Building Boat Lab

Description and Rules

Student will be using classroom supplies to build a boat that floats and holds weight. We used marbles, but pennies or small scale weights would also work. This project takes about 46-60 minutes, so allow plenty of time for student to complete the challenge.

Students have a budget of $7 to buy materials. They can visit the supply store as needed for more supplies as they work, but they cannot go over budget. Budgeting is optional but adds a fun element to the task.

-remind students not to spend all their money on their first boat, or they’ll have none left for revisions

-we kept track of additional purchases on the board, easier than constantly checking papers.

The boat can be tested in the water tub as often as needed, but be cautious of getting it wet!

*Suggested add-on:* Boat insurance may be purchased for $2. If a boat is tested and gets wet beyond repair, the students can replace the exact materials used at no cost.

Materials

* Masking tape
* Plastic straws
* Waxed paper
* Foil
* Foam cups (we used toilet paper tubes)
* Craft foam sheets
* Craft sticks
* Optional: bubble wrap
* Container for water
* Marbles or weights
* Calculators
* Lab sheet

Extensions

* add in a disaster such as a hurricane, where students have to remove 1 piece of their boat.
* Have a “sale” on materials, if there is one that isn’t being utilized
* Use heavier weights to encourage students to create a sturdy boat
* Build again, but make one of the constraints that the boat must be round bottomed, cube shaped, a triangle- anything that is unusual.
* Add in additional supplies that must be used: index cards, toothpicks, a piece of cardboard, etc

Price List for Supplies

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| --- | --- |
| Item | Price |
| Foil | 75 CENTS  (PER 6IN SHEET) |
| Waxed Paper | 50 CENTS PER SHEET  (WE USED 6 BY 6IN PATTY PAPER) |
| Tubes | 50 CENTS |
| Straws | 20 CENTS |
| Foam | $1.00  (PER SHEET) |
| Tape | 50 CENTS  (PER FOOT) |
| Bubble Wrap | 75 CENTS  (per sheet) |

Building a boat- Lab Sheet

Problem: Design a boat using the materials provided. The boat must float and hold weight

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| List of Supplies | Cost of Supplies | Imagine and Plan: Sketch of Ideas |
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| --- | --- |
| TOTAL COST |  |

|  |  |
| --- | --- |
| Create and Test: Describe what happened when you tested your boat. What happened when you added weight?  Describe your testing with more weight | Drawing of your final boat |

Photos from Meshik School Boat Challenge!



