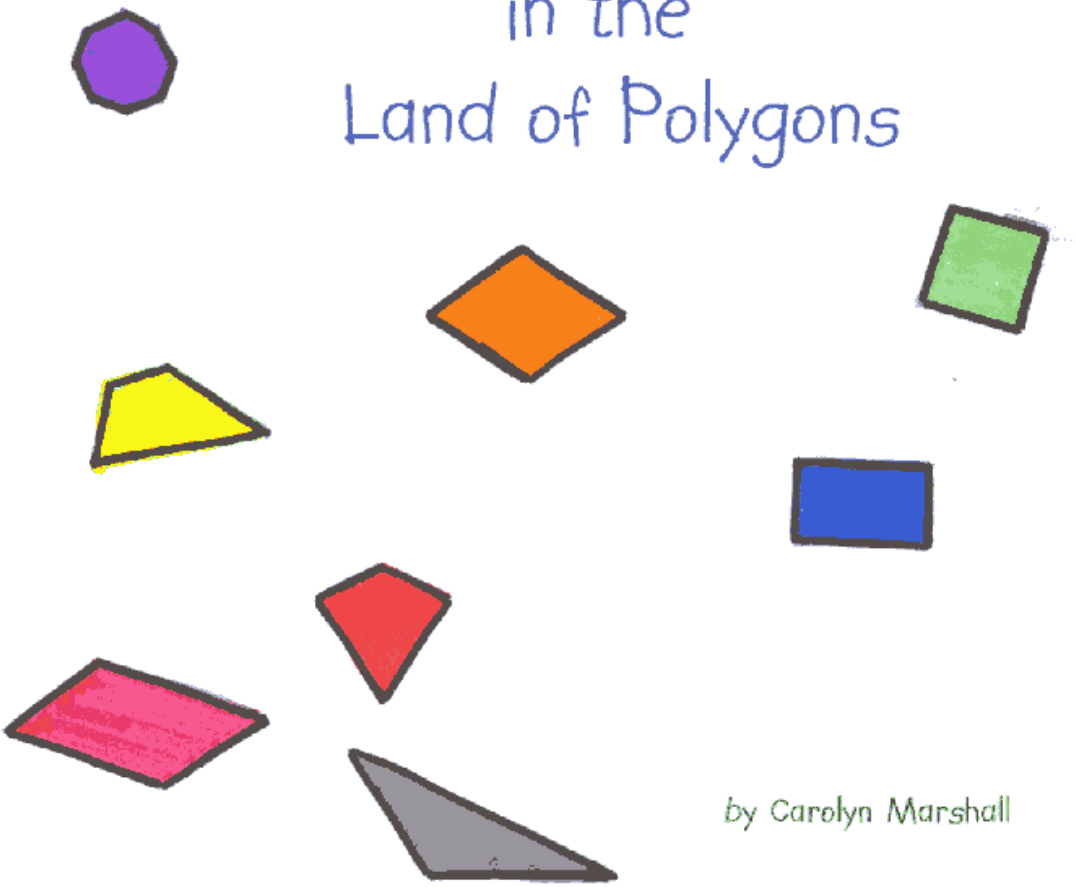
WHO AM I?

Rogie in the Land of Polygons



by Carolyn Marshall

This story was written as a student project for a mathematics class (MATH 3403: Geometric Structures) intended for prospective elementary teachers. These materials have been developed as part of a project supported by the National Science Foundation to explore possibilities for the integration of mathematics and reading.

Oklahoma State University
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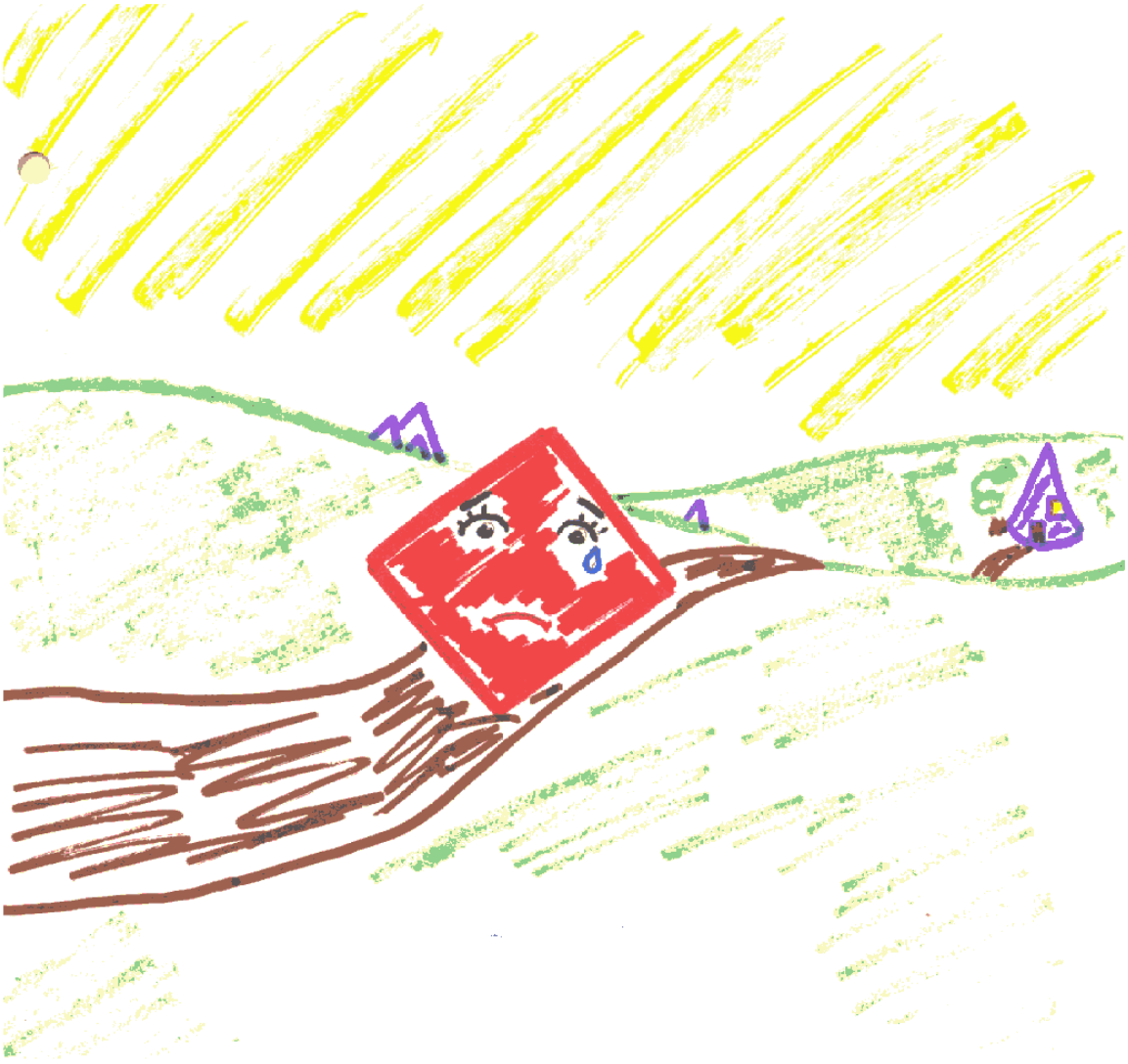


