**Engineering Design Lab Packet**

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| **Names of Team Members:**  |

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| --- |
| **State the problem:**  |

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| **What we learned from our research:** |

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| --- |
| **Sketch a blueprint for your prototype (label parts):** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Itemized cost of materials:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of Material** | **Cost Per Item** | **Number of Items** | **Total Cost** |
|  |  |  |  |
|  |  |  |  |
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|  |  |  |  |

**Add the total costs of each material to calculate final cost: $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

**Build your prototype based on your blueprint!**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Your Prototype Using 3 Different Sized/Shaped Water Bottles:**Rate how well the 3 different water bottles fit into your water bottle holder prototype:

|  |  |  |
| --- | --- | --- |
| **All 3 types of water bottles fit comfortably.** | **All 3 types of water bottles fit but 1 or more is squeezed in.** | **One or more water bottles cannot fit in our water bottle holder.** |

Rate how well your prototype holds the weight of each water bottle and whether is remains securely attached to the desk or chair leg for at least 3 minutes:

|  |  |  |
| --- | --- | --- |
| **All 3 types of water bottles stayed in place easily for 3 minutes.** | **All 3 types of water bottles stayed in place for 3 minutes but 1 or more looked like it would not last long.** | **One or more water bottles did not last in place for 3 minutes.** |

Rate how durable your prototype is at absorbing or resisting condensation on water bottles:

|  |  |  |
| --- | --- | --- |
| **Our prototype absorbed or resisted condensation.** | **Our prototype absorbed or resisted most of the condensation.** | **Our prototype did not absorb or resist condensation and is damp or soggy inside.** |

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**Time to Iterate the Design Process!**

**Based on your testing, which areas need improvement (size, strength, durability) and what could you do to improve performance?**

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| **Do you need to make design changes? If so, draw your redesigned prototype below and label all changes.** |

**Itemized Cost of Materials for Redesigned Prototype:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Itemized cost of materials:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of Material** | **Cost Per Item** | **Number of Items** | **Total Cost** |
|  |  |  |  |
|  |  |  |  |
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**Add the total costs of each material to calculate final cost: $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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