THE 2023 YOUNG MATHEMATICAL STORY AUTHOR (YMSA) COMPETITION

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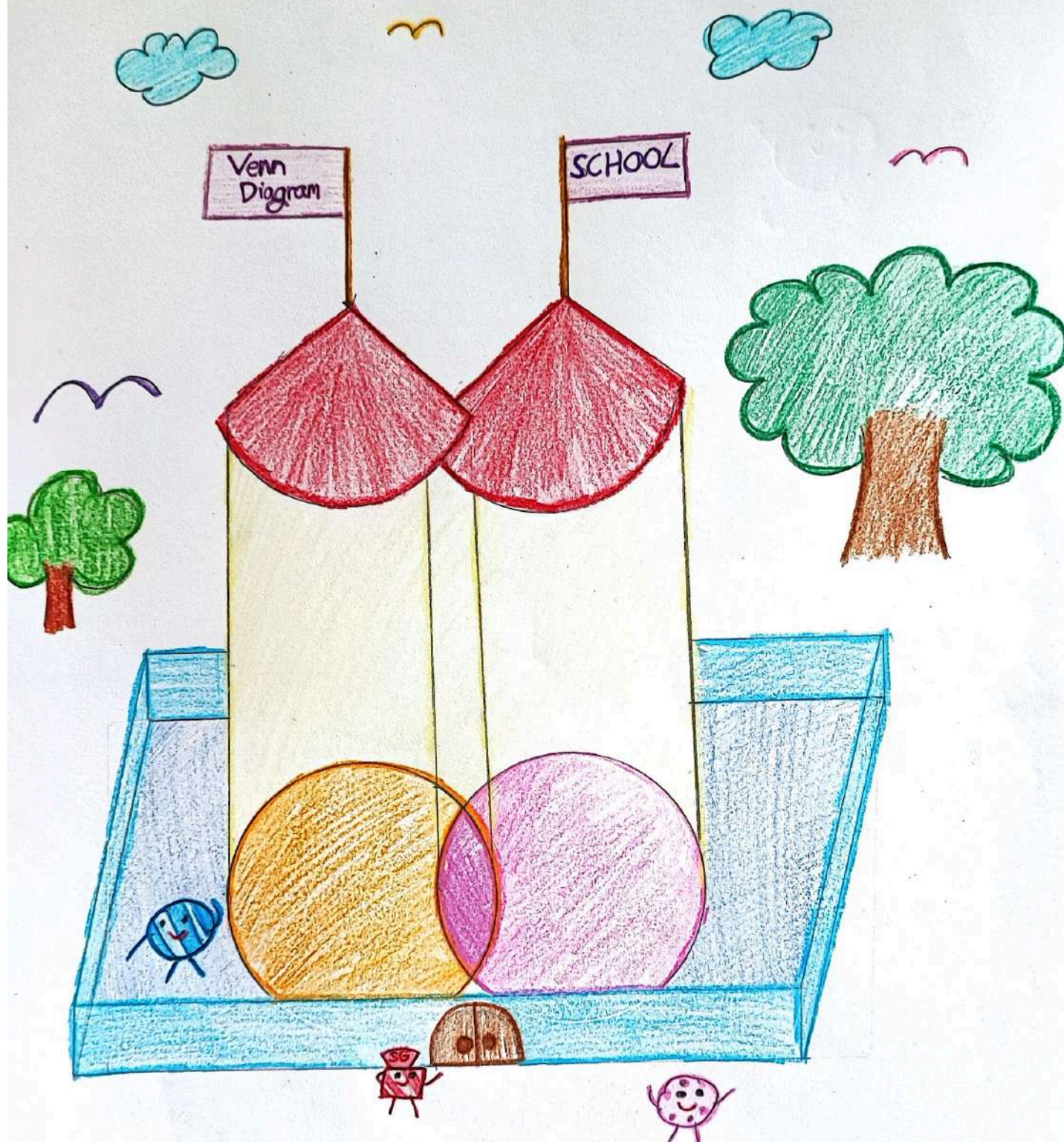
(THE 8-11 YEARS OLD CATEGORY)