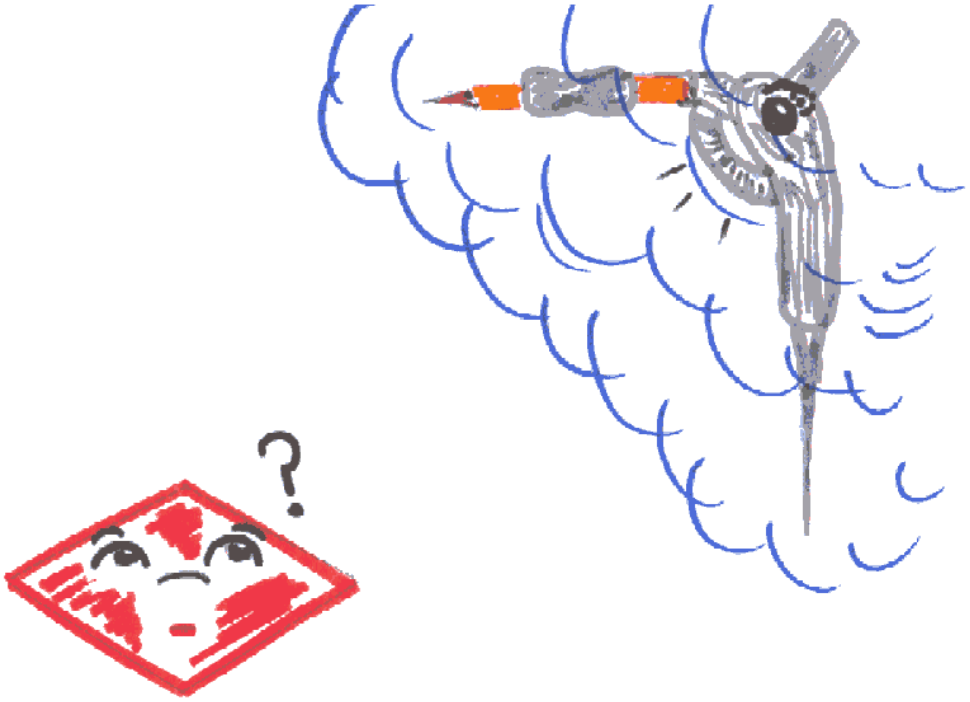
Rogie was sad Sometimes big tears rolled down her little, flat face…….

Why was Rogie so sad? Everyone in Coneville had a family. Everyone except Rogie.

