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**Raft Design**

**Scenario:** We have taken a 3 hour tour on the calm waters of Lake Michigan. The weather started getting rough, the tiny ship was tossed, and If not for the courage of the fearless crew the ship would be lost. The ship set ground on the shore on an uncharted desert isle.

**Objective:**Your job as a team is to design and construct a raft that can support the greatest amount of weight before sinking.

**Materials and Tools:**

|  |  |  |
| --- | --- | --- |
| 1. 4 craft sticks | 4. 4 straws | 7. Scissors |
| 1. 1 plastic sandwich baggie | 5. 12” String | 8. Glue |
| 1. 1 sheet aluminum foil | 6. 12” masking tape | 9. Ruler (Measure) |

**Limitations:**  
1. You may only use the materials provided  
2. Device can not be attached to the testing pool  
3. Device must be able to float  
4. Sizes: length and width between 3”-6”  
  
**Instructions:**  
1. Brainstorm and Sketch a minimum of 3 ideas for your device  
2. Attain your materials from table after sketches have been approved  
3. Construct your device  
4. Test

**Testing:**  
1. Instructor will provide weights (Pennies)  
2. When water enters your raft and any of your pennies are submerged in water, your testing trial is over \*Submerge is defined as water covering all surfaces  
3. If any of your pennies go overboard, they will be deducted from your total amount.  
4. Count the number of pennies as you add them to your raft.

Using a pencil, Draw thumbnail sketches that communicate your ideas in the space below

|  |  |  |
| --- | --- | --- |
| **Idea 1** | **Idea 2** | **Idea 3** |
|  |  |  |

Reflection Questions:  
Answer in Complete Sentences

1. How many Pennies did your raft hold?

2. If each Penny weighs 1.5 grams, how much weight did your raft hold?

3. What would you change about your raft to make your design better?

4. List 2 pros or cons for your raft design.

5. How did your raft fail?