SHORTLISTED

'Venn Diagram School' by Anzu Chaichanavong (8 years old)

at Harrow International School Bangkok (Thailand)

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

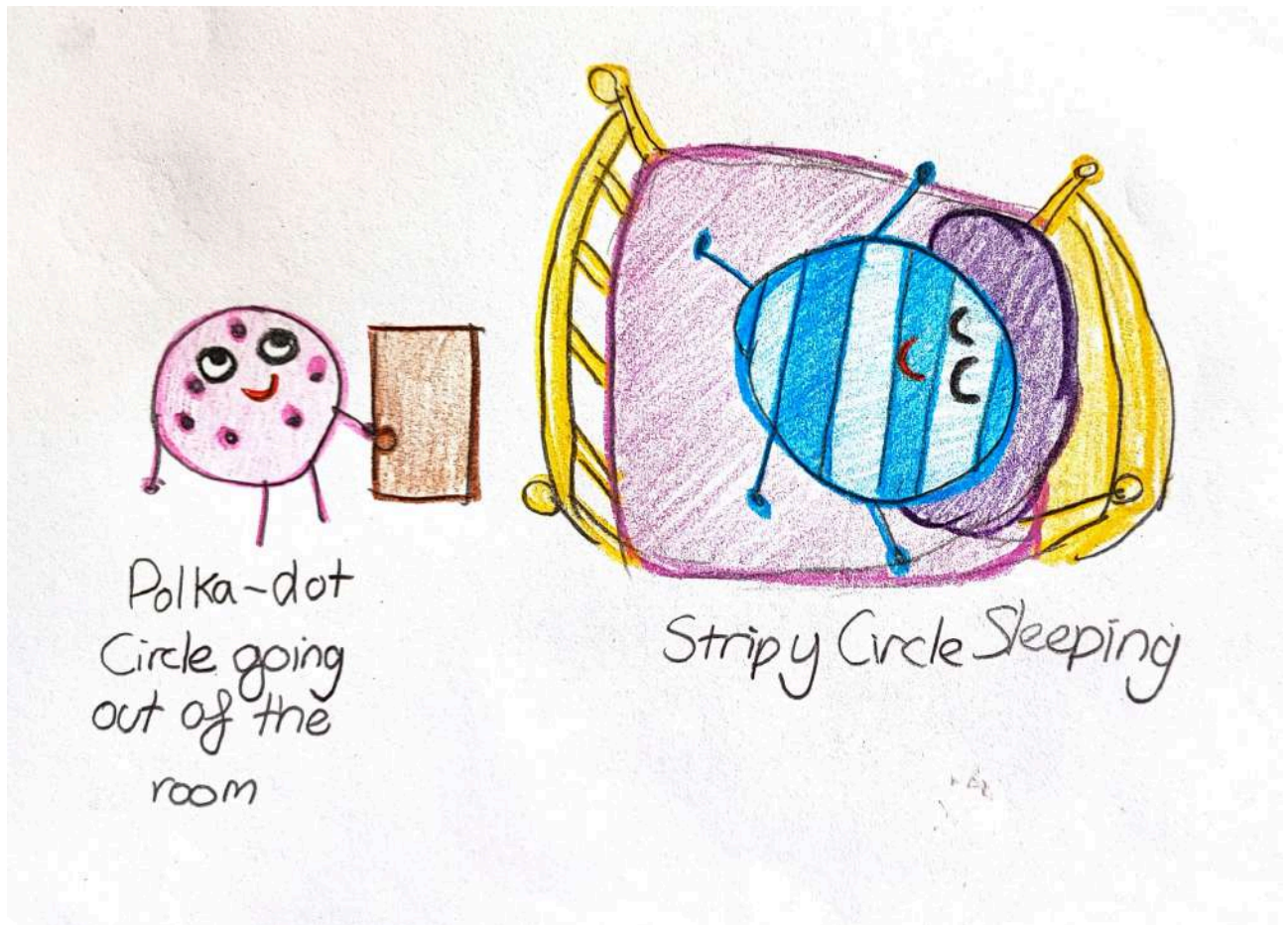**www.mathsthroughstories.org/ymsa2023**

#YMSAMaths

Venn Diagram School

By Anzu Chaichanavong

"Tomorrow I'm going to a boarding school for the first time, Mommy!" announced Stripy Circle cheerfully, bouncing up and down on her bed. "Finally! I've been waiting for this for ages! I wonder what room I'm in."
"I think it'll be a lovely old room," replied Polka dot Circle tiredly. "Look. If you don't go to sleep, you won't even have the energy to go to your school". She had hit the right spot. Stripy Circle immediately fell deep into slumber. "Good" she muttered and crept out of the room.

Polka-dot Circle going out of the room
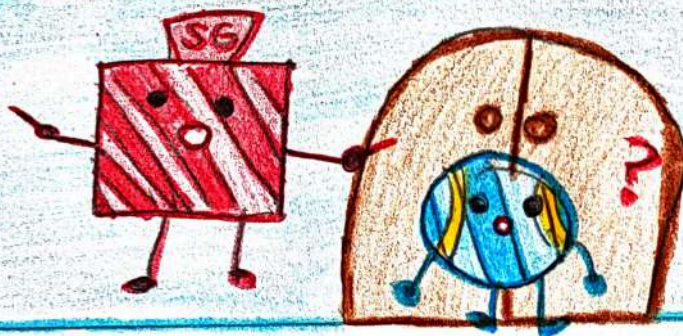
Stripy Circle Sleeping

Stripy Circle woke up early in the morning, with the sound of her mum's warning ringing in her ears. "If you don't go to sleep you won't be able to go to your school."

"Bye, mom!" yelled Stripy Circle as she raced out of the house, still eating her breakfast. She did not want to be late on her first day!

As she arrived at the school doors, she asked the security guard with her best business voice "My name is Stripy Circle. Which room do I go to?"

"Stripes: Left, Circles: Right. Now get it!" Replied the security guard in a gruff voice.

"Wait, wait! I'm both! Which room do I go to, then?" uttered Stripy Circle desperately. But the security guard wasn't listening. He was too busy talking to another security guard. So, it left Stripy Circle no choice but to get in. So, she did.

Stripy Circle talking with Security Guard.

As Stripy Circle wandered around, she decided to peek into the left room and the right room, to see if she could spot any stripy circles (other than herself of course). She peeked into the left room first. There were stripy quadrilaterals, stripy triangles, stripy pentagons, stripy hexagons even a stripy nonagon! But no stripy circles.

She then looked in the the right room. Now, there were circles galore! Polka doted circles, swirled circles, star-dotted circles… but still no stripy circles. Hmmm…

