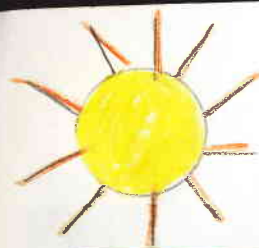


Transformational Treasure



By: Adam Lienhop
Charlie Boaz

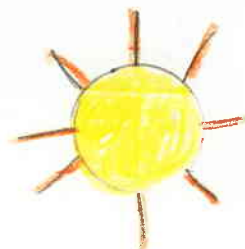
It was a sunny, warm, perfect May day in Geomtree, Florida, but Dill LaShaun, Reece Phlecksean, Trey Engle, and Cody Nates were stuck in their 3rd grade math class.



"It's so nice outside today," said Dill, "Why do we have to stay in this boring class all day?"



"Yeah, when are we even gonna need this stuff anyway?" moaned Reece.

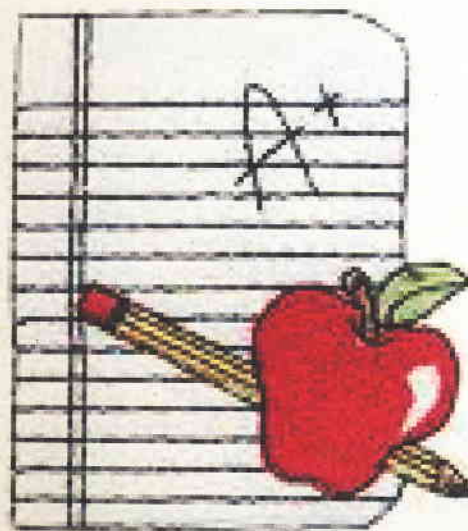


"I wish something exciting would happen to us!" added Cody.



"How awesome would it be if we could go on an adventure!" exclaimed Trey.

It wasn't that the boys were bad at math; in fact it was quite the opposite.



They were all very good at particular tasks. Dill LaShaun never missed a problem using dilations, Reece Phlecksean was an expert when it came to reflections, Cody Nates was the best and fastest with coordinates, and Trey Engle knew everything there was about triangles.

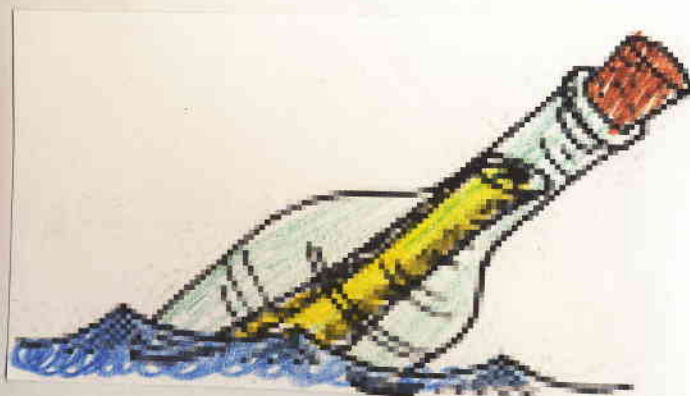
On that same beautiful afternoon, as the friends climbed off the bus, Dill noticed a bottle bobbing by the dock next to their houses.



"What's that?" he wondered.

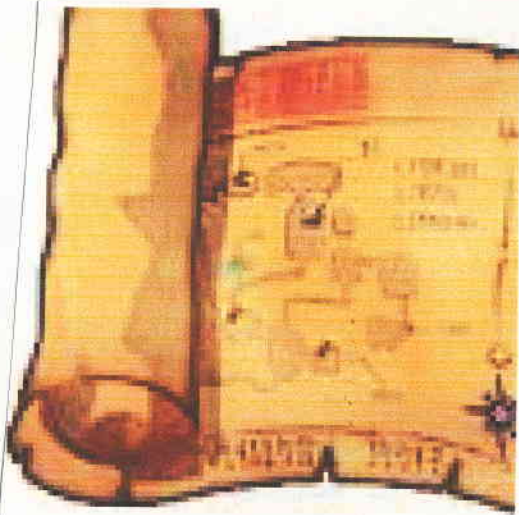


The boys made their way, weaving through the noisy seagulls, on the dock and fished out the bottle.