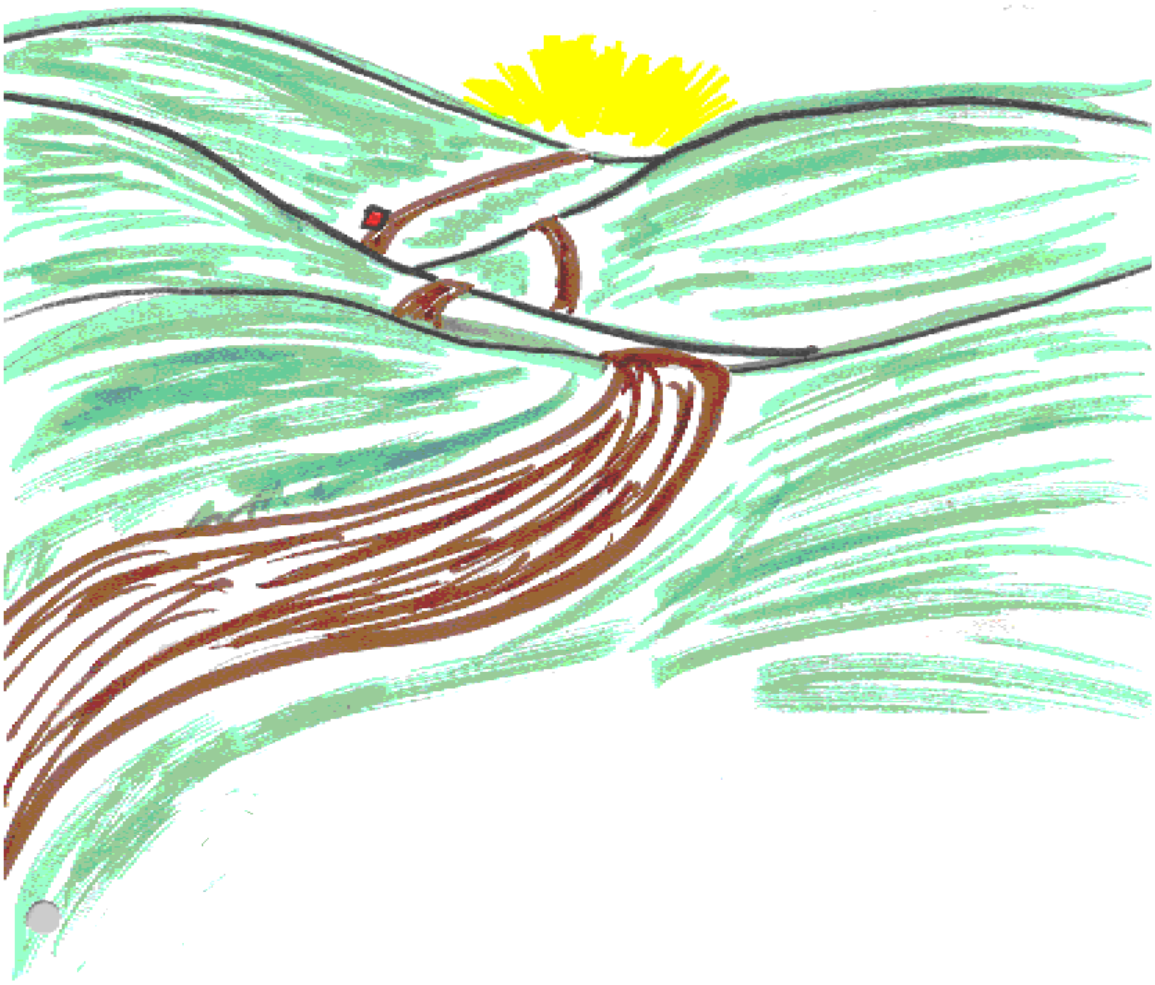
Oh – they were all nice to her and treated her kindly, but Rogie noticed that she was different. Her friends were all curvy and smooth, but Rogie was **pointy**.

Sometimes, when Rogie tried to hug her good friend Oona Oval, Oona said, "Ouch!" (very quietly so as not to hurt Rogie's feelings).

When she went for walks with Ceci Circle,
Ceci rolled along smoothly. Rogie went
THUMP -- THUMP -- THUMP -- THUMP.
(She had flat sides.)



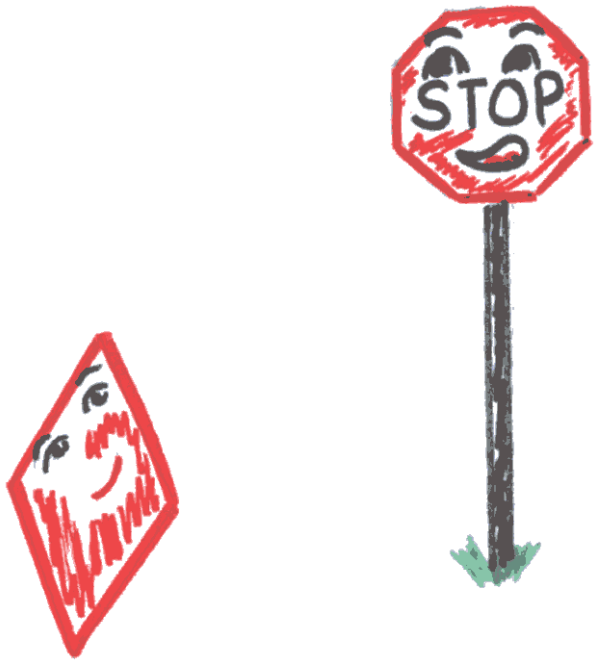
"WHO AM I??" Rogie cried out one day.
"If you go to the Land of Polygons you may find out,"
said a voice. "Who are you?" asked Rogie.
"I am the GREAT GEOMETRY WIZARD," said the voice.



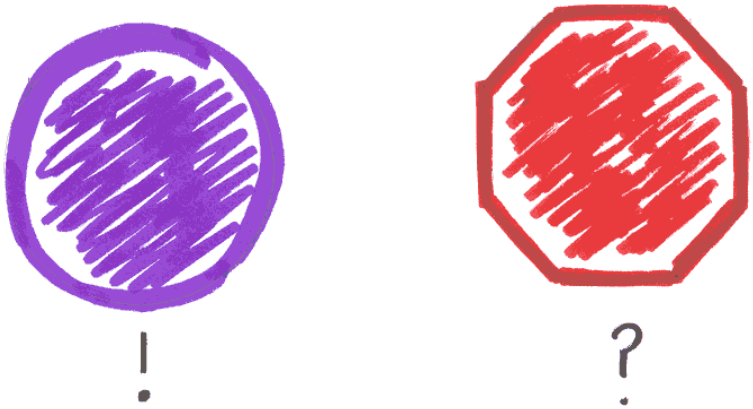
So, little Rogie traveled up hill and down hill,

until she reached the faraway……..

