THE 2025 YOUNG MATHEMATICAL STORY AUTHORS (YMSA) COMPETITION

THE STUART J. MURPHY AWARD
(THE 8-11 YEARS OLD CATEGORY)

SHORTLISTED

‘Tile Trouble’

by Anshika Kasliwal (11 years old)
at PEP School v2 (India)

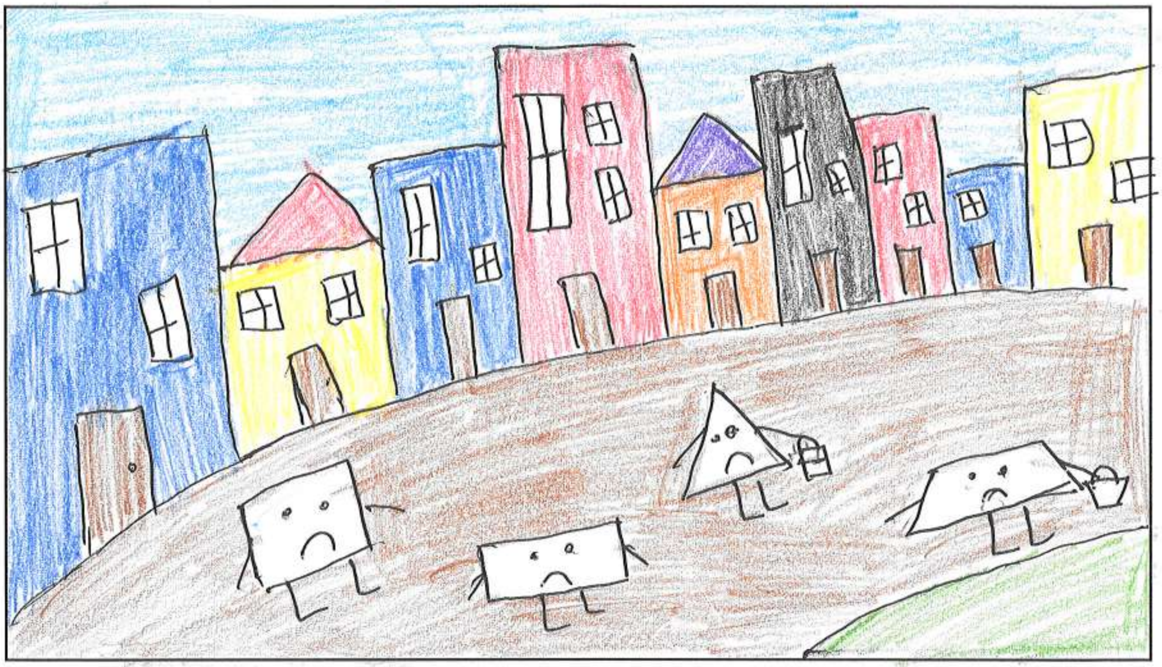
You can read the author’s inspiration for the story and the judges’ comments on:

www.mathsthroughstories.org/ymsa2025

#YMSAMaths

TILE TROUBLE!

Once upon a time, there was a town named Shapeville, where shapes lived happily. Though the buildings were colourful, the shapes themselves were, unfortunately, colourless.