"Excuse me!" Stripy Circle tapped someshape on the back. "Which room should I go to?" That someshape was carrying a basket…
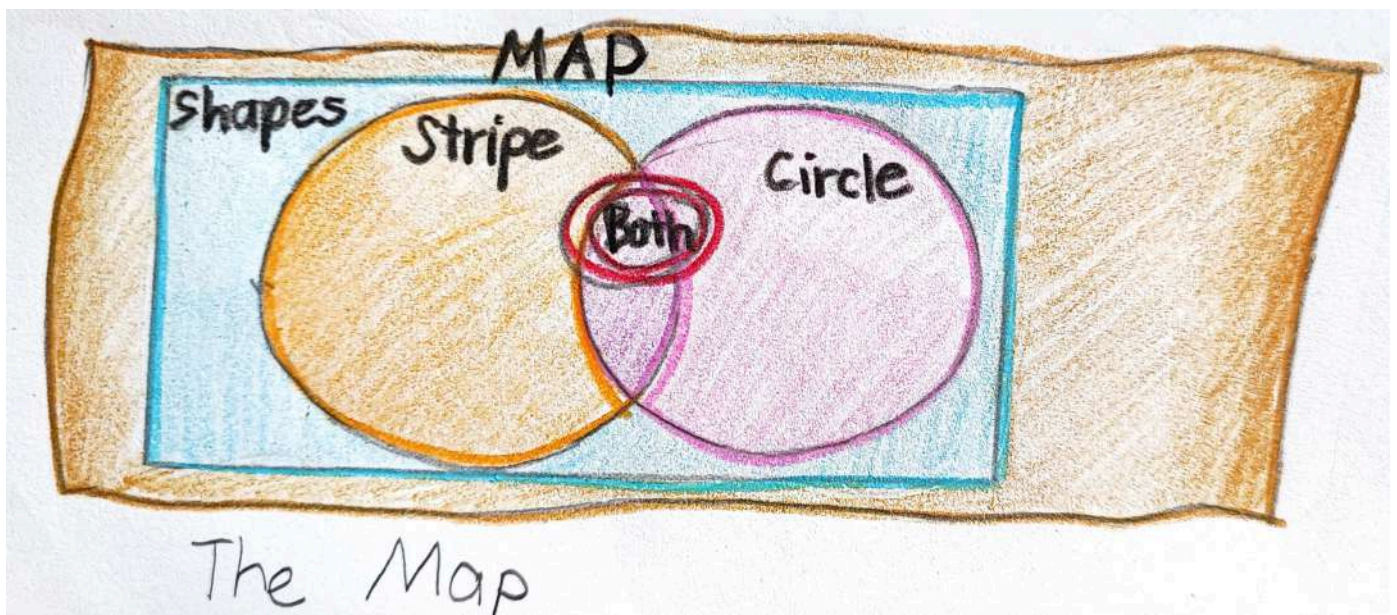

Stripy Circle Looking in each room

"Hmm? Oh! You go to the middle room, of course! You're both!" replied the shape knowledgeably.

"Huh? Why? They didn't say stripy circles go in there." murmured Stripy Circle puzzled.

"They don't need to! The Venn Diagram School's structure is designed as a 'Venn diagram', hence it's name. A 'Venn diagram' has two values, to sort things. In this case, the two values are 'Stripy' and 'Circle' and it's sorting us! Shapes!"

"But I still don't get it. You're just giving me a load of info, about Venn diagrams. What does Venn diagrams have to do with my room?" moaned Stripy Circle. "My school bag's heavy, and I want to get to my room."

"Let me show you." replied the shape patiently and took out a piece of paper from his basket, and placed it on the table. He double circled a title.

The Map

"Not only does the school *look* like a Venn diagram, but it also *works* as one. You're both stripy *and* circle, so your room is here, where two circles overlaps." explained the shape, pointing to each room on the map. "Do you get it, now?"

"Aha! I got it now! But I have one more question. Why is the school even designed like this in the first place?" asked Stripy Circle.

"Oh… Umm… Err… Because… By the way, take this map."

"Okay, but why.. ?"

"Go!"

"But I also don't want to take your only map."

"…"

"It's not my only map" said the shape sheepishly.

"What? Why would you carry lots of identical maps around?"

"It's not my only map," repeated the shape louder, but also sheepishly. "Because I'm the **map giverer**. Now, go!"

"Err… Okay! Thanks" called Stripy Circle as the shape ran away.