Land of the Polygons.



The first POLYGON that Rogie met was sitting on top of a t a l l pole. He had the word STOP printed on his face. "Welcome to the Land of the Polygons!" he said.



"What's a polygon?" asked Rogie curiously. "A polygon is a closed plane figure made of 3 or more straight sides," he replied. "Some of my best friends are polygons!"

"You look a little like my best frient, Ceci," said Rogie, "except you have flat places all over you."

"I'm Ollie Octagon," said the tall polygon. "That means I have 8 sides. I'm a *regular polygon* – all my sides are the same length and all my angles have the same number of degrees. --- You know, you're a polygon, too."

"I am?!" asked Rogie excitedly.

"Oh, yes. You can find some of your relatives down the street."

"Oh, thank you!" said Rogie, and she thumped away.

Around a bend in the road, Rogie came upon a curious little figure. "You don't look like Ollie Octagon," she remarked.

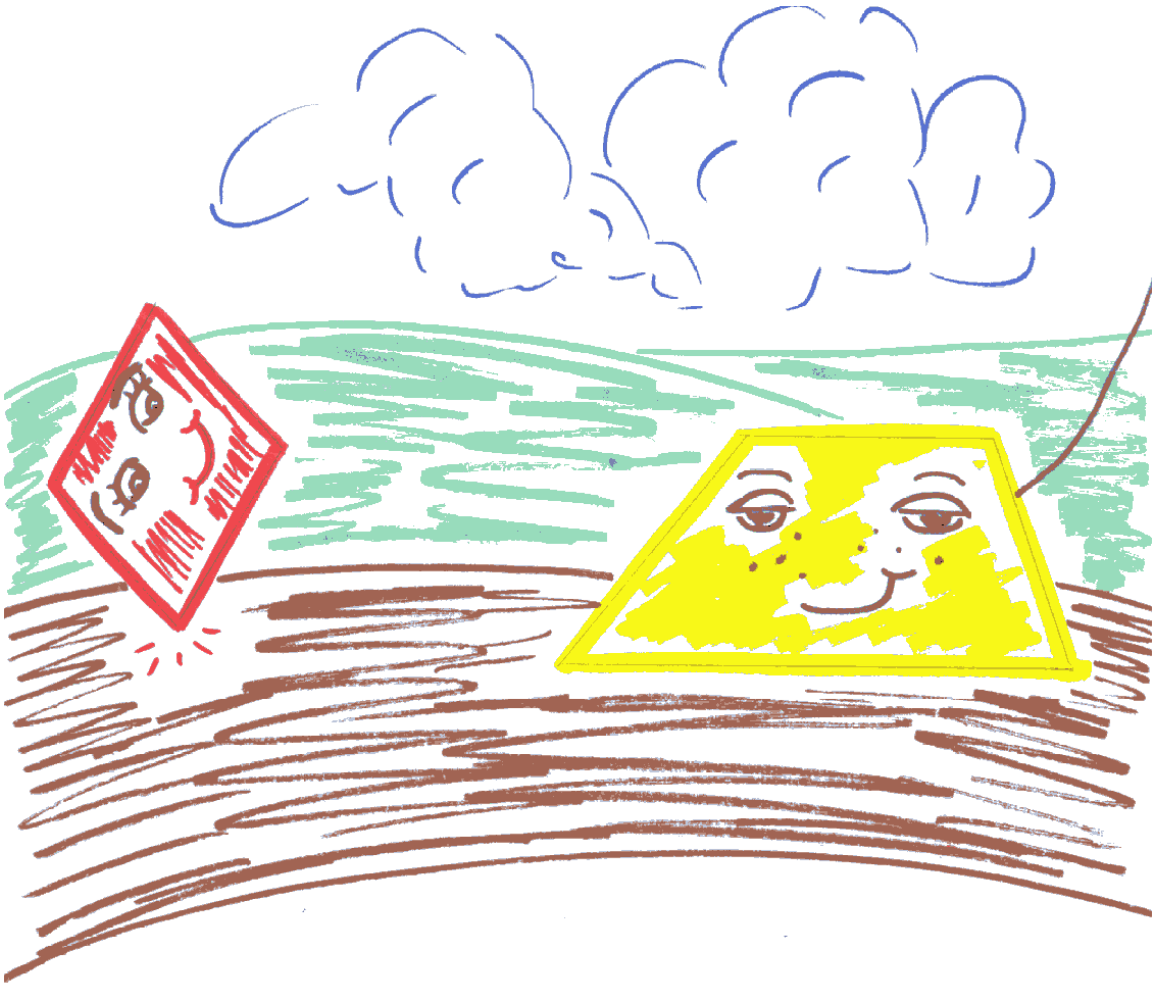
"I'm not an octagon," said the little figure, "but I *am* a polygon. I have 3 sides and 3 angles. My name is …….

Trixie Triangle"

"Are you my sister?" Rogie wondered.

"No, my sister's name is Amy Acute. She is also a triangle. All of her angles are *less* that 90 degrees each. My brother, Otis Obtuse has 1 angle that is *more* than 90 degrees. Then my smart brother Reggie Right Triangle has 1 angle that is 90 degrees exactly. We live in that beautiful pyramid over there. You might mind your own relatives down the road."

