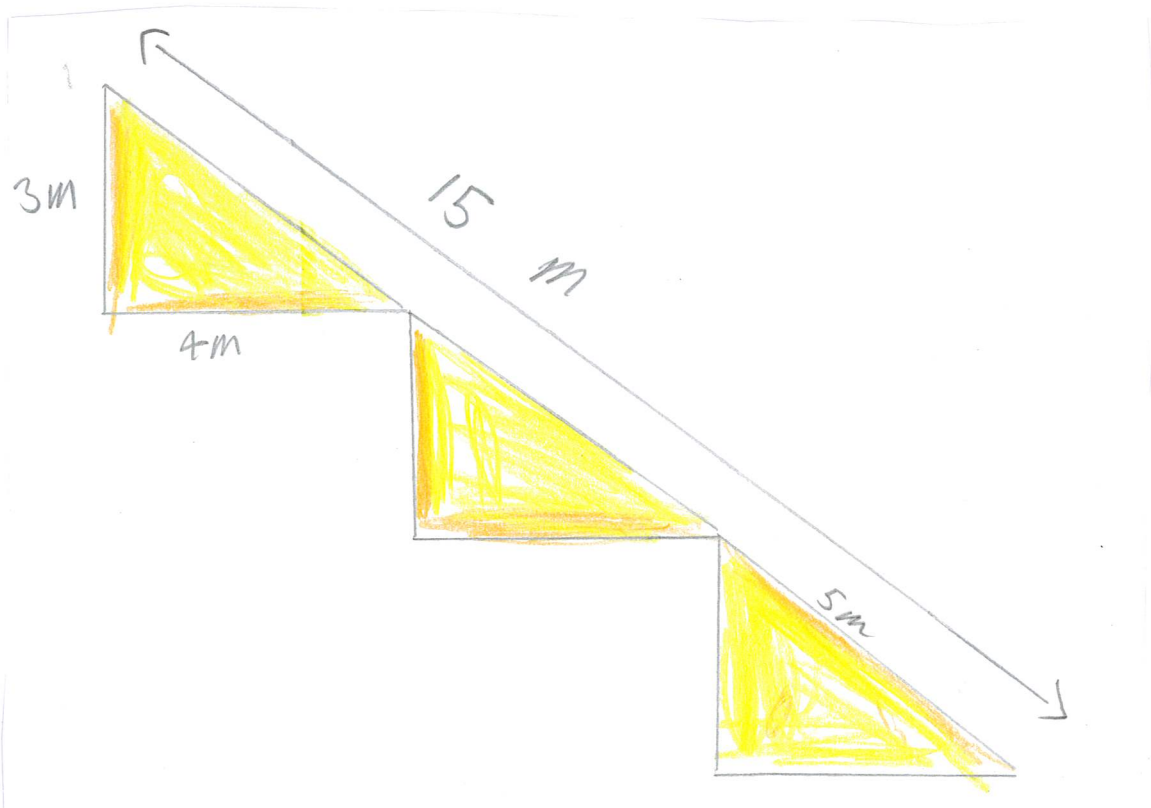
"Well do fill me in."

"Okay so the cheese's hypotenuse has to be 15 metres right? Well the cheese we have is only 5 metres long but luckily for us 15 is divisible by 5!"

"Uh huh" said Leicester not catching on

"Well look, we can use more than one cheese to make it, so 15 divided by 5 is 3 so we use 3 cheese's hypotonus to make the massive one" Seeing Leisester still confused Maverick sighed and said, "Alright let me draw another diagram."

"Thanks" Leicester squeaked, feeling embarrassed that he still had no clue what Maverick was going on about.