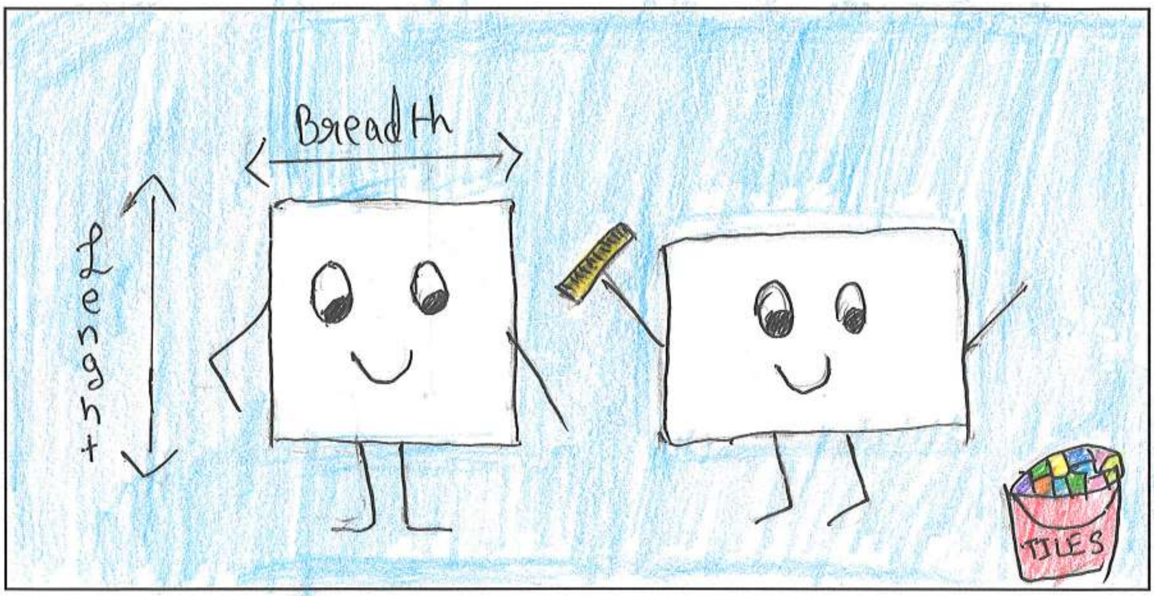


One day, Mrs. Square got tired of her plain old self and decided to put colourful tiles on herself to become more vibrant. But Mrs. Square didn't know how many tiles she needed. So, she went and asked Mr. Rectangle, who was known to be very smart.

"Oh, hi Mrs. Square. What are you doing here?" asked Mr. Rectangle.

"Hi, Rectangle. You see, I am very bored of being plain and colourless. So, I had this idea that I could stick colourful tiles on me to make myself colourful. But the thing is, I don't know how many tiles I need. Can you help me?"

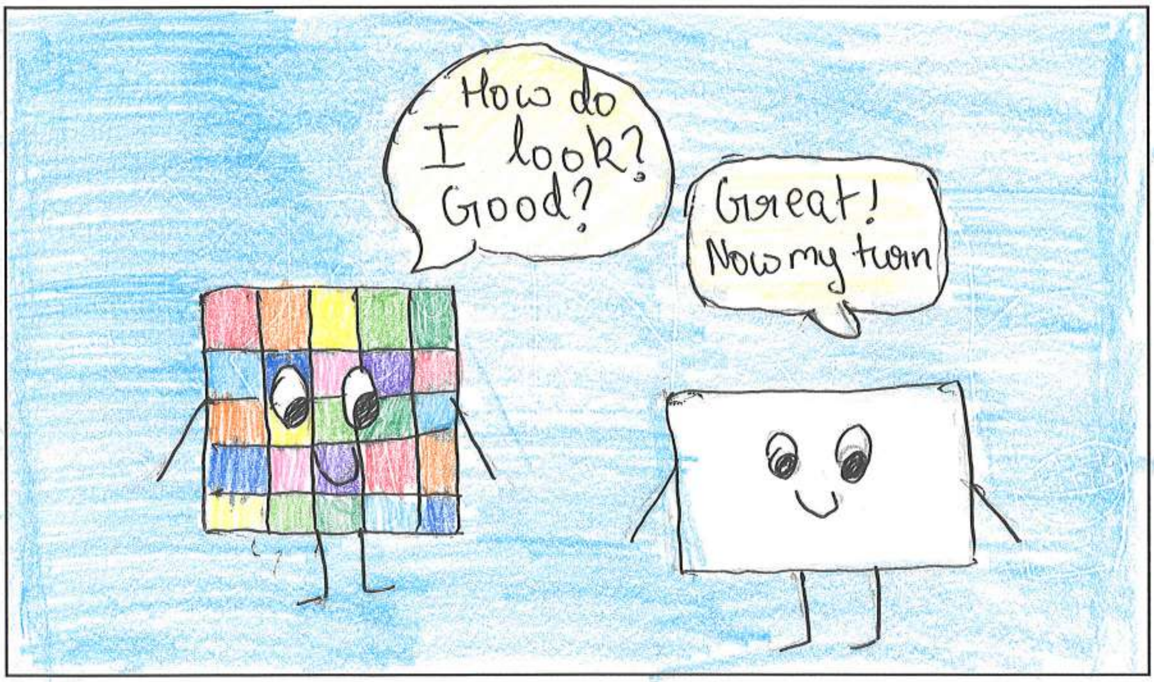
"Of course, why not?" replied Mr. Rectangle.



