

Name _____ Date _____ Period _____

NOVA

LOST AT SEA: THE SEARCH FOR LONGITUDE

BEFORE VIEWING THE VIDEO, ANSWER THE FOLLOWING QUESTIONS:

- a. What is longitude? What is the reference line associated with longitude?

- b. What is latitude? What is the reference line associated with latitude?

- c. What was the historical event that happened to cause people to want to develop a way to pinpoint positions on a map?

- d. Why is longitude associated with time?

WHILE VIEWING THE VIDEO, ANSWER THE FOLLOWING QUESTIONS:

1. How long ago was longitude invented?

2. Why was it important for nations to be able to pinpoint positions in the oceans?

3. Why is John Harrison important? What did he do for a living?

4. How was the speed of the ship measured? What is a knot?

5. What is dead reckoning? What were some problems using knots to measure distance?

6. What is latitude? What is 0 degrees latitude?

7. What is longitude? What are lines of longitude called?

8. How was latitude calculated on a ship?

9. Why was it easy for pirates to capture cargo ships?

10. What happened in 1707? Why was this important to longitude?
11. What was offered in 1714? What was the prize?
12. Who were the Longitude Lunatics?
13. What was John Harrison's educational background?
14. What was his idea for finding longitude?
15. How many degrees does the earth turn for each degree of longitude?
16. What was the challenge in knowing for the people on ships?
17. What type of clocks were Harrison's early clocks? Were they accurate?
18. In clock making, what was the enemy to accuracy? How did he get around this?
19. What are the problems associated with using a clock on a ship?
20. What was the idea of Whifton and Ditton? Was it practical?
21. Was Cassini's method of using Jupiter's moons to tell time helpful? What were the consequences of his idea?
22. How did Newton influence the board on the solution to longitude?
23. How did Harrison get around the temperature problem?

24. Was the interview with George Graham a good thing for Harrison?
25. What was the outcome of Harrison's first sea trial with his sea clock?
26. Was H2 successful? Did it have problems?
27. Was Masculine's celestial tables the answer to the longitude question? What might be the problems associated with this method?
28. What was different with H3? Was it the answer to his problems?
29. What was the different direction that Harrison took to develop H4?
30. Why was it such a blow to Harrison that Masculine be appointed the Astronomer Royal?
31. Did Harrison get the money? How much time had passed?
32. What do modern navigators use to pinpoint positions now?
AFTER VIEWING THE VIDEO, ANSWER THE FOLLOWING QUESTIONS:
33. Explain how time was used to pinpoint longitudinal positions.
34. Why did the Longitude Board not accept or welcome Harrison's ideas or solutions?