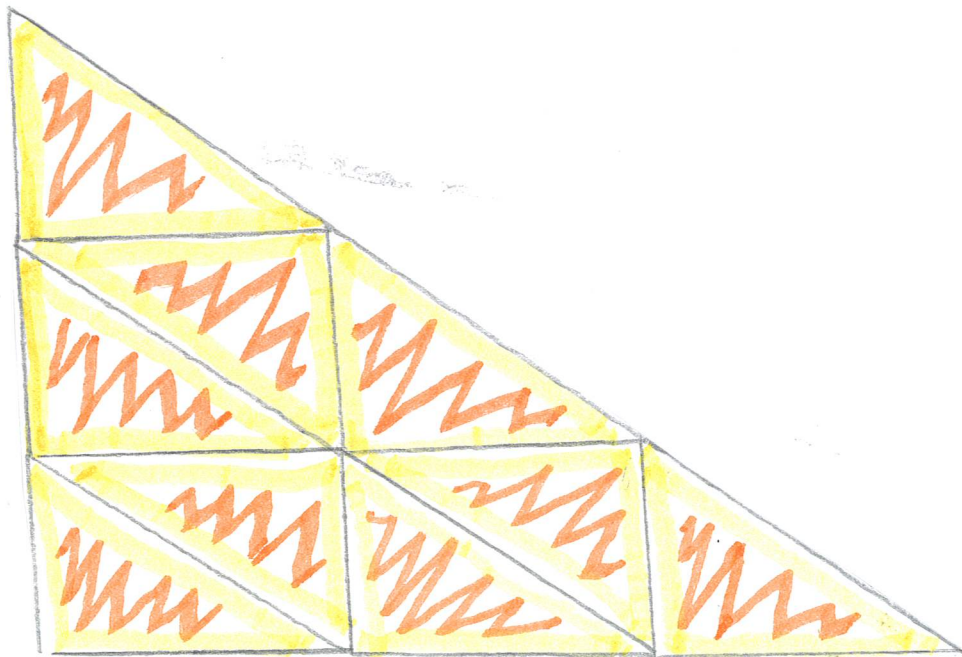


"Aah, I get it now" Leicester said now, feeling rather proud of himself. Maverick smiled, pleased that his friend, finally, understood but then he frowned as he saw Leicester's whiskers droop

"What is it now?" Maverick asked, confused

"Well, it's great that we've made the hypotenuse 15 metres long but it's not exactly a... triangle is it"

"Oh Leicester" Maverick chuckled. "As clever as you are in this instance you are not at your best. See all you have to do is rotate the cheese so it fits in the slots." Maverick cut out some paper triangles to show him how it would work.



"Okay, that makes more sense now" with a huge smile on his face.

"Now all I have to do is get 9 small blocks of cheese and melt the gaps between them together!"

"Well I think i've done my work here." said Maverick, happy that he could help a friend

"I can't think how I shall ever repay you?!"

"I do" Squeaked maverick and with that he opened Leicester's front door and walked out... holding the plate of cheese biscuits in his hand. Leicester sighed and giggled as Maverick shut the door.

Leicester hurried back to his stockroom to collect 8 more cheeses then sat back down at his crafting table to melt together the cheese. First he pulled up his stepladder and began placing the cheese in the right spot and cheese by cheese it was done! Leicester stepped back to look at it. It was certainly big! That's for sure. The little mouse was just adding the finishing touches when a thought crossed his mind. How would he get the giant, and I mean GIANT, cheese to Cheddars party. Leicester looked through his address book trying to find someone that could help. His paw froze on one thing Evelyn's hot air balloon services. Every mouse in this whole town had a sunroof and you could open it to let fresh air in. They were pretty big too... A hot-air-balloon could definitely fit through. So that was that Leicester called up Evelyn and she agreed to fly over in her special party hot air balloon for the party and help fly it over in time for Cheddar's birthday. It would be a magnificent surprise, the hot-air-balloon was loaded with confetti cannons and balloons, as Leicester was dreaming

about how much Cheddar would love this! There was a knock at the door. That must be Evelyn he thought, and skipped over to let her in. "Hi! It's so good to see you" Squeaked Evelyn, giving Leicester a hug, he blushed and showed her the cheese.

"It's a good thing I brought the biggest balloon I had or else it would not fit! Anyway we better get to work putting this cheese into the balloon's basket" Together they managed to lever the cheese into the basket. By now both mice were tired out and decided to have a quick cup of warm hot chocolate and talk about how they were going to pull this off.

"Lucky for us," Leicester said, "The hinge on cheddars sunroof is broken so whilst you hover over cheddars roof I can hop down onto it and uncover the sunroof, then i'll climb back up into the balloon and then we go down through the sunroof and surprise Cheddar."

"Well i don't think I have anything to add!" exclaimed Evelyn, clearly impressed.

So 1 hour later that's exactly what they did. And the look on Cheddar's face when he saw the hot air balloon and cheese was the sweetest thing and he literally jumped with glee as he bit into the creamy cheese. They all took a group photo and framed it. It was a moment to remember forever.

Join Leicester on his journey to save his friend's party! Along the way he faces problems. Will he be able to save the day in time for Cheeldar's birthday?



I have really enjoyed writing this story my inspiration for this story was my love for mice, I know!, and maths. I hope you have enjoyed reading this story as much as I have enjoyed writing it!