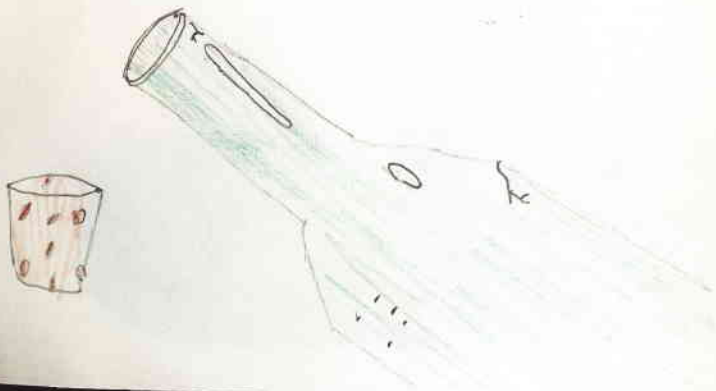


"There's some paper inside" noticed Trey.
"Maybe it's money or tickets to the circus" wished Cody.

But when Dill unrolled the crinkly, dry, yellow paper, they all gasped at once "It's a treasure map!"



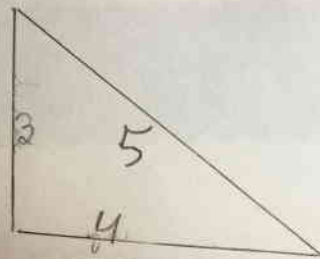
"Look there's a monster, islands, and an 'X' marks the spot. That's where the treasure is" said Reece.



"Look there, there's writing" Trey pointed out.



"It says
"Adventurers beware, danger comes from the map on which you stare. Though great be the treasure, hard be the tasks. North 30 by West 76 is where you will begin this challenging fix. From the median to the base is the only path through the obstacles you face. Only this key will open the case" read Dill out loud.



"What is that supposed to mean?" asked Reece.

"That's how we find the treasure, and 30 North by 76 West, those are coordinates. I could find that with my eyes closed" said Cody.

"You're right," said Dill, "but this treasure is in a sunken pirate ship. Look at the map."



"How will we ever get it?" cried Reece.

"We can use my dad's submarine." said Trey.

So the boys climbed into the big, blue submarine with the treasure map and some snacks.

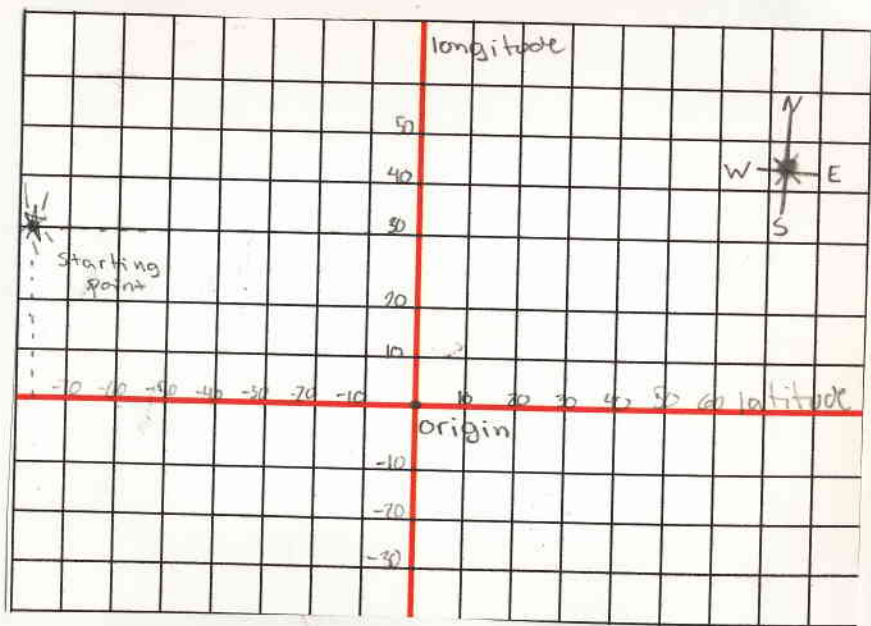


"Where do we start?"
asked Dill.

"The map says 30 North by 76 West. That's like in math class when we use coordinates" said Cody.