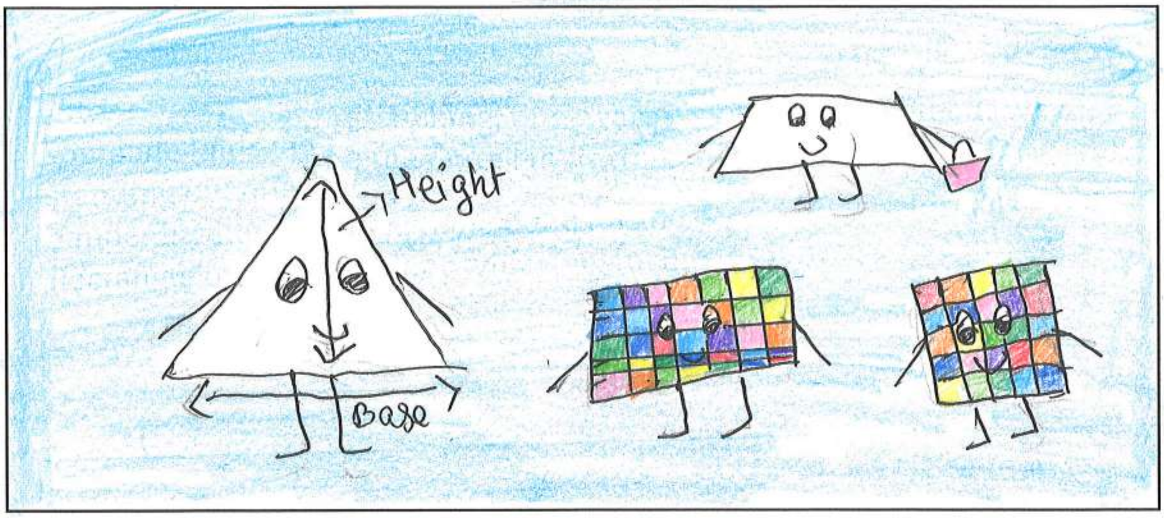
Mr. Rectangle took out his measuring tape from the drawer and started measuring Mrs. Square's sides. "Okay, look," Mr. Rectangle started to explain. "One side of yours is 5 cm, and since all the sides of a square are equal, all your sides are 5 cm. The formula for the area of a square is length × breadth, and both your length and breadth are 5 cm. So your area is 5 × 5, which equals 25 cm^2." "Wait, but why do you even need to find my area?" Mrs. Square questioned. "So that we can find your total surface," Mr. Rectangle responded. "Anyway, the area of one of these colourful tiles is 1 cm^2, since one tile's side is 1 cm, and 1 × 1 = 1. So, if the area of a tile is 1 cm^2, then we need 25 tiles since your area is 25." "Great, thank you! Do you think you could help me stick the tiles on myself?" "Sure," Mr. Rectangle said.

And so they got to work and started sticking. By the time they were done, Mrs. Square was looking fabulous and very colourful. "Can we do it for me too?" Mr. Rectangle asked curiously. "Of course. I'll help you."

