

589

# Potato Chip Mailing Contest Wednesday Challenge

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# Objective/Requirements

- Create some sort of contraption the can take a Pringles chip and have it be sent through the mail from La Canada and have it be in the best condition possible when it returns.

- Dat Formula:

$$\text{Final Score} = (\text{Chip Rating}) / (\text{Volume} * \text{Mass} / 1000)$$

## Chip Rating:

### Perfectly Intact: 100pts

Just like it left the Factory  
We're Sucken Deesul!

### Slightly Damaged: 50pts

Cracked, But Still in One Piece  
Sheh Now We're Moter-en!

### Chipped Chip: 10pts

Chipped Along the Edges, Less Than 5 Pieces  
Stay go-en, Keep-er Lit!

### Spit Chip: 10pts

Chip is Broken into 2 Fairly Equal Pieces  
Stay go-en, Keep-er Lit!

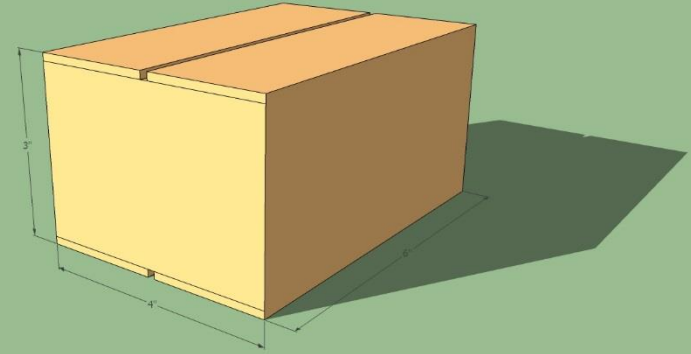
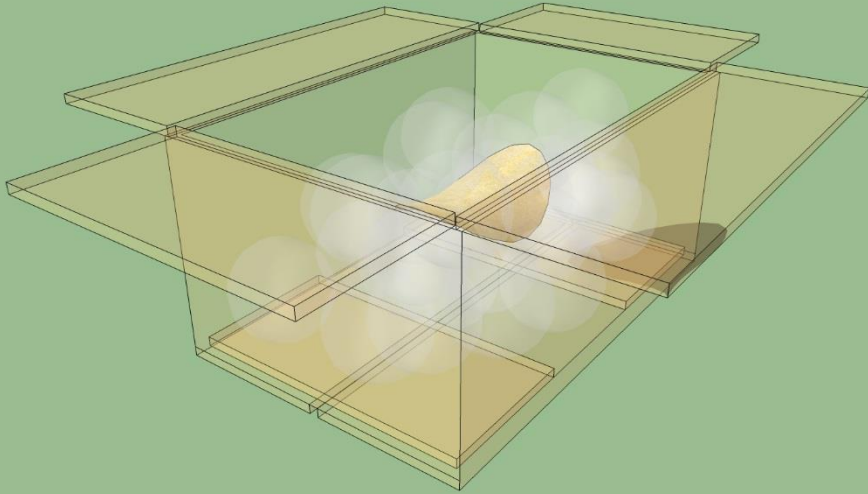
### Significantly Damaged: 5pts

Chipped and/or Cracked into Less than 20 Pieces  
WHAT!

### Chip Dust: 0pts

Broken into an uncountable number of pieces  
Well Then...

# Design



- Our design consists of a box that is 4 inches wide, 6 inches long, and 3 inches high.
- The chip will be surrounded in lightly packed cotton balls so that the chip will have some wiggle room.



- If the chip has enough room to move around and there is enough cotton in the box, there will be no areas for the chip to catch and be crushed. Too much cotton and the chip will be under too much pressure and break. Too little, and the chip will bounce around too much and break.

# Predicted Score with Explanation

- Perfect condition:  
 $(100)/(78*88.5/1000)= 14.49$
- Slightly damaged:  
 $(50)(78*88.5/1000)= 7.24$
- Chipped/Split:  
 $(10)(78*88.5/1000)= 1.45$
- Significantly damaged:  
 $(5)(78*88.5/1000)= 0.72$
- Chip Dust:  
 $(0)(78*88.5/1000)= 0$
- Since the box is a 3" by 4" by 6", the volume would be 72in cubed.
- Estimating the weight of one square inch of cardboard to be 0.335g and there is 108 square inches of cardboard, the mass would be somewhere around 36g, give or take a few grams for the chip and the cotton.
- Plug that into the formula and we get the scores show to the left.

# Parts List

Parts:	Provider:
Cardboard Box	Kevin S
Cotton Balls	Nathan
Packing Tape	Kevin S
The Chip	Neato

# Photo of Mailed Container



# Data

- Official Score





# Lessons Learned

- What worked well
- What would you change next time
- If your predicted score differed from your actual, why?