"Look

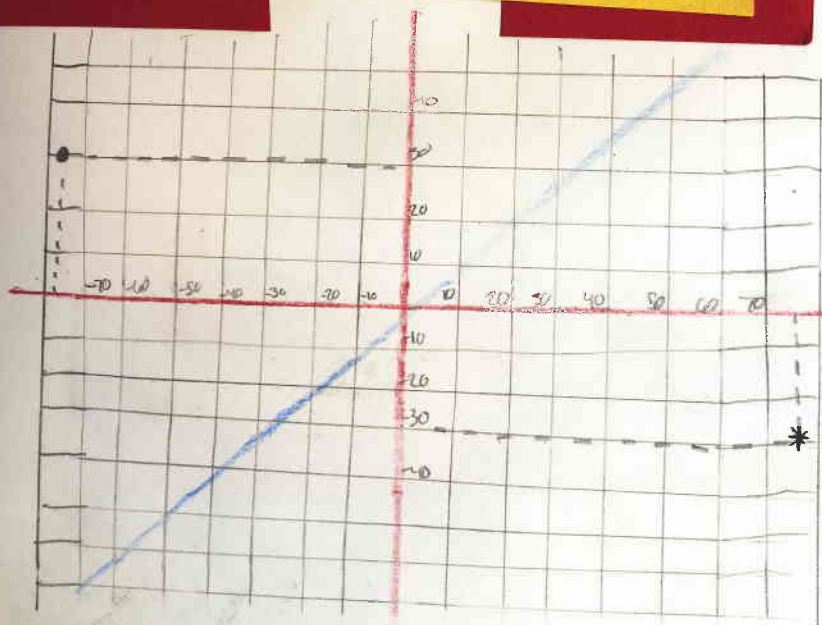
at this grid. The earth is divided like a coordinate grid by longitude and latitude. We start at the middle, the origin, and move left, for west, 78 and up, for north, 30. That is where we start" continued Cody Nates.



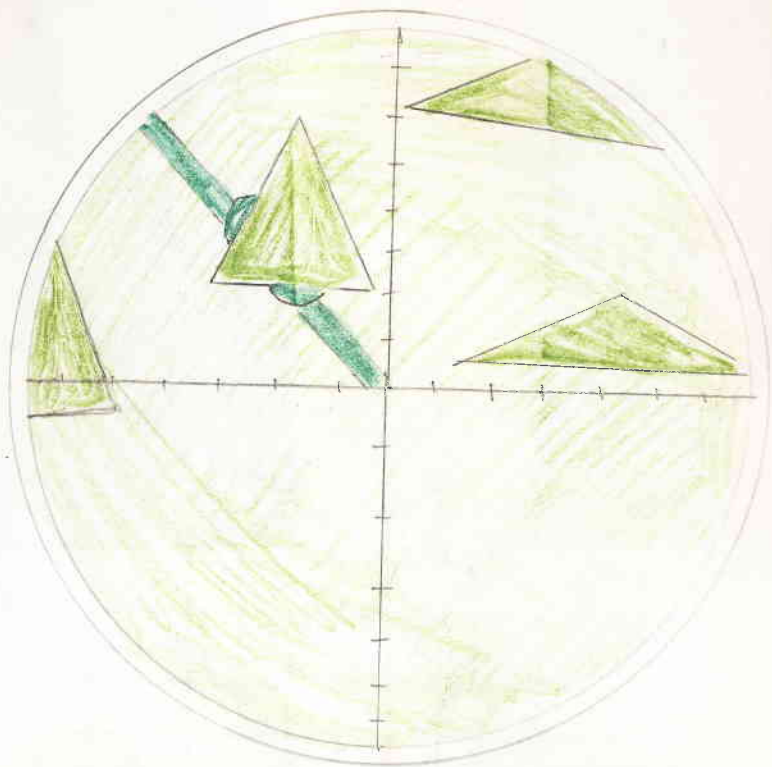
"So all I have to do is set the autopilot to 30N by 78W and we'll be there in no time" Dill said happily.

"Not exactly," moaned Trey "the autopilot is broken and goes the opposite of where you tell it to. This is going to be harder than I thought."

"Not really," said Reece, "that sounds like a reflection. If the coordinates are 30N, 78W all you have to do is make a mirror image over this line. That means all we need to do is put in 78 East and 30 South instead."

