



## Engineering Virtual Learning

# HS Intro to Engineering Design Lesson #19

April 30, 2020



**Objective/Learning Target:**  
Students will investigate,  
design and create a shipping container.

# Bell-work:

Watch this video about a shipping box

<https://www.youtube.com/watch?v=y1Z0XtkUkBE>

Why do you think Amazon would want a shipping box that has as little extra space as possible?

Does UPS or the Postal Service care if you send 1 domino in a box 12" x 12" x 12"?

Do you think charging to ship air in over-sized boxes is ethical?

# Learning Practice: “Ship a Chip”

Once products are manufactured they must be transported safely to the customer. A Package Designer creates an appropriate container for the item being shipped. To do this they must closely examine the product and consider the manner of shipment.

What if you are a package designer who needed to ship 3 Pringles chips?

**Objective:** Create a package design to ship 3 Pringles Chips safely through the US mail system.

**Material:** 1- Letter Envelope (large or small), 3- Pringles chips, 3- 3 x 5 cards, 2- drinking straws 2- sheets 8.5 x 11 paper, 3- craft sticks, 12” of tape. You may substitute if needed (example: playing cards for index cards, but don’t forget to put them back in the deck when you are done)

**Procedure:** Using the materials above design and create a shipping container envelope to securely transport 3 Pringles chips. **Document the process in Your engineers notebook.**

To Test your Pringle shipping container; Place the chips inside, tape it closed and place it in your backpack for 5 days. Carry your backpack for a walk up and down your road each day for the 5 days and throw it in the corner of your room when you get home.

**Did the chips survive?**

# Check for Understanding:

Consider the outcome of this experiment. Reflect in your engineers notebook on how you could have improved your shipping container.

How would you modify your container to carry 10 chips?

Explain why you think Pringles chose the Cylindrical container?

# Extend Your Learning:

Do you think your shipping container could have handled the real US mail?

Investigate mail delivery of an envelope (see video on learning resource page) and use that knowledge to improve on your shipping container. Address the envelope to yourself and mail it.

Did it arrive to you safely?

# Learning Resource Links:

US Mail:

<https://www.youtube.com/watch?v=gB7QOK1bd3U>

<https://www.youtube.com/watch?v=WX16-52bHvg>