



Readers' Theater: Sea Clocks

Objectives: ...choose & adapt spoken language appropriate to the audience, purpose, and occasion, including use of appropriate volume and rate
...present dramatic interpretations of experiences, stories, poems, or plays

Voice 1: Your Highness, we come with bad news.

King: Yes, go on.

Voice 2: We fear yet another ship is lost.

King: Have you tried calling the captain on his cell phone?

Voice 3: It is the year 1700, your Highness. Cell phones won't be invented for almost three hundred years.

King: Oh, yes, I should have known that. So, what's the problem this time?

Voice 1: That's the problem.

King: What's the problem?

Voice 2: Time, Sire.

King: Time?

Voice 3: Yes, your Highness. Time.

Voice 1: The ships must keep accurate **time** to be able to know how far east and west they are.

King: But, they know where they are north and south?

Voice 2: Yes, Sire.

King: How?

Voice 3: By the sun and stars, your Highness.

King: So what's the problem?

Voice 1: The sun and stars can't tell them how far east and west they are on the ocean.

King: Won't they eventually hit land if they stay on the same latitude?

Voice 2: Yes, Sire, but sometimes they stay lost for too long.

Voice 3: They run out of food and water.

Voice 1: The sailors get sick with scurvy and die.

King: Well, DO something about it!

Voice 2: What do you suggest...er... command, Sire?

King: You say they need to know the time? So, put a digital clock on the ships, you imbecile!

Voice 3: Your Highness, digital clocks won't be invented for 250 years.

King: Oh, well, then. Here, take my clock. Have one made for every ship.

Voice 1: Your clock has a pendulum. So do all of our clocks.

King: You have something against pendulums?

Voice 2: Oh, no, Sire. Clocks with pendulums keep perfect time ... on land.

Voice 3: But on the sea, when the waves get rough, the pendulums get... er...confused....and swing wildly.

King: (shouting) I will not have confused clocks guiding our ships!

Voice 1: Yes, your Highness.

King: Tell the clock makers to fix them.

Voice 2: They don't seem interested, Sire.

King: (angrily) INTERESTED? I'll give them something to be interested in!

Voice 3: (quivering) Stocks?

Voice 1: (fearfully) Flogging?

Voice 2: (whispering) Beheading?

King: Now, how could headless clockmakers fix a confused clock?

Voices 1, 2, 3: Of course, they couldn't, Sire.

King: They've got to have INCENTIVE!

Voice 3: Land?

Voice 1: Food?

Voice 2: Cattle?

King: No, an expense paid tour of the United States!

Voice 3: Sire, that country won't exist until 1776.

King: Okay, NEW COMPUTERS, then!

Voice 1: Your Highness, computers won't be invented for 250 years.

King: (mumbling) Oh, yes. I knew that. (excitedly) Well, how about MONEY!

Voices 1,2,3: Of course! What a brilliant idea!

King: I'll call the English Parliament together and tell them to offer a handsome reward... 20,000 pounds sterling...to anyone who can make a clock that works on the sea! Some poor genius will accept the longitude challenge!

All: Read **Sea Clocks** by Louise Borden, the story of the clockmaker who accepted the challenge and saved the ships at sea.





Where in the World is England?

Objectives: ...use geographic tools to collect, analyze, and interpret data
...interpret and use graphic sources of information such as maps

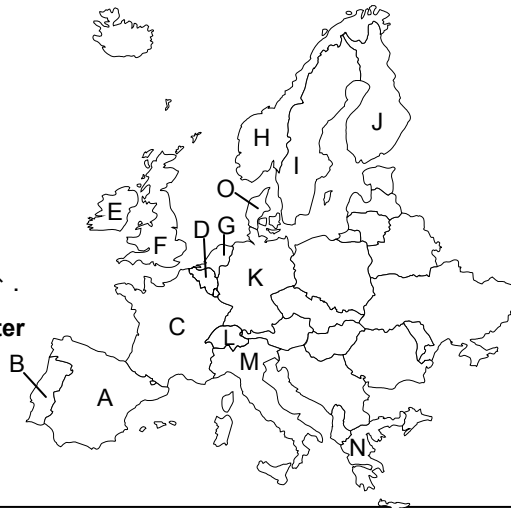
On this world map, use map pencils to:

- * Color the **United States** green, **Mexico** brown, and **Canada** pink.
- * Circle **England** in red.
- * Color **Europe** yellow.
- * Mark your own home with a red star. ★
- * Label **oceans** and lightly shade bodies of water blue.
- * Label **continents** and outline each with a different color.