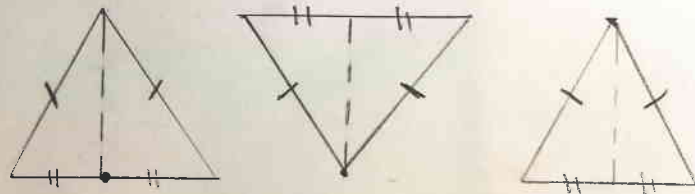


The boys ate their snack of creamy peanut butter and jelly sandwiches as the submarine drove to the starting point, until Reece yelled "Stop something is wrong! The radar is picking up all of these islands. We will never be able to fit through them all!"



"Wait, the map said "through the median to the base is the only way through the obstacles you face" remembered Dill.

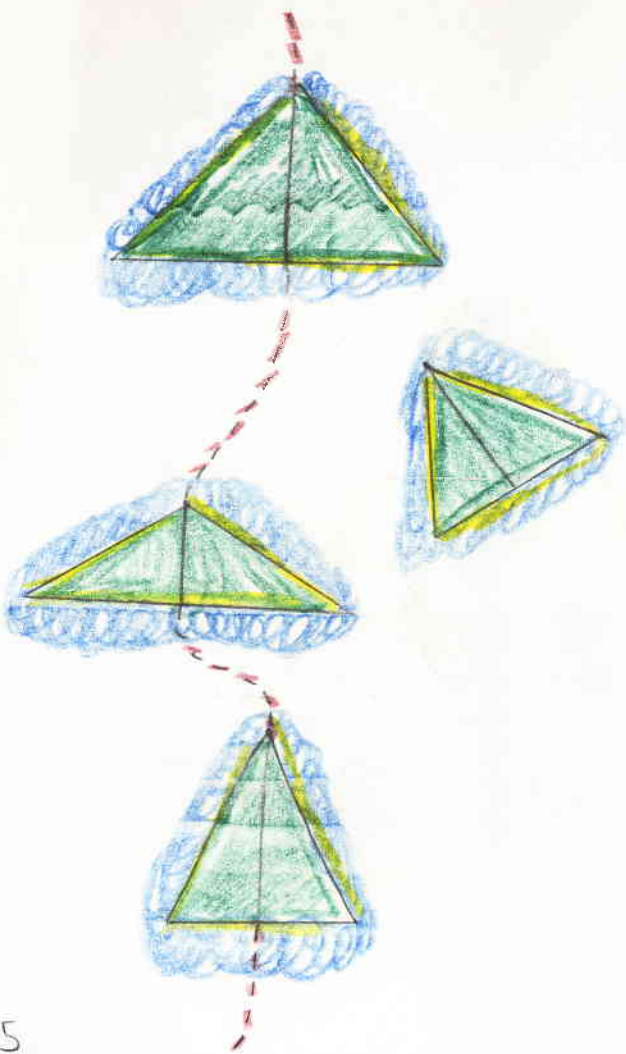
"I know what that means" exclaimed Trey.



"The islands are shaped like triangles, and the only ways through them are canals that are medians to the base. The median is a line that extends from one point of the triangle to the opposite leg's midpoint, the point that divides the side into two congruent parts. These are all isosceles islands, so the entrance will be in the middle of the side that has a different length than the others. That is the base."



So Dill guided the submarine through the medians of all of the isosceles islands through the medians to their bases.

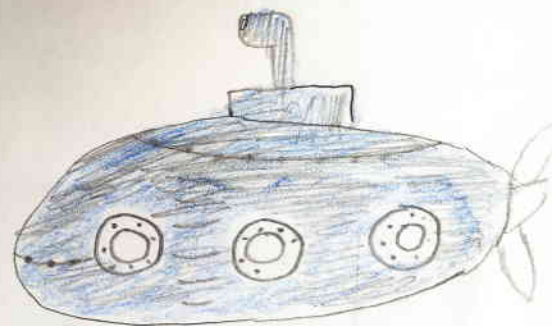


"Look," cried Reece, "There's the sunken pirate ship."

"We are going to be rich!" exclaimed Trey.

