Can We Get to Glenbrook by 3 O'Clock?

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Topic/Era: Steam Ship Tahoe/ Nevada History

Lesson Title: Can We Get to Glenbrook by 3 O'Clock?

Subject: United States History

Grade Level: 7th

Length of Lesson: 1- 50 minute class period

Background:

Prior to the Steam Ship Tahoe in 1896, steamships served as supporting vessels to the logging industry in Tahoe and first appeared in about 1864. The peak period for steamers was between the 1880's and 1900. During this time about 10 steamships operated on the lake. Between 1890 and 1895 there were seven steamers working on the lake during the summers.

Duane L. Bliss, the lumber magnate of the Tahoe Basin, realized logging was fading and he would need to diversify his business interests. He formed the Lake Tahoe Transportation Company in 1894 and commissioned the Steam Ship Tahoe from the Union Iron Works in San Francisco. The Steam Ship Tahoe was launched on June 24, 1896, this was the beginning of Tourism and Gaming in the Tahoe Basin. The S.S. Tahoe operated as a passenger ship offering lake tours and transportation to other ports of call on the lake. The Steamer Tahoe also transported freight, supplies, and U.S. mail.

Because of new technology however, the S.S. Tahoe was to decay at their moorings in Tahoe City and the historical icon was laid to rest in Glenbrook Bay. The S.S. Tahoe was pivotal in the economic success that the Tahoe Basin enjoys today.

This lesson will serve as the 4th lesson in a unit or can be used as a stand alone lesson.

Objectives:

- Students will be able to understand how many knots are in an hour.
- Students will be able to use the time formula.
- Students will be able to figure out how long it would take the S. S. Tahoe to travel around Lake Tahoe.

Standards:

- Process Standard B: Use formulas, algorithms, inquiry, and other techniques to solve mathematical problems.
- 3.7.5 Write and apply proportions to solve mathematical and practical problems involving measurement and monetary conversions.

Materials List:

Pencil

Sheet of paper

A copy of the Lake Tahoe Mileage Chart page for each student in the class

White board

White board marker

In Class Activities:

1. Have the students find a partner and work with that partner for the lesson. Ask the class the following question: How long do you think it took the S.S. Tahoe to travel around Lake Tahoe if the boat was cruising at an average speed of 10 knots? Have the students estimate the time and then share their answers with their partner. When students have finished sharing with their partner, have students share their answers with the class.

2. Ask the class if they know what a “knot” is. After discussion, tell the class that a “knot” is how the speed of aircraft and boats is measured. Both miles per hour and knots is a speed which is the number of units of distance that is covered for a certain amount of time.

3. Explain to the class that the S.S. Tahoe traveled counter-clockwise around Lake Tahoe at a maximum speed of 18 knots and might cruise at an average speed of 10 knots. Today we are going to figure our how many miles per hour (mph) a knot is and how long it would take to travel between cities around Lake Tahoe, getting around the entire lake.

4. 1 knot is equal to 1.1508 miles. Give the students this formula. On a piece of lined paper, have the class make a chart that looks like this:

Knots	MPH
1	1.1508

5. In the Knots column have the students fill in the numbers

2, 5, 10, 15, and 18. Once the left hand column is filled in,

have the students figure out the miles per hour for each knot. (Answer Key Below)

Knots	MPH
1	1.1508
2	2.302
5	5.754
10	11.508
15	17.262
18	20.714

6. Once the class has figured out the knots to mph ratio, ask the class what the maximum speed, of 18 knots, would be of the S.S. Tahoe. Then ask the class what the average cruising speed, of 10 knots, would be.

7. Now, we will use the time formula t = d/r (time = distance divided by rate) to figure out how long it would take the S.S. Tahoe to travel city to city, and eventually, around Lake Tahoe.

8. Pass out a copy of the Lake Tahoe Mileage Chart to each student in the class.

9. Review the time formula with the class and the examples on the top of the page.

10. Have the class figure out the time it takes to travel from city to city on the chart with their partner. Have them figure out rate using the average speed of 10 knots or 11.5 mph (Have the class use the figures from the knots to mph conversion chart they created in class).

11. Students will turn in their Lake Tahoe Mileage Conversion Charts at the end of class.

Exit Pass: After completing the chart, have the students go back to the original question of: How long do you think it took the S.S. Tahoe to travel around Lake Tahoe if the boat was cruising at an average speed of 10 knots? Have them compare their answers. Was their original answer more than or less than their original estimated time?

Evaluation/Assessment: Lake Tahoe Mileage Conversion Chart

Name ________________

Lake Tahoe Mileage Chart

$t = d/r$

Use the time formula to solve:

If you are traveling 20 miles at 60 mph, what is the time in hours?

$t = d/r$ $t = 20/60 = .33$ hours x 60 = 20 minutes

If you are traveling 252 miles at 20 mph, what is the time in hours?

$T = d/r$ $t = 252/20 = 12.6$ hours or 12 hours and 36 minutes (.6 x 60 = 36)

Now, if the average cruising speed of the S.S. Tahoe is 10 knots or

__________ mph, using the time formula, figure out how long it would take to travel between each city. How long would it take to travel around the entire lake?

Departing City	Arriving City	Miles Traveled	Time Traveled
Tahoe City	King's Beach	9.15	
King's Beach	Incline Village	5.30	
Incline Village	Glenbrook	15.29	
Glenbrook	Stateline	9.58	
Stateline	Emerald Bay	14.63	
Emerald Bay	Meeks Bay	5.73	
Meeks Bay	Tahoe City	12.32	
	Total Distance Around Lake:		

How long would it take the S.S. Tahoe to travel around Lake Tahoe at an average speed of 10 knots? ____________________________________

How long would it take the S.S. Tahoe to travel around Lake Tahoe at the top speed of 18 knots? ____