

Name: _____ Date: _____ Class: _____

Student Guide

1. **Observation:** Observe the materials available to you. Ask yourself: *what reagents (solids or liquids) can I combine to make my bouncy ball?* You can look at the physical properties of the materials.
2. **Brainstorm:** Describe what materials you will use and how much. Also, describe how you will go about using your chosen materials, what are your steps?
3. What are your constraints? Does your design have to meet certain criteria?
4. **Create it!** Follow your steps and material list. Do not deviate from it.
 - a. **(Complete the Budget Planning Guide)**
5. **Test it out:** If it worked, great! You can test it below. If not, that's ok! You can go back and determine what went wrong with your design synthesis.
 - a. What worked?
 - b. What didn't work?
 - c. Explain why you changed a certain material.

6. **Iterate:** If it didn't work, what are you changing in your product?

If you were able to create a bouncy ball then test it out.

1. Have your meter stick stand vertical from the ground as you hold it. You will drop your ball from the 1 meter mark. You will need your partner to determine the height of the first bouncy ball. What is the height of the bounce height? Place your data on the table. We will then have a group competition to ensure other competitor that the data is not skewed.
2. Below write your detailed procedures of how you created your ball. Make sure that it is detailed enough for someone else to recreate it.