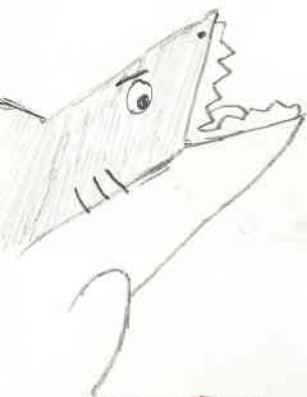
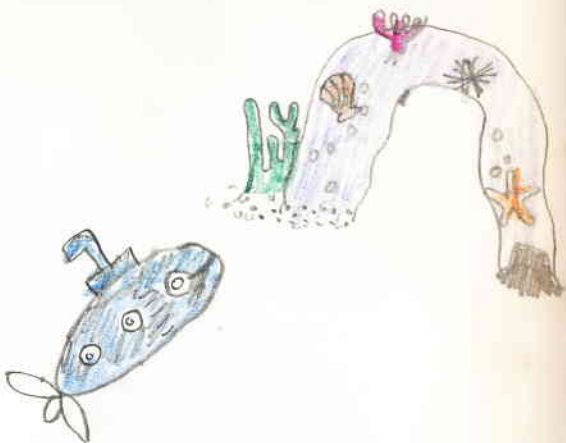
"And there's the treasure" added Cody.

But then a huge shark sprang from behind the boat and attacked the submarine.



"We'll never get away, the shark is too fast" said Reece panicking.

But then Dill saw a small arch that the submarine could fit through but hopefully not the shark. "Wait, there might be a way" he said.



So he drove the submarine as fast as he could, but as he got closer he didn't know if even the submarine could fit, and then...

CLUNK!!

"Yippy!"
cheered the boys."
"The shark got stuck."



"Now the treasure is all ours boys" said Dill.

The boys put on their deep sea scuba suits and swam to the Treasure.

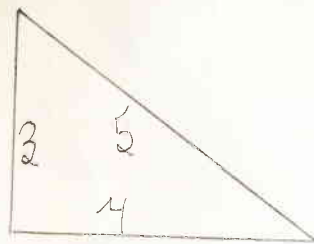


"It was all for nothing," said Reece, "It's locked and there are way too many keys for us to try them all!"

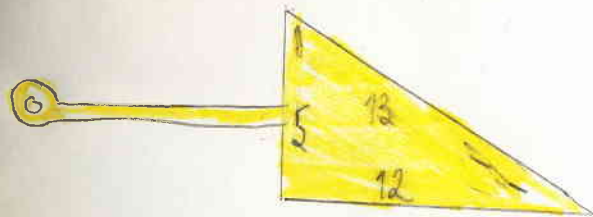


"What about the map, what does it say?" asked Cody.

"It says 'only this key will open the case' and there is a picture of a triangle with the side measures of 3, 4, and 5."



"All of these keys have numbers on the sides, but none of them are 3, 4, and 5. They are all a lot bigger" said Reece.





"It's a trick, a dilation. The sides of those keys are bigger, but the right key will have the same proportions. Look for a key that says 6, 8, 10 or 9, 12, and 15 or something that is a dilation of 3, 4, and 5.

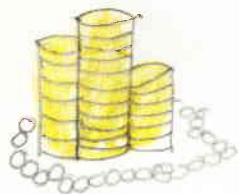
They all began shuffling through the keys looking for a dilation of the 3, 4, 5 triangle.

"I found it!"
cried Trey, "12, 16, 20"



"Great! That's a dilation, put it in, hurry!" Dill said excitedly

The key fit perfectly and turned with a clang. The boys opened the treasure frantically, eager to look inside and see what all of their work was for. The lid was heavy, and when they lifted it out of the escaping bubbles, they could see a huge, shining pile of gold coins, necklaces, earrings, jewels, and goblets.



"We did it" they cried "we worked together, and now we have the treasure"

Giving each other high-fives and congratulating one another, they made their way back to the submarine with the treasure.



On their way back home, they realized that with out math, and the knowledge of dilations, reflections, medians, and coordinates, they would have never found the treasure,

"Yeah, it's a good thing we paid attention in class" said Trey.

"Wow, I never realized that we would ever use math" said Reece.

Later that day when the boys arrived home, they showed everybody the treasure and became famous and told everyone how through teamwork and knowledge of math, they were able to overcome all the obstacles and find the treasure.

To help you remember how important math is, Bill LaSahun, Reece Philechsean, Trey Engle, and Cody Nates, wanted to give you your very own piece of the Transformational Treasure.