Where in Europe is England?

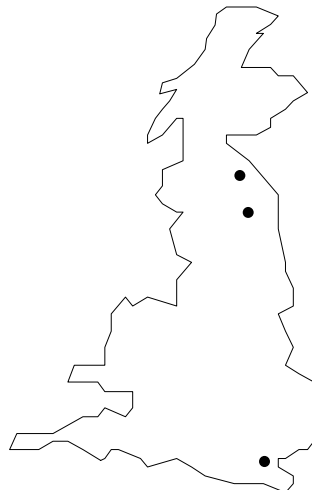
- * Color **England** light red.
- * Label the neighboring **countries** by writing their names in the lettered blanks.
- * Draw and label the **Alps** ^ ^ ^ .
- * Label and color the bodies of **water** light blue.
- * Color **France** yellow.
- * Color **Iceland** orange.



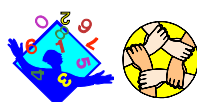
- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____
- G. _____
- H. _____
- I. _____
- J. _____
- K. _____
- L. _____
- M. _____
- N. _____
- O. _____

What is in England?

- * Color **England** green.
- * Label these cities: **London**, **Lincoln**, **Cambridge**.
- * Draw and label the **Thames River**.
- * Draw and label the **Humber River**.
- * Color bodies of **water** blue.
- * Label bodies of **water**.
- * Draw and label other cities and rivers.



Use an atlas or internet resources

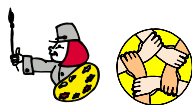
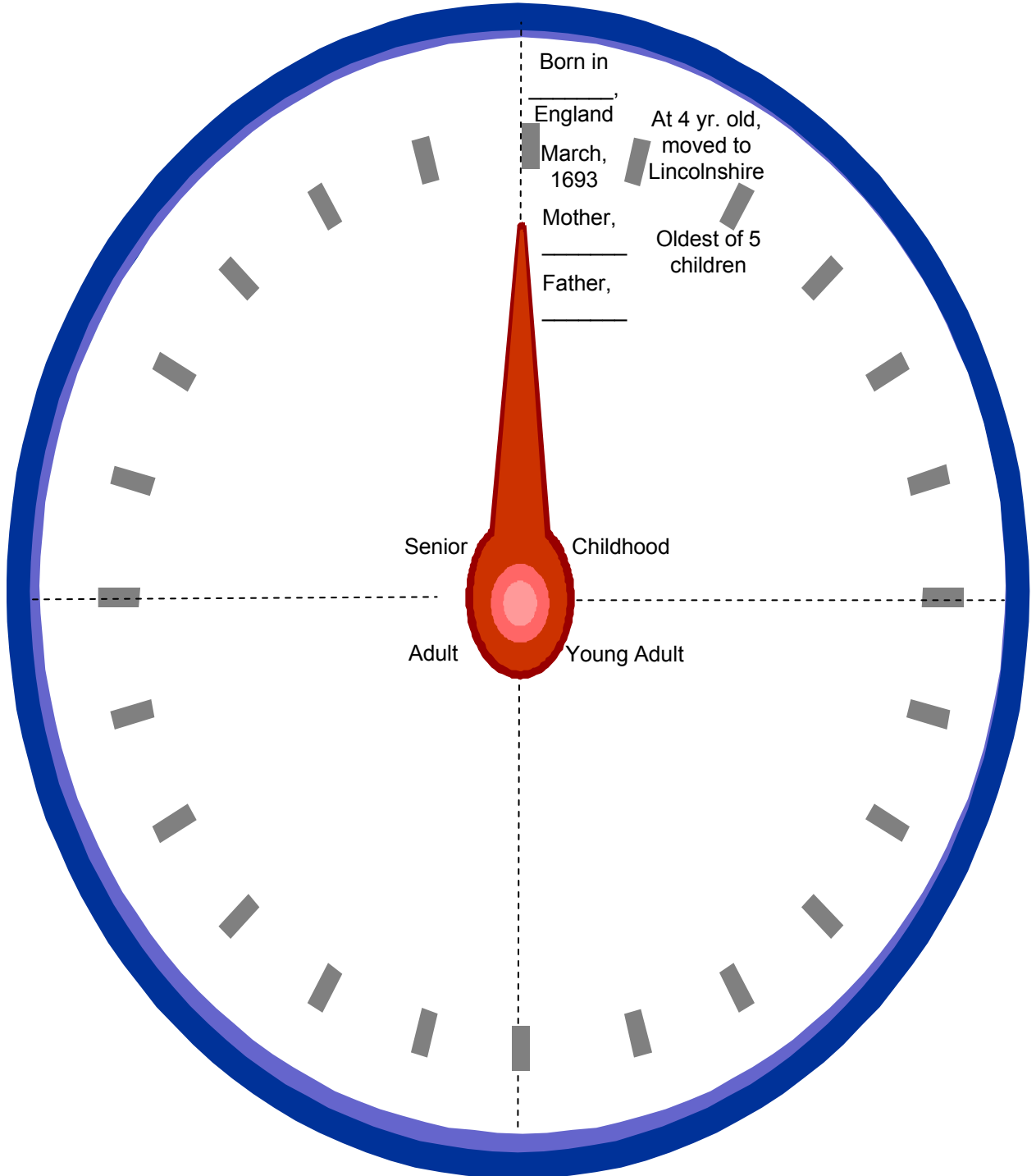