Map Giverer walking away

As Stripy Circle looked carefully between the two enormous doors, she could see a faint outline of a hidden door! She carefully pushed the door open… and saw stripy circles of all sizes and colors! So, she placed her things in one of the so small rooms that was linked to the big room, like she saw everybody else do.
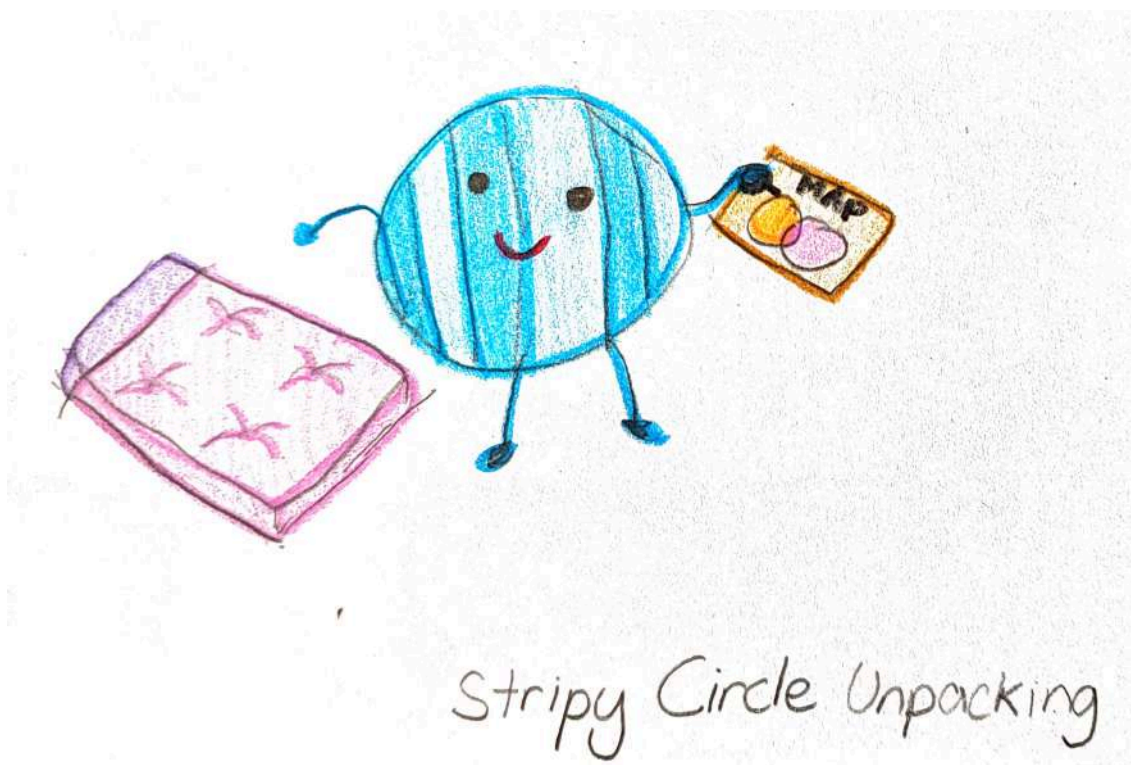
Then, Stripy Circle decided to go and say hello, so she tapped a random stripy circle on the back.

"Hello, my name is Stripy Circle, and…" began Stripy Circle.

"Oh! My name is also Stripy Circle. What a coincidence!" Interrupted the shape.

"Yeah! What a coincidence!" agreed Stripy Circle.

