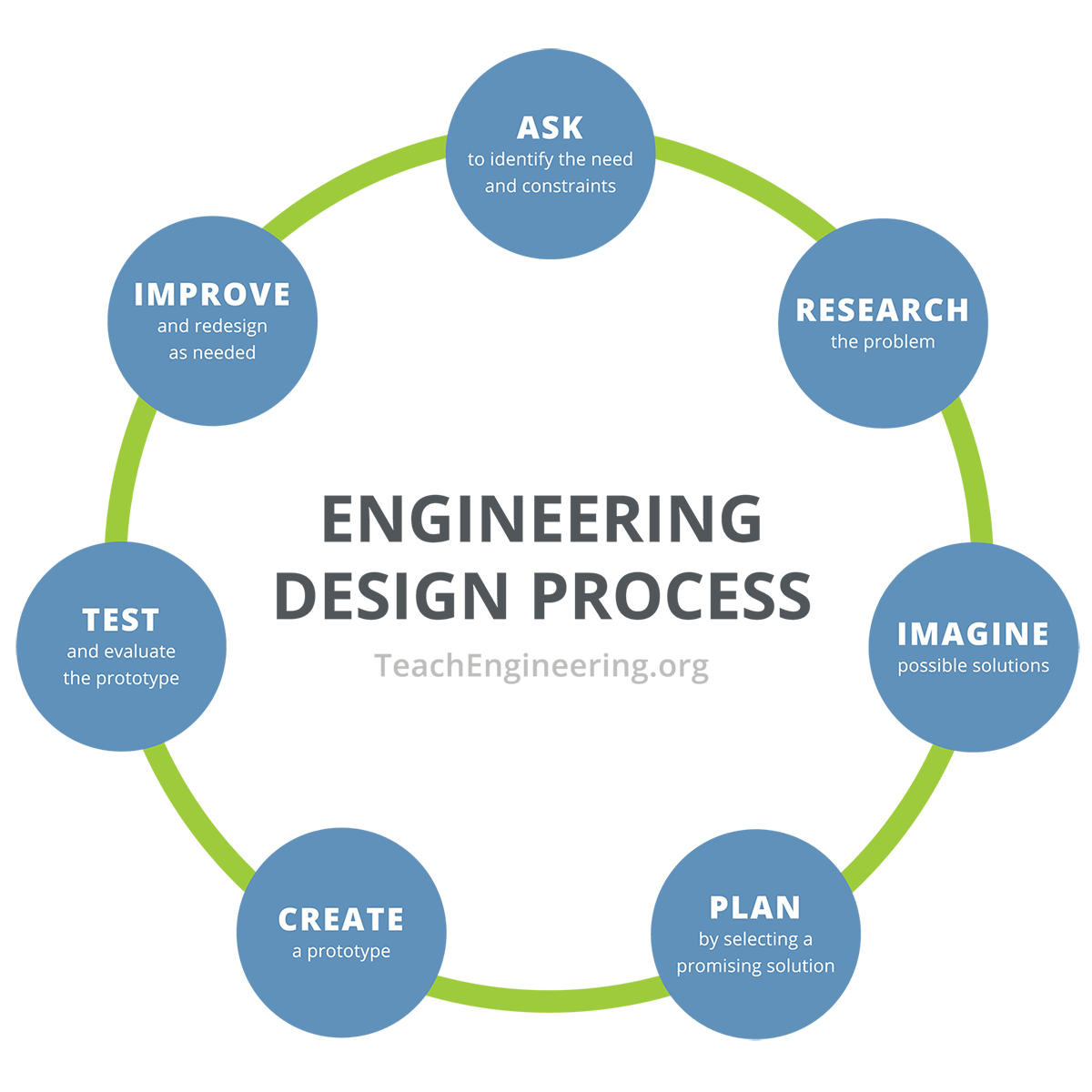
**Creative Crash Testing Worksheet**



|  |
| --- |
| **Ask** |
| 1. In your own words, what problem are you trying to solve in this activity? 2. What are the constraints for this activity? |

|  |  |
| --- | --- |
| **Research** | |
| **Vehicle Safety Feature** | **How it works / What it is made of** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

|  |
| --- |
| **Imagine** |
| 1. Generate Ideas: What a Safe Vehicle Looks Like—Prototype Ideas |

|  |
| --- |
| **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***   |  |  |  | | --- | --- | --- | | 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 |  |  | |  |  |  | |
| **Plan** |
| ***Sketch your final design with materials identified.*** |
| **Test** |
| ***Initial Testing & Analysis***   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **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** |  |  |  |  |  |  | |
| **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***   |  |  |  | | --- | --- | --- | | **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** |  |  | |  |  |  |   ***Redesign Approach***  ***To improve on our first design, we decided to…***    ***Because…***          ***Redesign Testing & Analysis***   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **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:** |