The Time of His Life

Objectives: ...represent text information in different ways such as a graphic organizer
 ...analyze characters, including their traits, motivations, conflicts, points of view, relationships, and changes they undergo
 ...summarize and organize information from multiple sources by taking notes, outlining ideas, or making charts

On a paper plate, create a clock to show the life of John Harrison. Each quarter of an hour would represent 1/4 of John's life. The number lines would show him getting older and with notes telling what he did at each time of his life to try to reach his goal. Include dates. You can even add pictures.





Telling Time at Sea

Objectives: ...draw inferences such as conclusions and generalizations and support them with text evidence
 ... draw on experiences to bring meanings to words in context such as interpreting multiple-meaning words
 ...answer different kinds of questions
 ...produce summaries of texts
 ...represent text information in different ways, including story maps, graphs, and charts

Use your understanding of the story to answer the following questions.

1. The information helps you to understand that~

- A. before John Harrison's sea clocks, sailors used the sun and stars so they never got lost on the ocean.
- B. no one heard of longitude before John Harrison made his sea clock.
- C. ships were often lost in the ocean before John Harrison invented his sea clock.
- D. John Harrison's sea clock let sailors know how far north and south they were.

2. Isaac Newton was a scientist who figured out how time helped figure longitude by using~

- A. pendulums.
- B. math.
- C. maps.
- D. the stars.

3. To determine its longitude on the earth, a ship at sea needed to know two things:

- A. what time the sun would rise and what time it would set.
- B. where to put the fish they catch and what time dinner will be served.
- C. what time it was at the home port and what time it was aboard the ship.
- D. how to make a clock and where to put it so it wouldn't get wet.

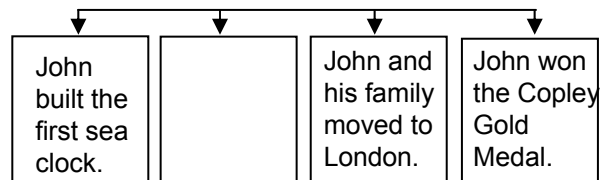
4. How long did it take John Harrison to build the first sea clock?

- A. five months
- B. a year
- C. five years
- D. ten years

5. Harrison decided to make a second sea clock because ~

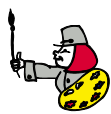
- A. the first one was too big.
- B. the first one lost time.
- C. the first one didn't work well on its test runs.
- D. the first one was too small for the crew to see.

The diagram below shows some events in John Harrison's life. Use the diagram to answer the question below.



6. Which of these belongs in the empty box?

- A. John won the 20,000 pounds.
- B. John asked the Board for money to build a second clock.
- C. John asked the Board of Longitude to allow his sea clock to go on trial.
- D. He finished his third sea clock.



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