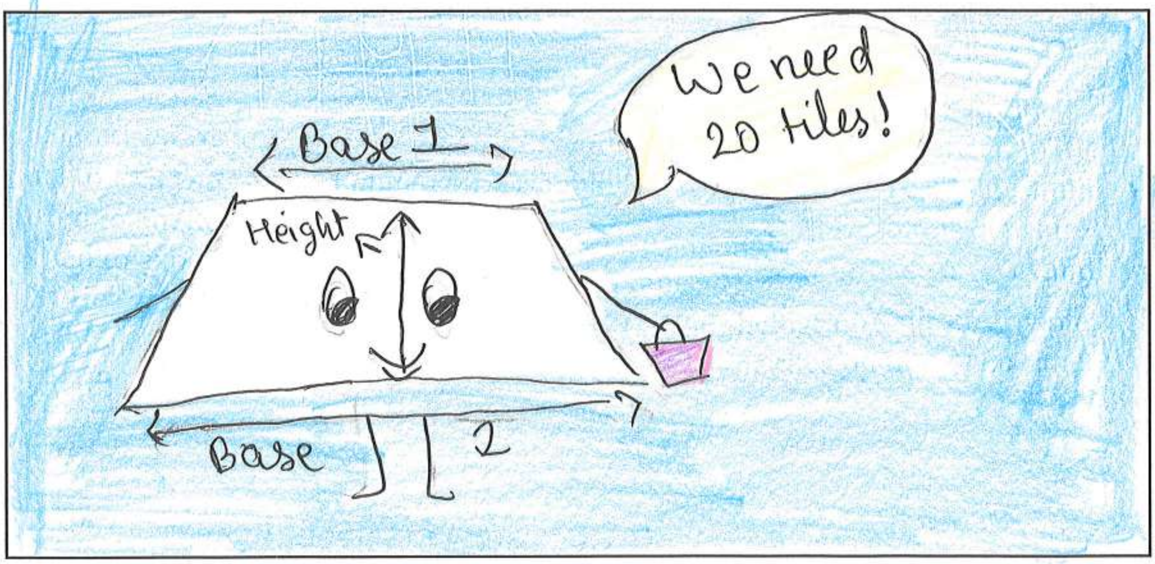
"Okay, so the formula for the area of a rectangle is also length × breadth. I've measured myself before—my length is 7 cm and my breadth is 5 cm." "So," Mrs. Square interrupted, "your area is 35 cm^2 — 5 × 7!" "Yes, that's correct. Good job, you understood!" "Yay!" Mrs. Square said gleefully. Once again, they started sticking.



Together, both of them stepped outside—looking as colourful as ever—and everyone looked at them, fascinated. "Can you do it for me too?!" asked Mr. Triangle. "Ooh, and me!" said Mrs. Trapezium. "Sure, why not?" Mrs. Square replied. And so they set off to Mr. Rectangle's house. "Wait, how do we do it for Mr. Triangle? He's, well... a triangle," Mrs. Square questioned. "Don't worry, I'll show you," said Mr. Rectangle.