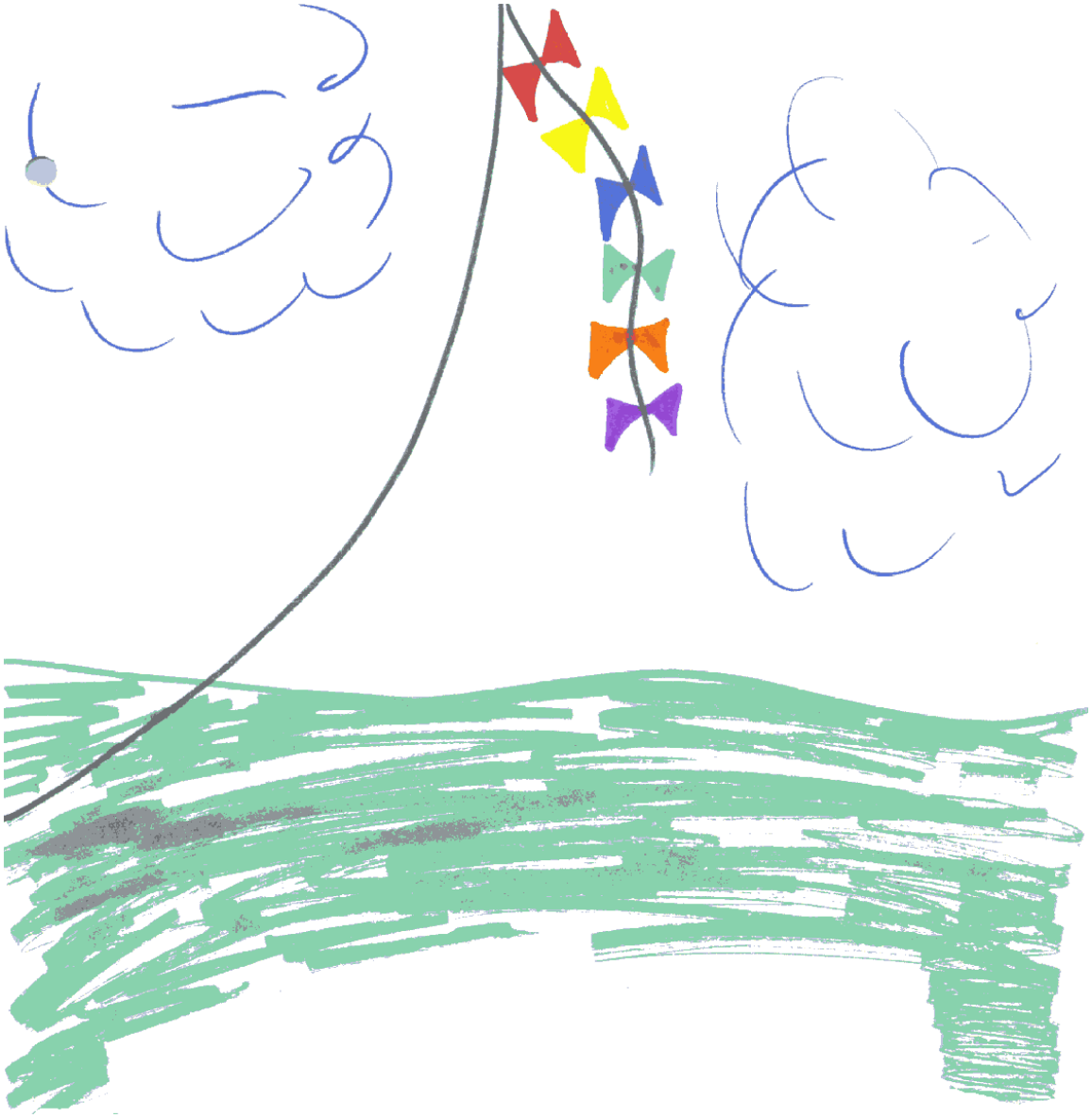
The next polygon Rogie saw was not shaped like
Ollie Octagon or Trixie Triangle, but he was certainly funnily shaped.
"Hi," said Rogie, "are you my brother?"



"No," grinned the lopsided figure, "but I *am* your COUSIN. I'm a *quadrilateral*. A quadrilateral is a figure with 4 sides. Two of my sides are parallel, but they are not the same langth. My other 2 sides are not equal in length either, nor are they parallel.

"I'm Tommy –

Trapezoid!"



"So -- I'm from the quadrilateral family?' asked Rogie.

