



BLUEBIRD MATH CIRCLE

Alliance of Indigenous Math Circles

Issue 3

Share your problems, solutions, models, stories, and art at:
<https://aimathcircles.org/Bluebird>

I really liked the presentation and the activity [from an earlier flier]. I included what we did with my math class the following day and they really enjoyed it.

- Rick Preston
 Tuba City Boarding School,
 Arizona

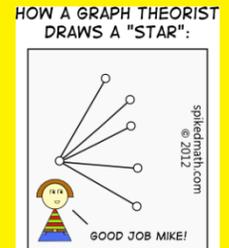
Join LIVE Bluebird Math Circle to work on these activities together with friends and family.

NEWSFLASH

Monday April 26, 5-6 PM MDT online.

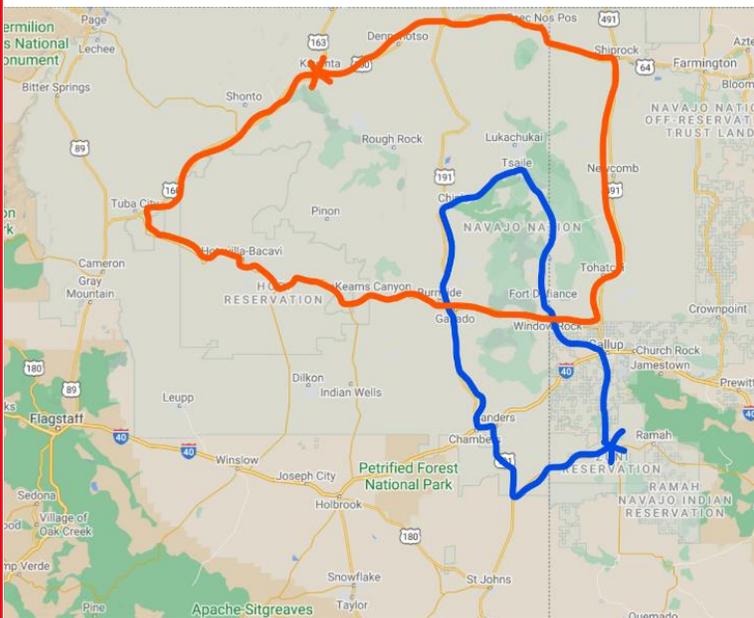
Sign up at <https://aimathcircles.org/Bluebird>

MATH MEME



Family Circle: Road Inspector

PROJECT — HELP INSPECT THE ROADS ON THE RESERVATION.



ACTIVITY 1: Each month, a road inspector drives around the big red circle shown on the map to make sure the road is safe. He lives in Kayenta, so he departs and returns from there.

Another inspector lives in Zuni. Each month she inspects the blue circle of roads shown below. Both road inspectors travel each road once, making a circuit without retracing their path.

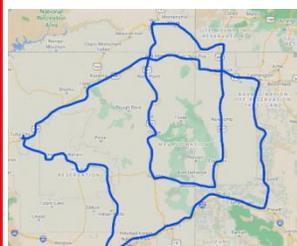
But one month, the 'blue' inspector is ill and cannot do her job. The 'red' inspector must inspect both routes. He must be efficient, so wants to cover both routes, but doesn't want to travel the same road (or part of a road) more than once.

Can you help him plan his route?

Note: If you have been to Ganado or Window Rock, you may know that the blue path overlaps the red path for a small stretch of road. For this problem, ignore that fact. It can't be helped.

In particular:

- Can he start from Kayenta, come back to Kayenta, and inspect all the roads (both the red and the blue below)? Remember that he must travel every road once, and must not travel any road more than once.
- Can he start from Window Rock, come back to Window Rock, and inspect all the roads?
- Can he start at any point on the red path or the blue path, inspect all the roads, then come back to the same spot? That is: is there any place on either road where he cannot start from and end up at?



ACTIVITY 2: Here is another path that a road inspector might have to travel.

Can you find a way for him to trace the path without going over any section of road twice?

Can he do it, starting and ending at the same place? If so, where should he start?

How is this map the same as the first map? How is it different?