Stripy Circle Junior laughed. "I was joking! Everyone's name is Stripy Circle in this room! Anyway, I'm bored. What should we play?"
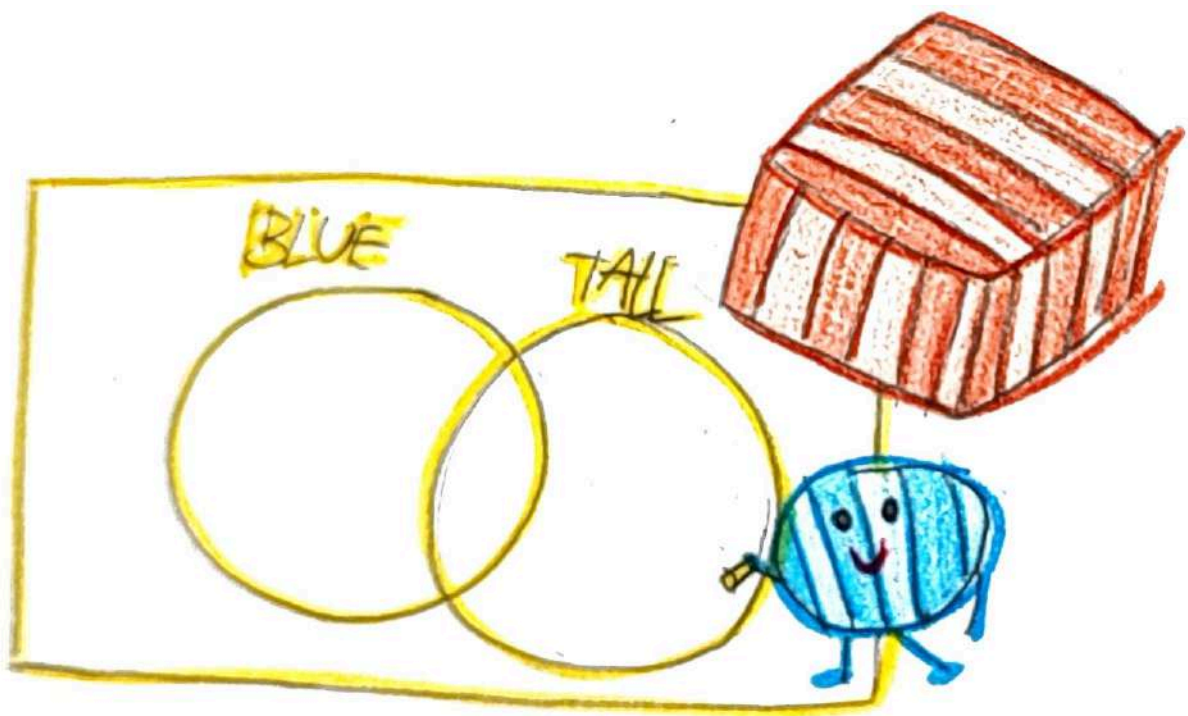

Stripy Circle Unpacking

"Let's play "Venn-Diagram!" announced Stripy Circle when everybody had their attention on her.

"How?" everybody asked.

"Like this!" Stripy Circle leapt down from the enormous packing box and get out a piece of chalk. She drew two overlapping circle on the ground. She thought for a moment, then labeled on 'BLUE' and the other 'TALL'.

"Oh! I get it!" volunteered a stripy circle. "We sort ourselves again into this Venn-Diagram." The stripy circle jumped into the big 'BLUE' circle. "I'm blue, but I'm not tall, so I go in this box here!"
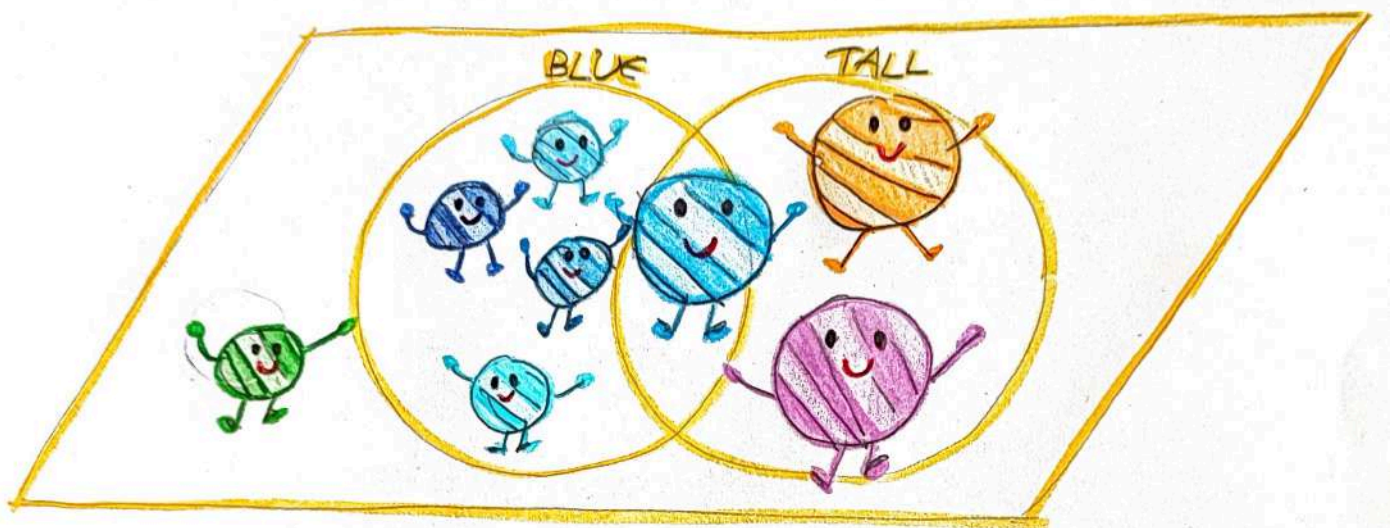