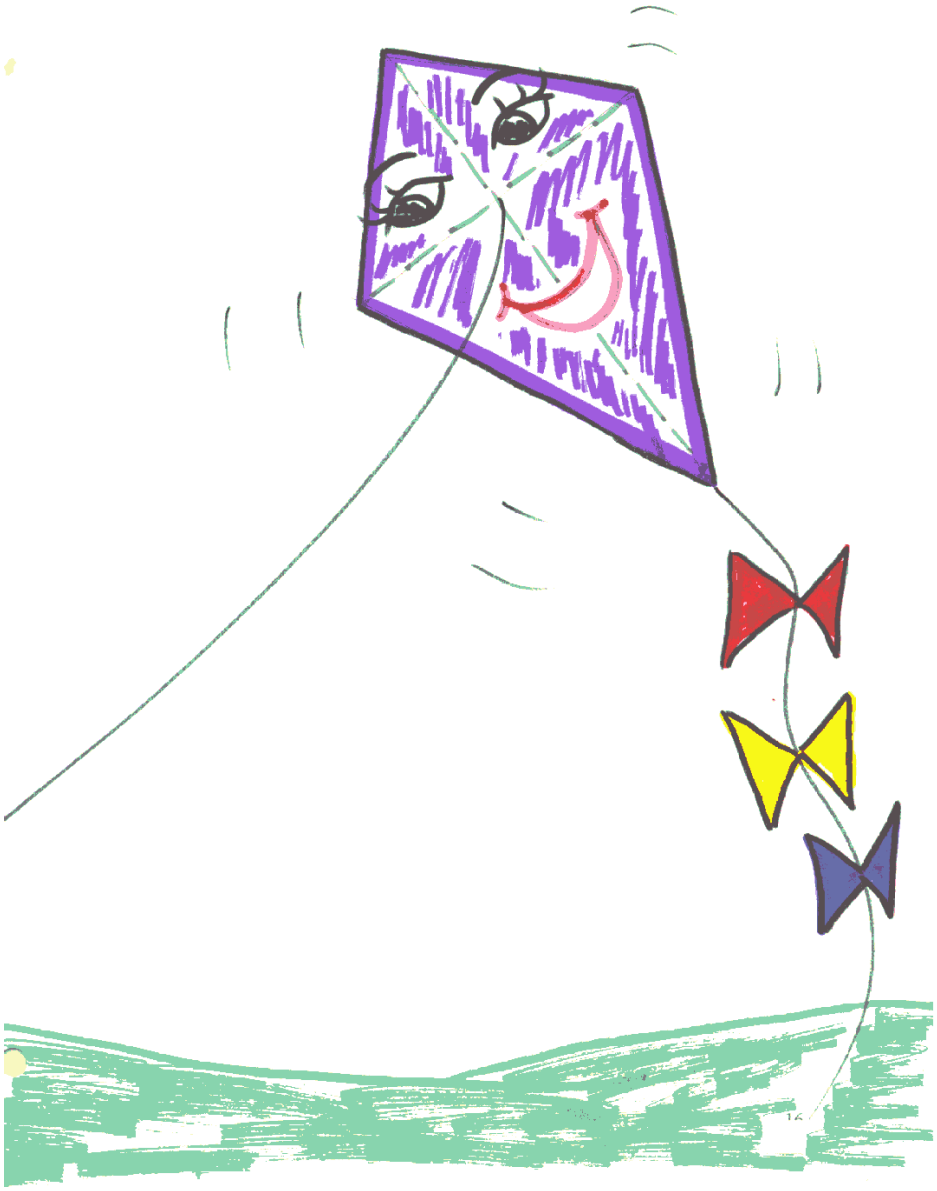
"You sure are." replied Tommy, counting her 4 sides.

"Well, Tommy, what is that string you're holding?"

"This is attached to our other cousin, Katie Kite. She's checking out the weather."

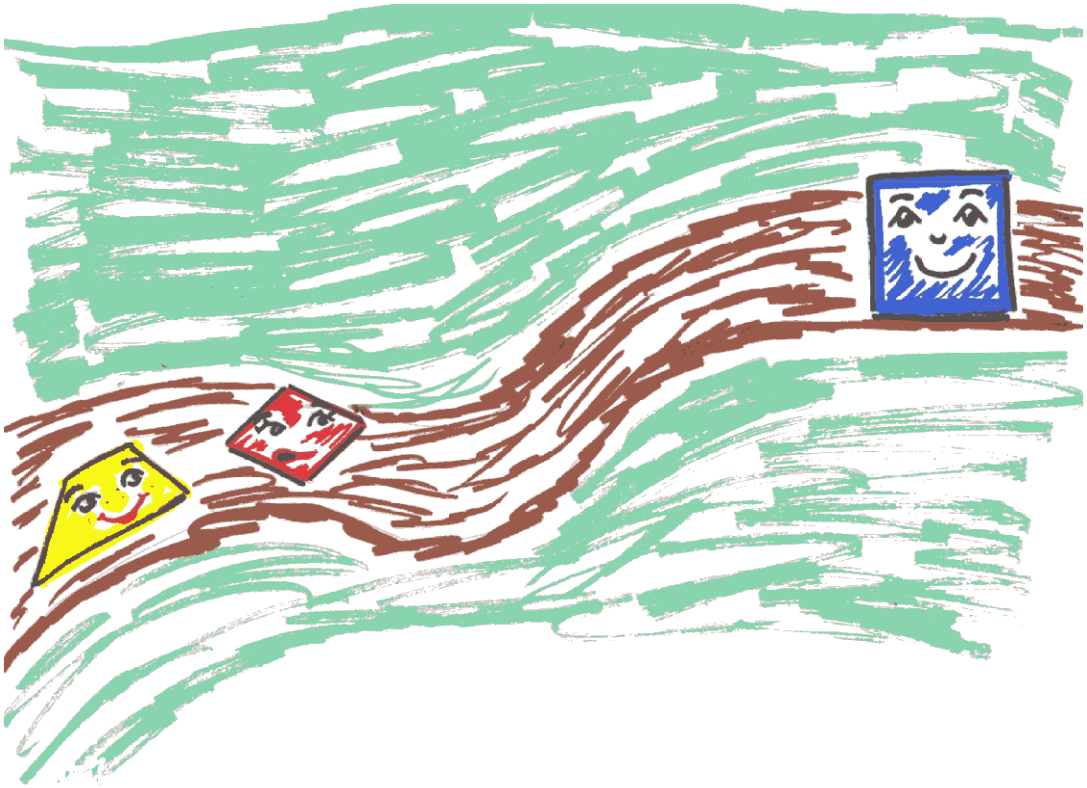
Rogie looked up and sure enough, another quadrilateral was floating over their heads …….

"Hi," called Katie. "A kite has 2 pairs of adjacent sides that are equal. Adjacent means that they touch each other. I also have one diagonal that cuts the other diagonal in half."



