**Strong Structures Research Notes – Days 2 and 3**

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*Visit the Strong Structures project Weebly to access website links found on this worksheet:*  
(Durant website - - hover over Our School - - Media Center - - Student Research - - Weebly - - Science - - Strong Structures)  
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**A: Research**

Answer ONE of the following questions to gain understanding of how engineers build buildings. Read the articles linked after your question. Take great notes on the next page! You'll be sharing your findings and teaching the other members of your group.

**PUT A CHECKMARK on the line next to the question you’ve been assigned.**  
  
\_\_\_\_\_ 1.    What human factors do you think a civil/structural engineer needs to take into consideration when planning an office building? (Examples are the weight of people and furnishings, need for water, fresh air, escape routes, etc.) <http://asumag.com/facility-planning/focusing-human-factors>  
  
\_\_\_\_\_ 2.   When thinking about the force pushing down or across a building, how would you be able to assess any impact the weather may have on the structure you are building? <http://www.rci-online.org/interface/2005-02-crissinger.pdf>  
  
\_\_\_\_\_ 3.   What features make strong bridges? Strong structures can be created using weak materials. What is important to remember when constructing structures using weaker materials? (*Abracadabra of Engineering* article link on Weebly)  
  
(Use [Dictionary.com](http://dictionary.reference.com/) to define any terms that you are unfamiliar with.)

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| ***Main Idea(s) of the article*** | ***Your notes on the question you chose*** |
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http://images.clipartpanda.com/pen-clip-art-aTqzAAbpc.png **Citing your Source:**

**Journal Article:**

Author(s) (last name, first name) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **,** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.**

“Article Title” “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.**”

Name of Magazine or Newspaper \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.**

Date of Publication (Month DD, YYYY) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.**

Page numbers (if available) \_\_\_\_\_\_\_\_\_\_\_\_\_ **.**

Web Address (URL) <http:// \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**>.**

Date you viewed the source (today’s date) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.**

**C: Reflect as a Group**

1. Share your research findings with your group.
2. Have the person who selected question 1. go first, then question 2., and finally question 3.
3. As each group member shares, write a summary of their information on your note-taking sheet so that you have research notes on ALL three questions.

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| ***Question #*** | ***Main Idea of the article*** | ***Summary of research findings from your group members*** |
|  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
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**D.Connecting Research to Structural Design**

*Structural engineers can specialize in a range of fascinating areas including conservation, sustainability, seismic or humanitarian engineering. Engineers that work as humanitarians, meaning they are building a structure that will offer a certain population a better way of life, must conduct research that asks two different questions, “What is going on” and “why is it going on”. Descriptive Research asks the “what” and explanatory research asks the “why”.*

You are a structural engineer working on a humanitarian project in a small village in Central America. Include your responses to the following statements in a paragraph containing a minimum of FOUR sentences. If you need more room, please continue your response on the back of this sheet.

1. Pick a project that you would like to work on. (i.e. building a school, water shed, barns for livestock, church, homes, etc.)
2. Explain the research you would need to conduct, both descriptive and explanatory. What are some questions you would need answered to know where to begin your project?
3. Explain the structure you will be building, and why you chose certain characteristics for the structure.

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