Stripy Circle Drawing the Venn Diagram

"Ah! We get it!" chorused everyone else.

There was a huge break of shuffling and squeezing, and nearly everyone got in. But, one confused circle asked "Wait, I'm green and I'm short. Where do I go?"
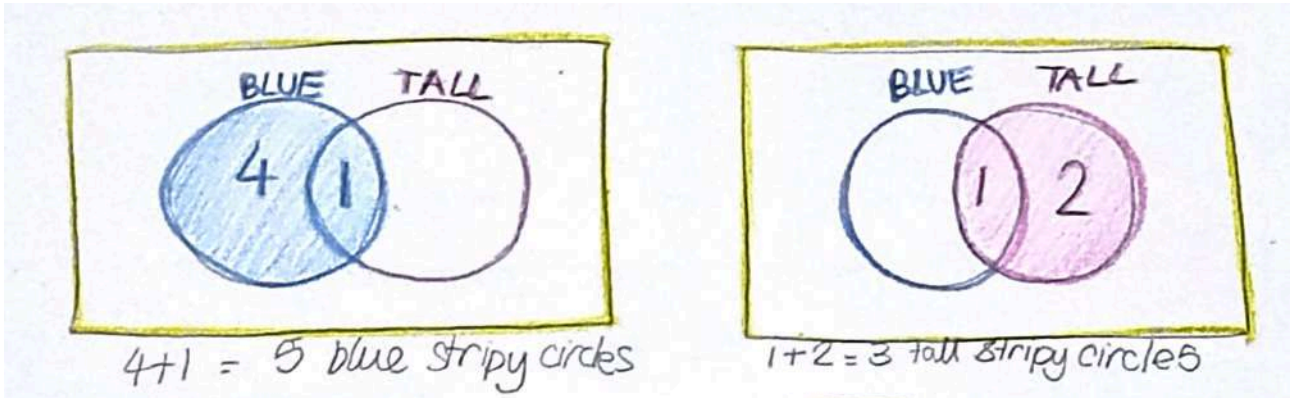
"Ah! You go outside these 2 circles because you aren't <u>BLUE</u> or <u>TALL!</u> You can't go in either, because you don't belong to any of these categories.