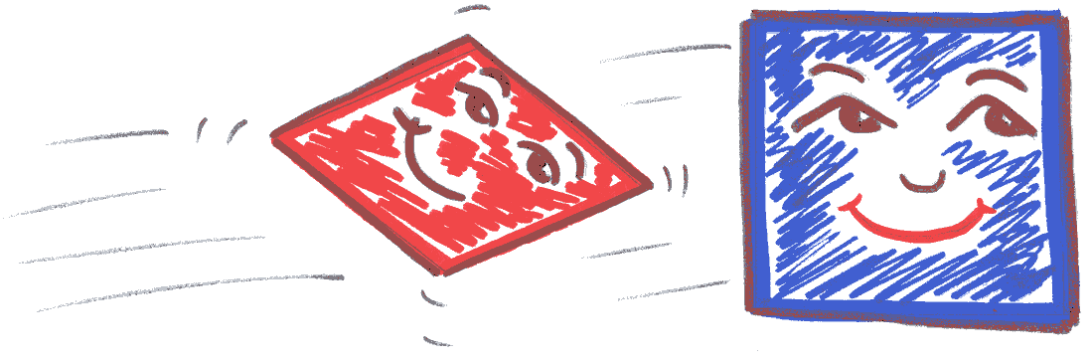
"You look like you are having fun, Katie, but I sure would like to know who I am," whimpered Rogie. (She was tired.)

"Well, I can see down the road, and here comes one of your brothers now," shouted Katie.



"Hi, my name's Sammy," said the neat-looking quadrilateral, coming near. "Can you guess who I am? I have 4 sides, of course, but my sides are all equal in length. I also have 4 interior angles that are all right (or 90 degree) angles."

"Oh, that's a hard one. Can you help me, Tommy?" whispered Rogie.



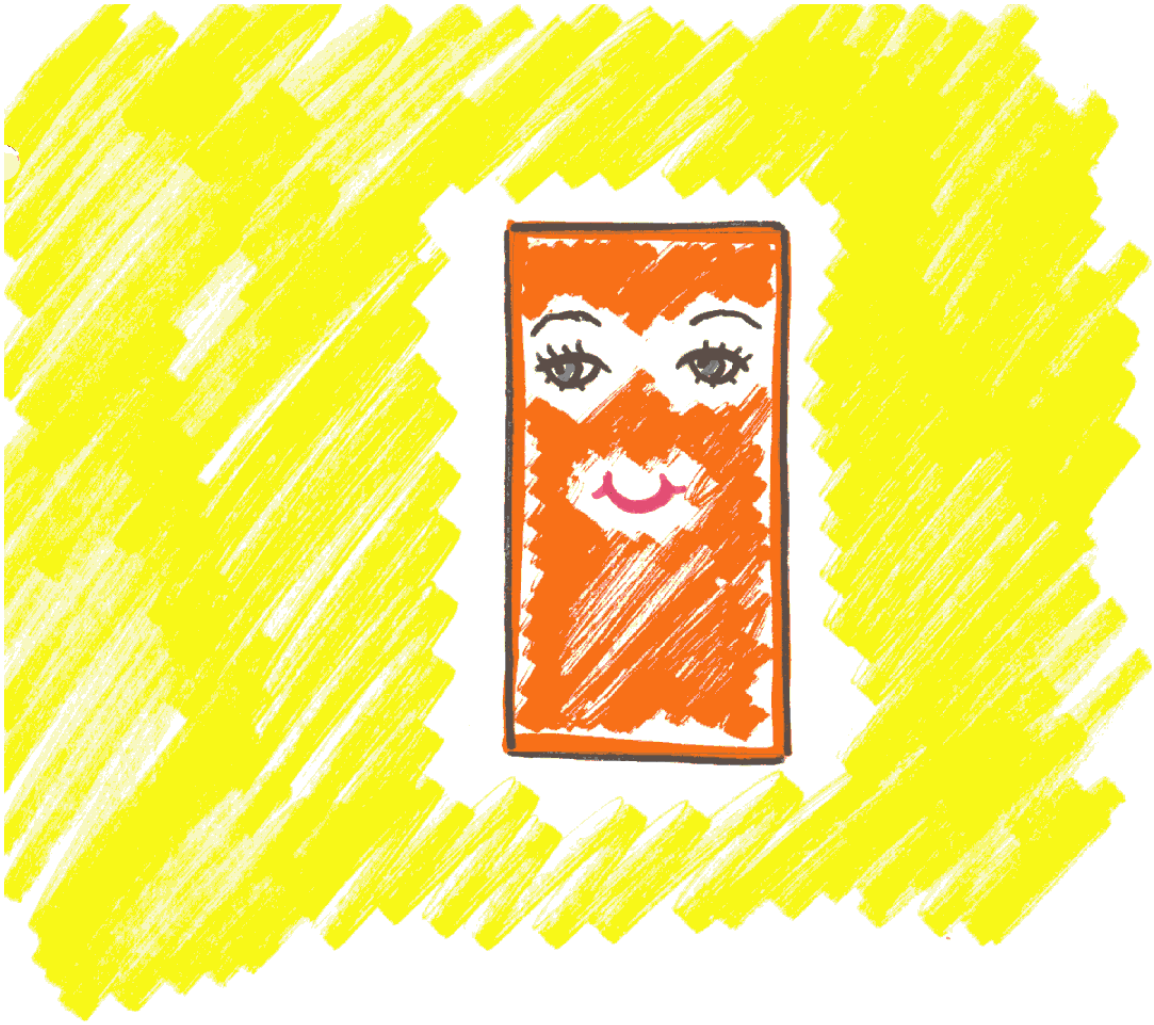
"Sure, Sammy's a *square*," answered Tommy Trapezoid.

