

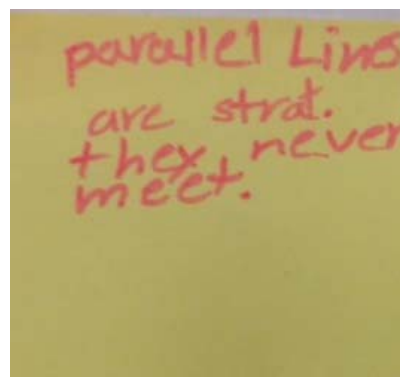
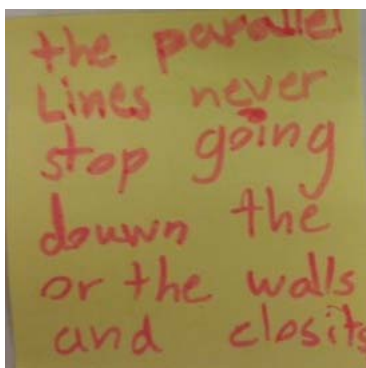
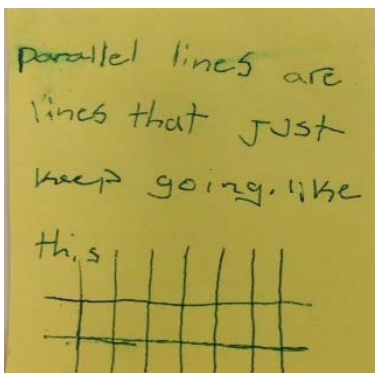
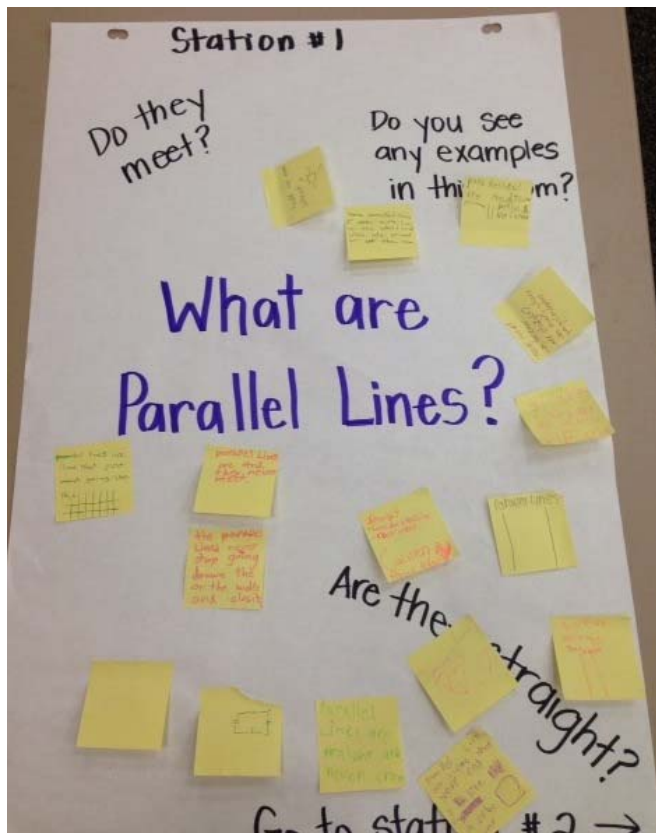
Random Acts of Math
Forest Heights Library, Kitchener
Leah Payerl

Introduction:


I explained to parents and children that in math we have many BIG ideas, but that they (kids) have even bigger minds. I shared that I was at the library to share with them a VERY BIG idea about parallel lines. After this brief introduction, and students began moving through the stations, I had two parents come talk to me to ask more about “Random Acts of Math”, to share their excitement that their child was participating, and they were participating with them, and asked for further at home resources. I was able to share with them the ‘do the math’ course website.

First Station:

We started by brainstorming everything we already knew about parallel lines (examples: two straight lines, they never meet) and examples in the library (shelves, bricks, ceiling tiles, doorframes) and examples of polygons that have parallel lines (squares, octagons). Students were invited to write and/or draw everything that they knew about parallel lines onto sticky notes and add them to our anchor chart. Prompting questions included: Do [parallel lines] meet? Do you see examples in the room? Are they straight? Students had many ideas about parallel lines and were eager to share them in discussion and in writing.



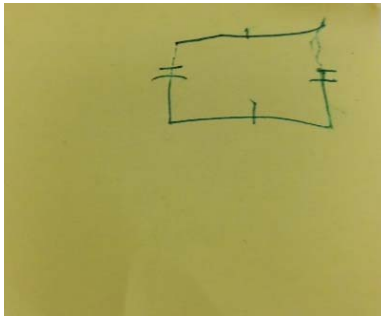
Parallel Lines
are Lines that
Never end
I look like ~~the~~
a cube




Parallel are
all ways
straight



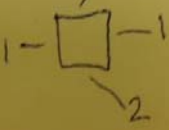
Parallel
Lines are
straight and
never cross



parallel lines
are straight
parallel is
not curved



Parallel lines never
intersect



- never meet
- on forever
- are straight?
- are everywhere you go (examples)

straight
+ and they
go in the
same
direction

Second Station:

This was the station where participants were introduced to the “Molly and her Tent” riddle. There were a few inflatable globes set out for them to use while considering the riddle. After some time exploring with their parents, students began to make hypotheses of how Molly got back to her tent, some wondered if she ran back to her tent northeast (right angle triangle), or that maybe she ran south, west, north and east. They were prompted to consider *where* on the globe Molly could run south, west and north and end up at the same point. One student excitedly discovered that it Molly must be in the north pole!

Station #2
Molly and her Tent
Riddle:
Molly steps out of her tent.
She walks south 1 km.
She walks west 1 km.
She sees a bear and
gets scared.
She runs north again,
arriving back at her tent.
How is this possible?
What colour is the bear?
Come see me for a clue!

I read the Parallel Lines story to students, as we went through, students continued to reference what they already knew about parallel lines (straight, never meet). Using the globe, students traced their fingers along the longitude lines – one student remarked that he had heard of longitude and latitude in geography – we were able to begin making the connection that parallel lines, when on a two-dimensional surface do not meet, but on a sphere (students recognize the globe as a sphere), they do (in the poles). One student suggested that the bear was a polar bear, so it was white.

Third Station:

Students explored the ideal of a straight (quickest) path on a sphere. They used string to stretch from Tokyo, Japan to Kitchener, Ontario, Canada and after hypothesizing that the quickest route would be on the line of latitude, they discovered that the quickest route actually stretched much further north of the line of latitude, then back to the destination. Students were surprised by this! One parent asked me about why lines of longitude were considered parallel but the latitude lines were not (since they appeared parallel), she was directed to the Megumi Harada video for a deeper explanation.

Students were excited to make their own booklets to share what they had learned. One remarked that he was going to go home and teach his older brother. Another student said he wanted to do “this kind of math” at school. Two parents asked me for additional resources and one remarked that her daughter is often looking for new ways to challenge herself in mathematics (and that she LOVES math).

