INTRODUCTION:

Have you ever used Google maps or navigation to get you to a destination? Can you name some jobs or professions that may use maps? In this lesson you will use My Maps by Google to estimate and calculate distances. After completing this lesson, you will understand how to connect division and the distance formula to a real-life application.

OBJECTIVES:

- Solve problems using a map scale
- Use a number line to solve problems
- Use division fluently
- Make connections with the distance formula
- Complete the lesson with 85% accuracy

You can do a save as and rename the activities worksheet with your name. Your instructor will give you directions on how to share the worksheets with them for feedback.

ACTIVITY 1:   Use the following link to bring up the map:

https://www.google.com/maps/d/viewer?hl=en&mid=1WF-kQv9ZNIRanfP2QCQmvtXEBY1hFSiy&ll=38.582525942266834%2C-100.06347686875&z=4

1. How far (in miles) do you think the following lines are on the map? Estimate the mileage and write your estimation in the estimate column.

Trip	Estimate	Actual
Yellow		
Purple		
Blue		
Black		
Red		
Green		

2. Which line/trip do you estimate is the longest?

3. Which line/trip do you estimate is the shortest?

4. Which line/trip do you estimate is half size of the longest?

5. How did you come up with your estimates?

6. How many miles do you estimate it is from Jacksonville, Florida to Billings, Montana? How did you determine how far it is?

7. How many miles do you estimate it is from Washington D.C. to Los Angeles? How did you determine how far it is?

You will have to copy the map to do questions 8-12. To copy, you must first click the three white dots on the map.
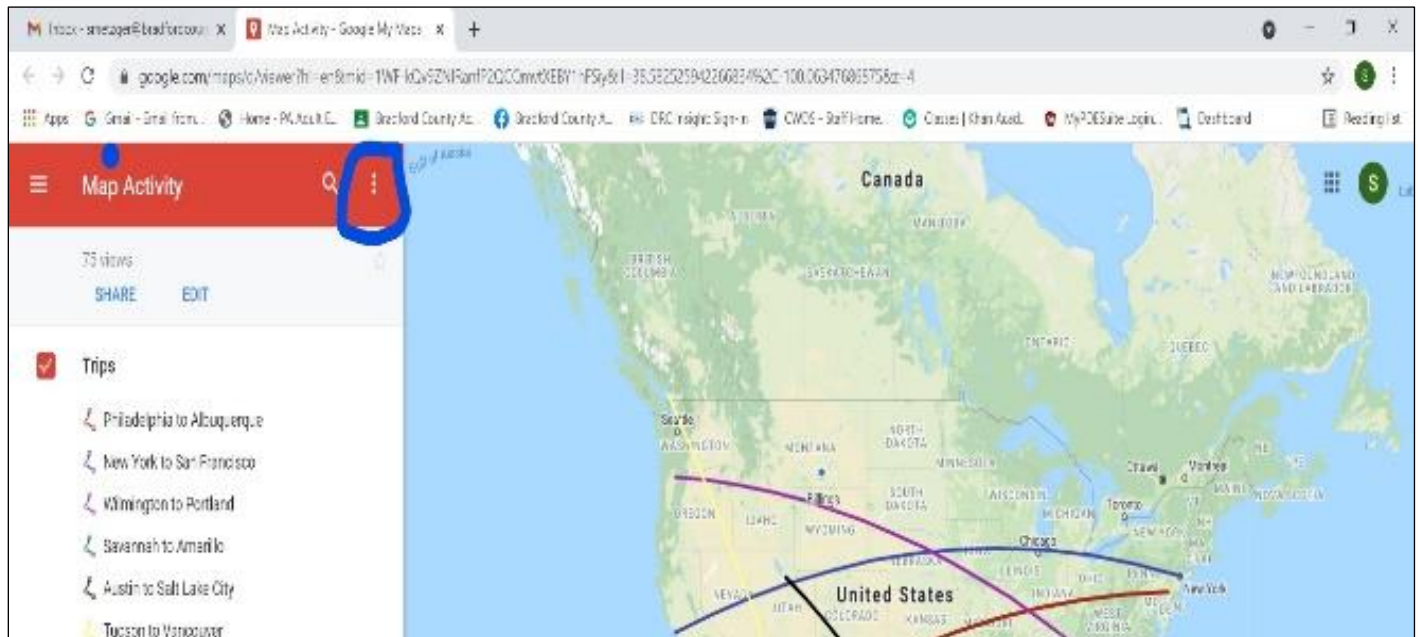
From the menu that opens, select the "Copy map" option.
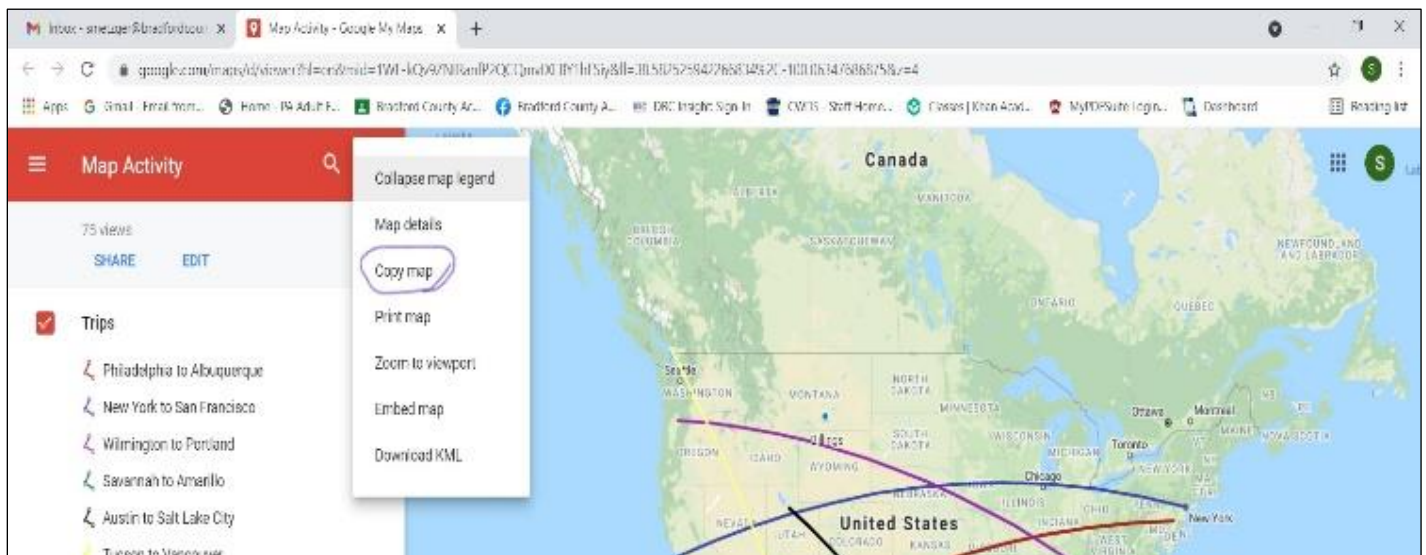
8. Use the Actual column in question #1 to write down the actual distances of the lines. To determine actual lengths, use the ruler tool on the top left of the map – click on the ruler a plus + will show up where your curser is, click and drag the line with your mouse from starting destination to ending destination.