"That's right! And now – I'll take you to meet our sister," laughed Sammy Square. He and Rogie went hurriedly down the road.

Sammy and Rogie came to a brightly colored building, and Sammy stopped by the door. "Well, here we are!"

"But where is our sister?" Rogie wanted to know.

"I'm right here!" giggled a cute little voice. …….



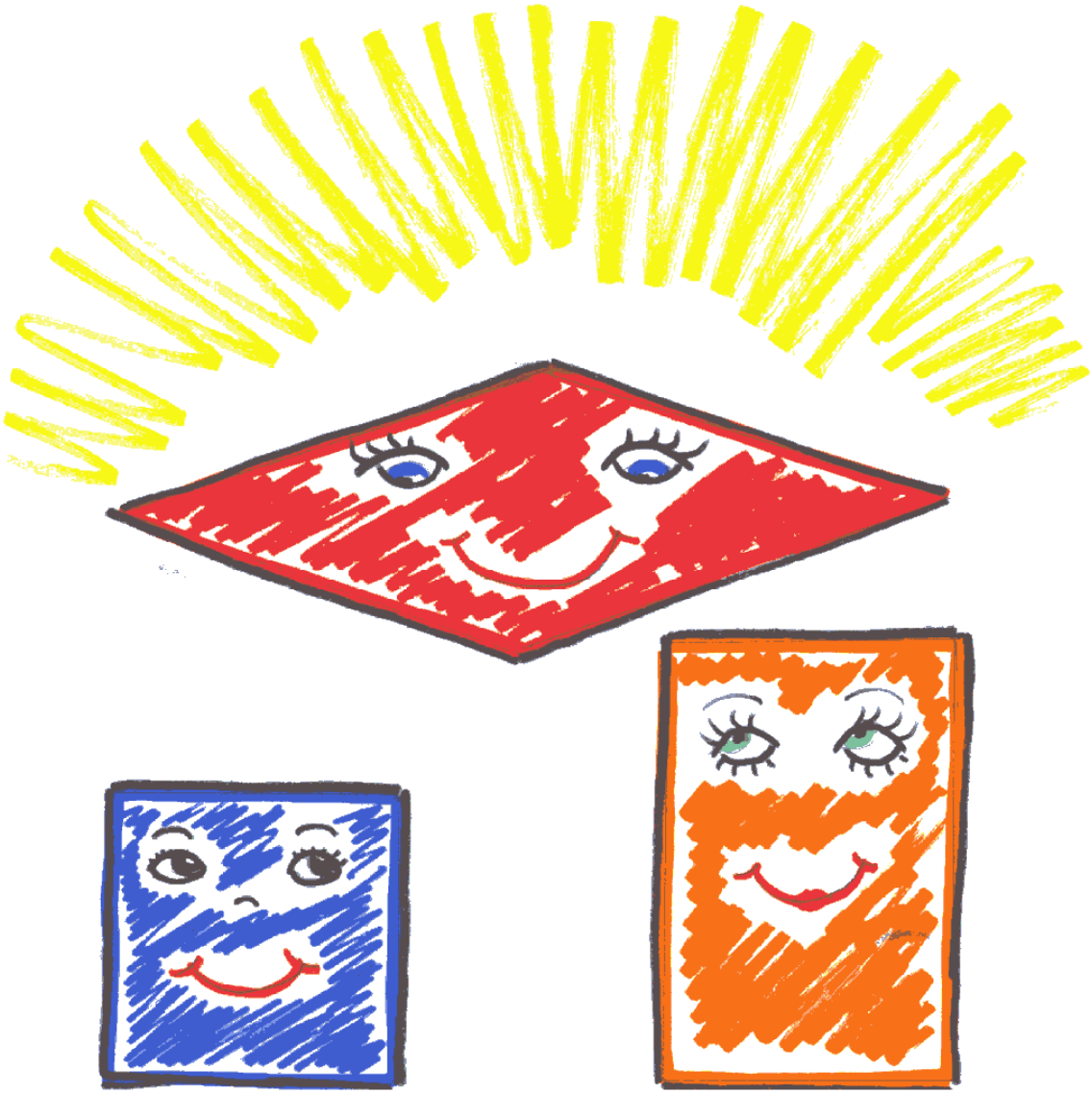
Rita's working as a door today," laughed Sammy. "See, she's a *rectangle.* A rectangle is also a quadrilateral. Rita has opposite sides that are the same length, and all of her sides meet at right angles (90 degrees – remember?)."

"Yes, Rogie. I'm sooooo glad to see you! We've been waiting for you to come to complete our family," said Rita.

"Oh! Now I know where I belong and some of the members of my family, but I still don't know what I am," protested Rogie sadly, as one tear tried to ooze down her little flat face.

"Well, let's look at you," begin Sammy kindly. "You have 4 sides, which means you are a quadrilateral, like Tommy Trapezoid, Katie Kite, Rita Rectangle, and me, Sammy Square. Your sides are all equal in length, like mine, but you are not a square, because your sides do not meet at right angles. But -- you and Rita and I do have 2 sets of parallel sides."

"Rogie ---- you are a ……..



"RHOMBUS!"

shouted Rita and Sammy together.

"Yes, and you and Sammy and I are *parallelograms*," added Rita. "Because of our 2 sets of parallel sides."

"HURRAY!!!" shouted little Rogie *Rhombus*. "I finally found my name and my home. Thank all of you, and thank you, magical WIZARD OF GEOMETRY, for helping me find my relations!"

the end.