

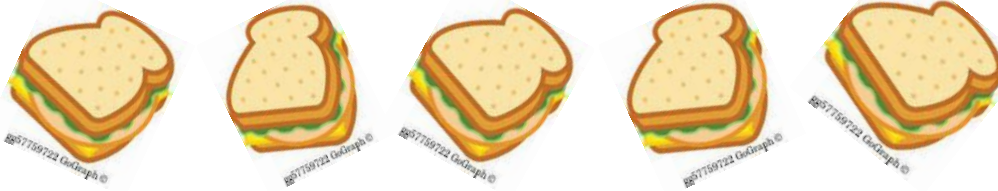
A Journey of Twists and Turns!¹

By Donna Walter

Miss Walter's class was getting ready to go on a field trip to La Tierra Trails, but even before the kids got on the bus, their trip was headed for disaster!

There are 24 students in the class and they are all getting sack lunches from the cafeteria. The sandwich choices are turkey, PB&J and cheese. But 3 students are allergic to peanut butter and 2 are vegetarians.

How many turkey sandwiches will they have to order? What are the possible sandwich combinations for the other students? And how many of each would they need?



Show your work here:

The bus driver, Sandra, usually takes a route that is 24 km 140 meters (about 15 miles). Another bus driver told her about a different way to go that he says is shorter. Instead of going out Cerrillos Road, you take a different road for 15,275 meters, then turn left and take that road for 7,650 meters, then make just one more turn and take that road for 941 meters right to the trailhead!

¹ Suggested Grades 4-6; SKILLS: converting metric units, adding metric units, probability and patterns, word problems, creative problem solving (with a component of Math Circle thinking)

Is he right? Or is Sandra's usual route shorter? (Show how you got your answer.)

When Sandra the bus driver compares the two routes on the map, she notices that the other bus driver's route goes past a hospital and through a school zone, both with slower speed limits of 25 miles per hour for about 10 km of the trip. Sandra's regular route is 45 mph the whole way.

Do you think this would make a significant difference in the length of time it would take?

About what portion of the trip would be on slower roads?

Which route do you think would be better to take? Why? List the factors for your opinion, such as gas mileage, safety, inconvenience, time saved or lost, etc.

Once they arrive at the trails, Mr. Tim tells them that the entire La Tierra Trail is 40km (about 25 miles). He shows them a roster of frequent hikers. Some of the hikers recorded their accomplishments in mixed units of kilometers and meters, while some of them recorded their hikes in meters only.

HIKER	August	September	October	November
Amarie	87,500 m	50,250 m	25,000 m	30,750 m
Anthony	38 km 225 m	52 km 300 m	27 km	18 km 650 m
Lili	75 km 175 m	48 km 250 m	30 km	12 km 750 m
Ava	67,825 m	57,100 m	35,100 m	38,225 m

Convert their recorded hikes into meters in this table and compare their distances.

	Amarie	Anthony	Lili	Ava
August				
September				
October				
November				
TOTAL				

Which hiker went the farthest? And how far did he or she hike?

What is the difference between the hiker who hiked the most and the one who hiked the least? (Show your work.)

When Mr. Tim says that the trail is 40 kilometers, Miss Walter looks like she might faint! "Don't worry," he says. "We won't hike the whole length of the trail! We will only hike a 5 kilometer loop. That's just a little more than 3 miles!"

With Miss Walter, 3 parent chaperones, Mr. Tim and the whole class, how many kilometers will they hike all together? (Show your work.)

Mr. Tim leads the way and stops the class at the most beautiful vista, where they all sit and have lunch. Miss Walter has a surprise! In addition to the sandwiches, apples and bags of baby carrots in the 24 sack lunches, she has brought along 24 granola bars and 24 juice boxes! But not everyone wants every item. Each student takes a sandwich, but some trade their apples for carrots. Some take two juices but no granola bar.

If every student eats a total of five items, how many combinations can you come up with?



Example: sandwich, apple, carrots, two juices / sandwich, apple, two carrots, juice...

The class finishes lunch and they all get back on the bus to go back to school. They are tired but happy from being out in the sunshine, seeing many beautiful birds and the great lunch.

They get back to their room at 1:45. Miss Walter puts a Math Kahoots up on the Smart Board. Knowing that they leave at 3:00 and it usually takes 10 minutes to put away the Chrome books and 5 minutes to line up, how long do they have to play Kahoots? Draw an analog clock to show your answer.