9. Which city could be half way from Boston to San Francisco?

10. What state are you in?

11. How many miles is half way?

12. How did you determine how many miles is halfway?

ACTIVITY 2: Using the Google My Map tool, make up your own trips. https://www.google.com/maps/d/?hl=en

To create a blank map, type my maps google in the search bar, once you bring up the my maps site, click on create map.

You can use the center wheel on the mouse to zoom in and out of the map or use the -/+ on the map.

The following PowerPoint slides will help with navigating the tools in My Maps. Double click on PowerPoint to open.

Presentation for My Maps.pptx

You can use the map tool bar to draw lines from place to place, drop pins, and use the ruler tool.
The map tools are shown in the PowerPoint presentation.

Trip 1

Questions	Your Answer
Where do you start?	
Where did you end up?	
How many miles was your trip?	

Trip 2

Questions	Your Answer
Where do you start?	
Where did you end up?	
How many miles was your trip?	

Trip 3

Questions	Your Answer
Where do you start?	
Where did you end up?	
How many miles was your trip?	

You can share you map with your instructor with the share tool within My Maps. The share tool is shown the PowerPoint presentation.
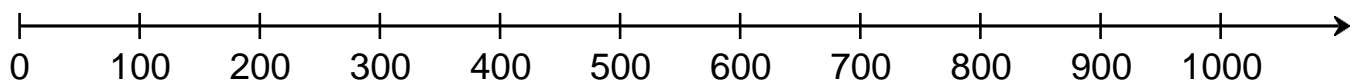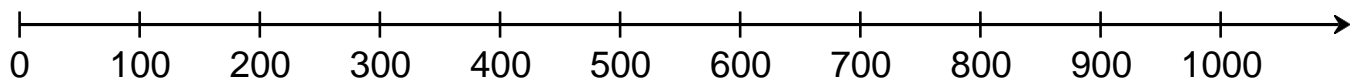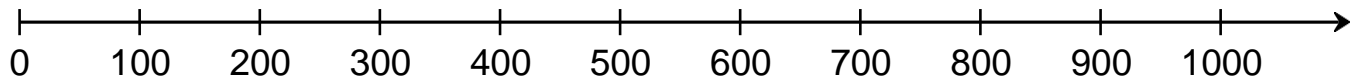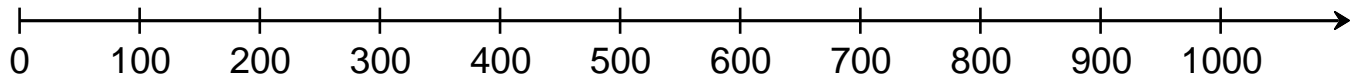
Using the number lines, determine how many days it will take you to make each trip. You will travel 300 miles a day. How did you use the number line to determine days traveled?