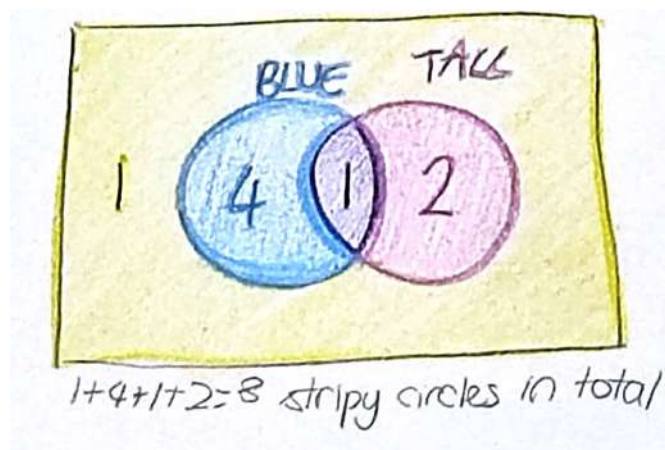"I get it!" replied the green stripy circle, and went outside the 2 circles.
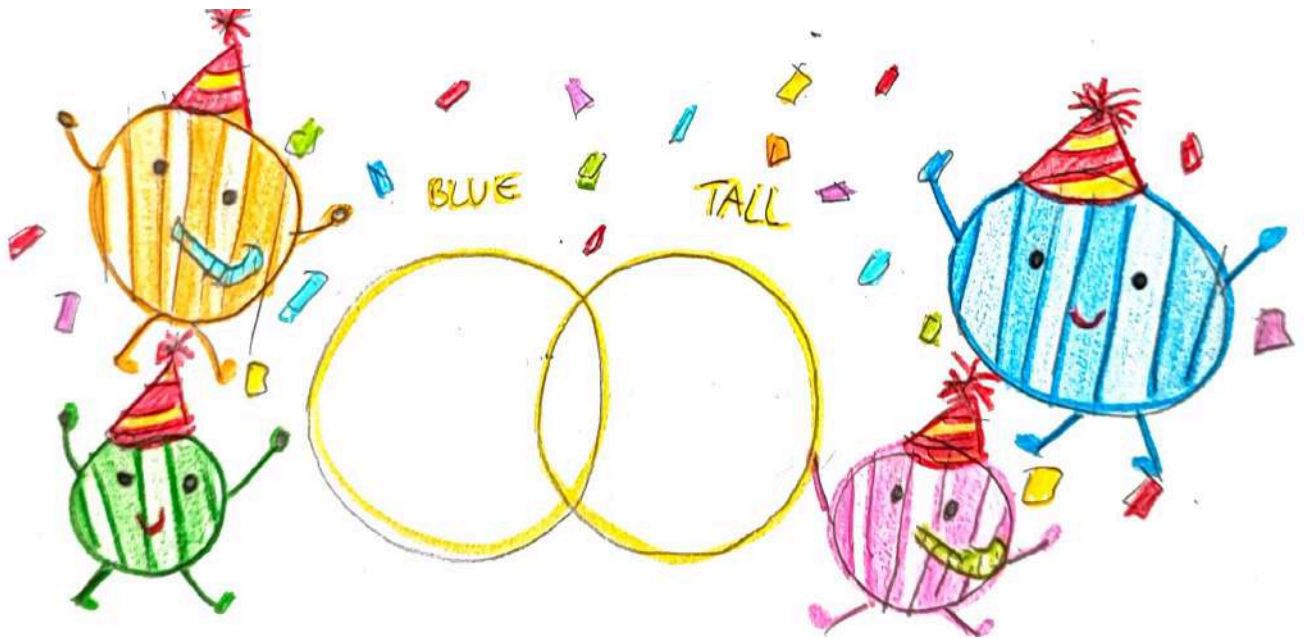
Venn Diagram Game

So, there are 4 blue only stripy circles, plus one both blue and tall circle, equals 5 blue stripy circles altogether, and there are 2 tall only circles, plus 1 both tall and blue circle which makes 3 tall stripy circles in total!

4+1 = 5 blue stripy circles   1+2 = 3 tall stripy circles

Also, if we want to find out how many stripy circles there are in total, we can't just add those 2 numbers together and add the one not blue and not tall stripy circle! This is a common mistake, because the only blue and tall stripy circle cannot be counted twice. Instead, we should just add each amount together: 4 blue only, 1 blue and tall, 2 tall only, and 1 neither, which is 8 stripy circles altogether!

1+4+1+2= 8 stripy circles in total

Now, 'Venn-Diagram' has become a popular game for stripy circles. Everybody is happy, because they know how Venn-Diagrams work. And now YOU do too!

BLURB:

Stripy Circle is excited for boarding school. But, when she arrives, she is swept into a fun packed maths adventure! Will Stripy Circle find her room? Learn about Venn Diagrams, along with little Stripy Circle.

ABOUT THE AUTHOR:

My name is Anzu, and I live in Bangkok Thailand. Now, I am 8 years old. I study at Harrow International School Bangkok, class 4E. When I grow up, I want to be an author and I have won some prizes. I also like maths, so when this competition came up, I decided to enter.