

The Great Potato Chip Challenge

Students will design, build, and test a container for shipping a single Pringles potato chip via the US Postal Service.

Goal:

- To engineer the package to have the smallest mass, have the potato chip arrive in one piece, and use only environmentally appropriate materials.

Learning Objectives:

- Students will use the design process to solve a design challenge
- Students will consider mass as a variable in the design and use a balance to determine the mass of their solution
- Students will be sensitive to environmental issues

Rules and Regulations:

1. Students will use **one** regular Pringles potato chip.
2. Students will work individually or in a group of two on the design, building and testing of this project. (A group of two students may, if they wish, submit two entries, but that is not required.)
3. All containers must fit inside a regular 15 x 23 cm (6 x 9 inch) envelope.
4. All containers must be created to avoid all mail security and hazardous materials, as defined by the US Postal Service. See US Postal Service website (usps.com) or check with your local post office.
5. Envelopes must be clearly labeled on the outside with your name or names in the **upper left corner** and one return (home) address in the **upper left corner**.
6. Envelopes will be addressed as follows:

Student Name(s)
c/o: Mrs. Thall
Remington Middle School
628 Washington St.
Franklin, MA 02038

7. Envelopes **must** be postmarked no later than **Thursday, March 6, 2008**. Students can receive up to 5 bonus points for mailing their envelopes prior to March 6.
8. You **cannot** write "Fragile" or "Handle with Care" or put similar markings on the envelope.
9. No wood, glass, or food items (other than the chip itself) may be used. Only recyclable, environmentally responsible materials can be used as packaging material.

10. Any materials specifically sold as packing material (e.g., packing peanuts of any type, bubble wrap, Easter basket grass, etc.) is not allowed.
11. In no case is any Styrofoam or Styrofoam-type product allowed.
12. No substance may be applied to the chip, or the chip altered in any way. It must be a whole, edible chip when the package is opened.

Dates to Remember:

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
24	25	26	27	28	29	1
2	3	4	5	6	7	8

All envelopes will be opened and graded on **Wednesday, March 12, 2008.**

Scoring:

List of materials and container design	5 points
Chip Intactness	50 points
Envelope Mass	45 points
 Total	 100 points

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Scoring Sheet

Name or Names: _____

Period: _____

1. Date on postmark: _____ Bonus (if applicable): _____

2. Package mass (g): _____ Score (from below): _____ /45

≤ 56.7 g	56.8 - 113.4 g	113.5 - 170.1 g	170.2 - 255.2 g	255.3 - 340.2 g	≥ 340.3 g
45pts	35pts	30pts	25pts	20pts	15pts

3. Chip Intactness
(or Mass of the largest piece) : _____ Score (from below): _____ /50

Intact	Cracked	≥ 1.5g	1.5 - 1.0g	1.0 - 0.5g	Powder
50pts	45pts	35pts	30pts	25pts	20pts

4. Materials & drawing: _____ 5 points: _____ /5

Total: _____ /100