

Edheads' STEM Mysteries: Teacher Key to Cracks in a House Student Activity Sheet

Name: _____ Grade or Period: _____

- 1) Thinking about the structure needed, what are the main differences between the two walls (A and B)?

- 2) Pick two of the following causes our general contractor should check to solve the mystery of the crack and explain your reasoning why or why not this is the likely cause?

- 3) The images on the next page show examples of typical impact damage to home drywall. What do you notice about these examples? Is impact a likely cause? Why or why not?

- 4) What do you notice about these examples? Is earthquake a likely cause? Why or why not?

5) Is structure a likely cause? Why or why not?

6) Is settling a likely cause? Why or why not?

7) Is old paint a likely cause? Why or why not?

8) So which component above do you think most applies to this case? Explain why.

9) Though the bridges are different in many ways, what do all the bridges have in common?

10) Which of the above bridge types most reminds you of the structure of a house? Why?

11) Which type or types of bridges are used to span especially long distances? Why?

12) What do you think would have to be added to a truss bridge to allow it to span longer distances?
Draw a picture of a truss bridge with these additional structures.

13) Take another look at wall A in our mystery. What do you notice about how bridges are designed that can be compared to the arches in wall A? Below, write your solution to the house structure issue described in this mystery.

14) How does your thinking in the previous question compare to the solution? above? If you need to change something, do so, and then explain how these two situations (bridges and houses) and the forces involved are similar even though the size and materials are very different.