

Grade 7 Science

Unit 4: Structures



S.E. Design Challenge

To complete this project you will be using a few of the science room tools. It is important that you become familiar with these tools, and the safety precautions associated with each of them.

We will spend the first part of today's lesson discussing and demonstrating the proper use and care of these tools.

Please join me at the back, so that we may discuss these tools.



S.E. Design Challenge

Today is the second period for your Structural Efficiency Design Challenge. You should be arriving with a plan for your structure.

If you owe science work, you will be doing that until you have submitted everything, completed properly. You do not sit with your group, you do not talk with anyone.

If you are done all of your science, you have the entire period today to work on building your structure. You will also have next class to continue your build.

While building, keep the criteria in mind (reviewed on the next page). i.e., if you feel you are done, keep in mind that 25% of your grade is aesthetics.



S.E. Design Challenge

Criteria:

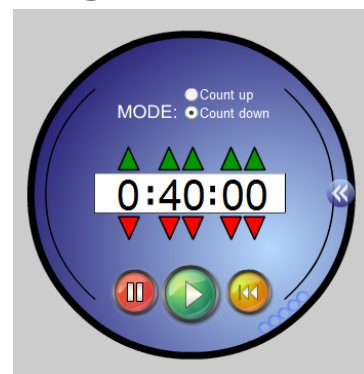
- Your structure can not be a mass structure.
- The masses must be placed on your structure at a location at least 25cm off the ground.
- Your structure may not be more than 15 cm wide, in any direction, at any part of the base.

Testing:

- You will first mass your structure.
- You will then put masses on the structure, one at a time, until the structure fails or until we run out of available mass.
 - Keep in mind that if two groups hold all of the mass, it is based on S.E., meaning the lighter structure wins.
- You will be required to document your test results on a worksheet provided.
- There will be a "twist" to the test scenario that you will not be informed of prior to testing; it will have to do with the stability of your structure.

Grade:

- Your grade will be determined as follows:
 - 25 % - Stability Performance
 - 25 % - Structural Efficiency (scaled based on grade 7 average)
 - 25 % - Test Documentation (worksheet)
 - 25 % - Aesthetics (scaled based on class structures)
 - -10 % for each criteria broken or step not followed



You will need to cleanup all of your supplies before the end of class. You also need to make sure you store your structure/supplies appropriately.