**Creative Crash Testing Worksheet**



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| **Ask** |
| 1. In your own words, what problem are you trying to solve in this activity?
2. What are the constraints for this activity?
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| **Research** |
| **Vehicle Safety Feature** | **How it works / What it is made of** |
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| **Imagine** |
| 1. Generate Ideas: What a Safe Vehicle Looks Like—Prototype Ideas
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| **Plan** |
| **Design Solution for Your Best Plan to Prototype and Test**Explain the design approach that you will prototype and test… (Example: We think cushion-type safety features are the best during a head-on collision. And we think that heavier cars better survive head-on collisions.)***Initial Design Materials Used***

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| --- | --- | --- |
| Model Material | How many/How much | What it’s being used for |
| Cotton fill |   |   |
| Cardboard |   |   |
| Tag board |   |   |
| Felt |   |   |
| Foam paper |   |   |
| Craft sticks |   |   |
| Chenille stems/pipe cleaners |   |   |
| Balloons |   |   |
| Rubber bands |   |   |
| Plastic straws |   |   |
|  |  |  |

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| **Plan** |
| ***Sketch your final design with materials identified.*** |
| **Test** |
| ***Initial Testing & Analysis***

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| **Car/Group #** | **Car Mass (grams)** | **Run Length (meters)** | **Run Time (seconds)** | **Testing Success (Y/N)** | **Car speed** | **Momentum (m\*v=p)** |
| **1** |   |   |   |   |   |   |
| **2** |   |   |   |   |   |   |
| **3** |   |   |   |   |   |   |
| **4** |   |   |   |   |   |   |
| **5** |   |   |   |   |   |   |
| **6** |   |   |   |   |   |   |
| **7** |   |   |   |   |   |   |
| **8** |   |   |   |   |   |   |
| **9** |   |   |   |   |   |   |
| **10** |   |   |   |   |   |   |

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| **Test** |
| ***Initial Results Summary***Initial results: (List details of what happened to your vehicle during/after crash.)  What worked and what didn’t work? |
| **Improve**  |
| ***Redesign/Rebuild Materials Used***

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| **Model Material** | **How many/How much** | **What it’s being used for / Problem that is being fixed** |
| **Cotton fill** |  |  |
| **Cardboard** |  |  |
| **Tag board** |  |  |
| **Felt** |  |  |
| **Foam paper** |  |  |
| **Craft sticks** |  |  |
| **Chenille stems/pipe cleaners** |  |  |
| **Balloons** |  |  |
| **Rubber bands** |  |  |
| **Plastic straws** |  |  |
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***Redesign Approach******To improve on our first design, we decided to…******Because…******Redesign Testing & Analysis***

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| **Car/Group #** | **Car Mass (grams)** | **Run Length (meters)** | **Run Time (seconds)** | **Testing Success (Y/N)** | **Car speed** | **Momentum (m\*v=p)** |
| **1** |  |  |  |  |  |  |
| **2** |  |  |  |  |  |  |
| **3** |  |  |  |  |  |  |
| **4** |  |  |  |  |  |  |
| **5** |  |  |  |  |  |  |
| **6** |  |  |  |  |  |  |
| **7** |  |  |  |  |  |  |
| **8** |  |  |  |  |  |  |
| **9** |  |  |  |  |  |  |
| **10** |  |  |  |  |  |  |

***Redesign Results Summary*****Final results: (List details of what happened to your vehicle during/after crash.)****What worked? What didn’t work? Why?****Final conclusions:** |