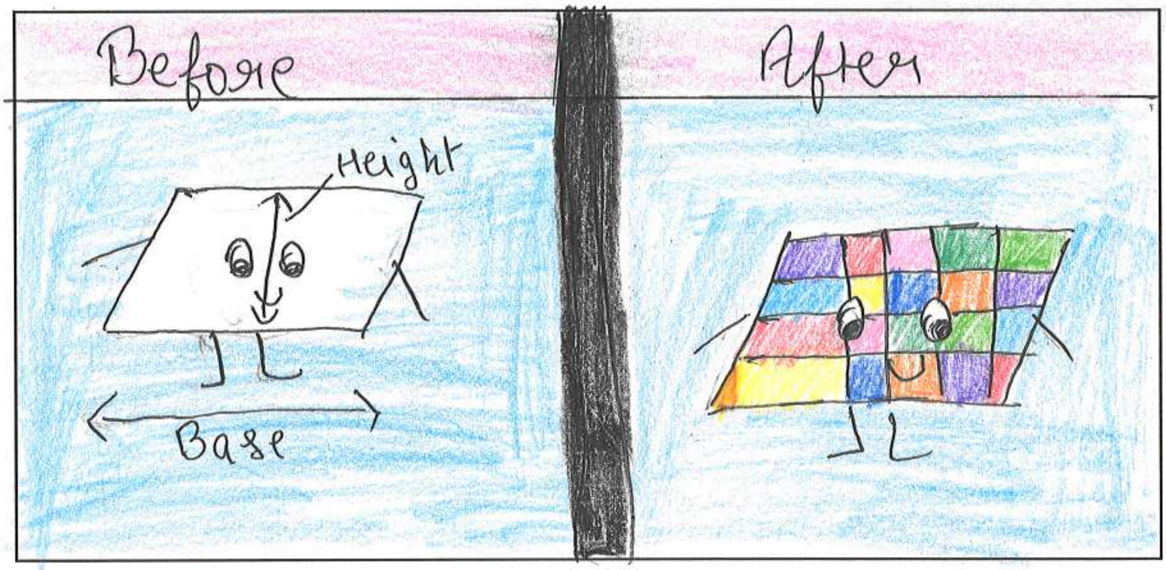


Over at Mr. Rectangle's house, they got to work. "See, the formula for the area of a triangle is base x ½ height or (base x height) ÷ 2. And Mr. Triangle's base and height are...", he said while measuring Mr. Triangle. "Base = 4 cm and height = 6 cm. So,his area is —" "Wait, I want to do this one." Mr. Triangle interrupted . "If my base is 4 cm and my height is 6 cm, that means....... My area is 12 cm^2 !" he declared. "Good job, Mr. Triangle. That means we need 12 tiles. Let's get to work!" After they were done, Mr. Triangle was also looking colourful. "Ooh, you look so beautiful!" exclaimed Mrs. Trapezium "Now let's do it for me!"



"For Mrs. Trapezium we're going to need to do things a little differently. Since the top and bottom bases are different sizes and the sides are tilted , the formula is - (base 1 + base 2) x ½ height. Base 1 is 4 cm and base 2 is 6 cm. Also, her height is 4 cm. So — actually,Mrs. Trapezium, do you want to do this one?" "Oh, yes, umm....(4 cm+6 cm) x ½ of 4 cm. That is..... 20! So, my area is 20 cm^2 !"

After they were done, sticking, they were just about to head out when someone knocked on the door. Mr. Rectangle went to open the door and standing outside was Mr.Parallelogram. “I heard there were makeovers happening here. Can I get one done for me too?” “Oh yes, for sure.” Mr. Rectangle opened the door wider, gesturing for him to come in.



“So, how do we know how many tiles we need?” Mr. Parallelogram asked. “We need to find your area.” Replied Mr. Triangle. “And how do we do that?” They all turned to Mr. Rectangle. “The area of a parallelogram is actually quite simple,” He started to explain “The formula is just base x height. Here, let me measure for you.” He said reaching for his measuring tape again. “Your base is 5 cm and your height is 4 cm.” “So, my area is 20 cm^2.” Mr. Parallelogram said, clearly pleased with himself. Together they were done sticking the tiles on him in no time.

All together, the five friends set out together , all colourful and pretty with everyone staring at them, fascinated. With their help soon everyone knew about area and everyone was colourful and happy.

The end

BLURB

In the wonderful town of Shapeville, all the buildings are bright and colorful, but the shapes are stuck being plain and colorless. One day, Mrs. Square decides she's had enough and wants to add some color, but she has no idea how many tiles she needs! Luckily, Mr. Rectangle, the smartest shape in town, is there to help. Together, they embark on a fun math journey and make themselves - and everyone else- colourful. From triangles to trapeziums, the shapes work together to make themselves look amazing—and they all learn a little math along the way!

ABOUT THE AUTHOR

[You can add a drawing of yourself here]

My name is Anshika and I am 11 years old. I study in PEP school V2 in Bangalore, India. I was born in Indore, Madhya pradesh on January 21st.