	Distance	Days
1. Jacksonville to Billings?	_____	_____
2. San Francisco to New York City?	_____	_____
3. Half way point between Jacksonville to Billings?	_____	_____
4. Trip 1	_____	_____
5. Trip 2	_____	_____
6. Trip 3	_____	_____

Name_____ Date _____

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├────┼────┼────┼────┼────┼────┼────┼────┼────┼────┼───▶
0   100  200  300  400  500  600  700  800  900  1000
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├────┼────┼────┼────┼────┼────┼────┼────┼────┼────┼───▶
0   100  200  300  400  500  600  700  800  900  1000
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0   100  200  300  400  500  600  700  800  900  1000
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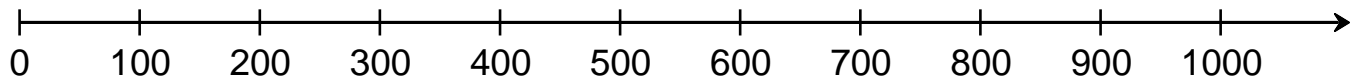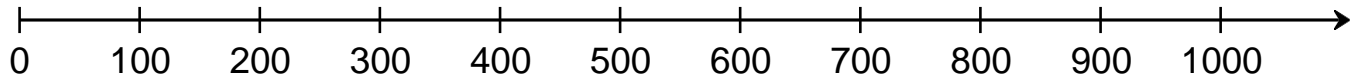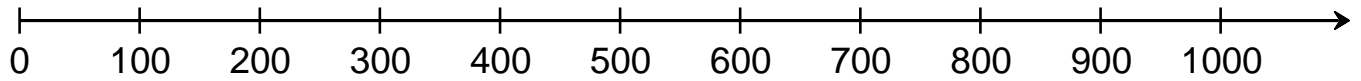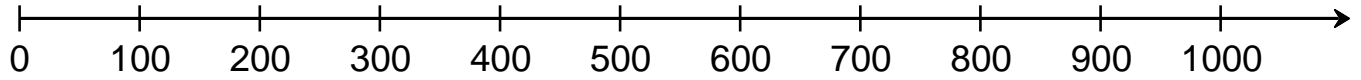
ACTIVITY 3:

Use the Distance column from question 4 on the Activity 2 worksheet. Write the distance for each trip on the following lines:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Use the formula to compute the time it would take to make the 6 trips from the Activity 2 worksheet – Question 4.

Use the following formula to complete this activity:

Distance/300 = time (days)

How many days did it take using the formula? Write your answer for each trip on the lines.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Are the days you computed from using the number line for Activity 2 – Question 4 similar to the days computed using the formula (distance/300 = days)?

REFLECTION QUESTIONS:

What did you learn in this activity?

What tools did you use in this activity?

What Math did you use in this activity?

Overall reflection on this activity?

Was this activity a useful learning tool? Was it easy to follow and navigate? What adjustments might the instructor make?

ACTIVITY 4: EXTENDED LEARNING

<u>**LET'S PLAN A TRIP**</u>

You've decided to take a trip in the United States and drive to your destination.

1. Where are you going on vacation in the United States?
2. Start from your hometown. How many miles is your trip?

You must plan your time off based on your trip. You will use the following information for you trip planning:

You will use the distance formula to determine how many hours your trip will take. You average speed limit for the trip is 65mph.

d=rt   (distance = rate x time)

3. How many hours will your trip take if you drive straight to your destination without stops?

4. Now add planned stops to your trip: (use the second column for drive back home)

Daily Food stop time (in hours)   _____   _____

Daily site seeing time (in hours)   _____   _____

Daily rest time (in hours)   _____   _____

5. How many days do you plan to stay at your final destination? _____

Now use all the information given to determine how many days your trip would take with all planned times and days for staying at your final destination.

6. Trip hours from #3 (times 2 -round trip)   _____

    Total hours from #4   _____

    Total from #3 and #4   _____

    Days at final destination   _____

7. How many days would you need to plan for to make your trip?

8. How did you determine the days you would need to make your trip?