

## Edheads' STEM Mysteries: Splitting War Ships Student Worksheet

Mystery: Why are Liberty Ships splitting, sometimes in half?

1. How would a materials scientist and mechanical engineer be useful for solving this mystery? (How do these two professions study that relate to this mystery?)

**Use the information to answer questions 2 - 7.**

Research:

2. Go through each of the pieces of data and summarize what you can learn from it.

Information Type	Summary
Attacks on Ships	
Quality of Metal	
Fracture due to forces at sea	
Fatigue of Steel	

Steel Ductility	
Stress Corrosion	
Temperature Gradients	

Analyze:

3. What pieces of information above are critical to solving this Mystery?

Peer Feedback:

4. STEM professionals rarely work by themselves. Material scientists and engineers would work together to solve this Mystery and propose solutions to stop the splitting. Discuss with a partner your answer to question 5 and summarize what they shared with you.

5. What changes, if any, would you make to your answer in question 3, based on the feedback you received for question 4?

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Claim-Evidence-Reason:

6. Why did the Liberty Ships crack, sometimes in half?

- a. Claim: Write one or two sentences to answer this question.
- b. Evidence: List the pieces of information that support your answer.
- c. Reason: Explain how the pieces of information would lead a materials scientist or engineer to make the claim.

Claim	
Evidence	
Reason	

Conclusions and Next Steps:

9. What might the materials scientist and mechanical engineer do to solve the problem of the cracking?

