**LAB #2: Strong ‘and EFFICIENT’ Straws**

Names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Class: \_\_\_\_\_\_\_\_\_\_\_

**Objective**:

- To design an **efficient** straw structure that will support a full cup of water at least 8cm off the table.

[](http://www.google.ca/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRxqFQoTCPT_46rTmsgCFYM8kgodbYcBKQ&url=http://www.southlandgroup.co/our-products/janitorial-kitchen-washroom/plastic-cups-disposable-white-8oz-ctn-1000&bvm=bv.103388427,d.aWw&psig=AFQjCNFVVhZNHVr1x0ta64KIlgar5paRMQ&ust=1443561371898672)[](http://www.google.ca/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRxqFQoTCO-p0ZDTmsgCFQUHkgodAZUFaQ&url=http://www.lombard.com.au/straws-flexible-fluro-pk-225/w1/i1037195/&bvm=bv.103388427,d.aWw&psig=AFQjCNFantuMj2TQDhwIfG4YaSGsEw2amQ&ust=1443561318230165)**Materials and Cost**:

Straws 1 straw = $1

Masking Tape 15cm = $20

Cup 1 cup = free

**Procedure**:

1) Plan, design, and budget…

2) Purchase and record

|  |  |  |
| --- | --- | --- |
| **Material** | **Amount Purchased** | **Total Cost** |
| Straws |  |  |
| Tape |  |  |
|  | **Total Cost** |  |

[](http://www.google.ca/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRxqFQoTCMPLg4Dav8gCFcXMgAodrIoC8A&url=http://www.coleparmer.com/Product/Ohaus_Triple_Beam_Balance_w_Tare_and_Deep_Stainless_Steel_Pan_610_g_x_0_1_g/EW-01006-01&psig=AFQjCNEiyEogeDfb-dAi5XVvV_gD7R128A&ust=1444834418479321) 3) Build!

4) Test

5) Weigh

Our structure weighed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ grams (with the cup attached).

**Review**:

1a) What ‘type’ of structure did you build? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How do you know? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) Why/How did your structure fail? Explain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) Describe, using a diagram, how you could have made your structure more efficient ( = strengthen without adding weight).

4) How efficient was your structure? Circle one.

0=not efficient 1=somewhat efficient 2=efficient 3=very efficient 4=extremely efficient

5) Calculate the quotient…… \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ÷ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(weight in grams) (cost to build)