

# Ship the Chip at London Children's Museum

We are going to pretend a potato chip is a valuable commodity and design the smallest package for shipping this. We will test your design by dropping of the kitchen counter and by stacking a book on it. The goal is to not look like the example on the right!!



Attached is design record for your project. This is a worksheet for the design and fabricating. All engineering involves a detailed design before fabricating and a record of that design and how it performed.

There is a live Zoom session to talk about engineering, to introduce this activity and to provide help and assessment as needed on Saturday March 13 at 1:00 PM EST. If you haven't already, please go to <http://nemontario.ca/events/>, scroll down to the 13th on the calendar and click on "Event Details" to register for this and possibly the morning event as well (Tall Tower Challenge).

A material and tool list is provided below with some notes on alternatives to scrounge around home. A limited number of material kits are available for pick-up from [London Children's Museum](#) (LCM) by calling 519-434-5726. The kit will also include a predesigned template to fabricate and compare to your design.

You can also use these instructions, if you wish to do these activities asynchronously (not on the Zoom event).

## Materials

Potato chip (and maybe a few spares!)  
Card stock (cereal box or other package)  
Craft or wrapping paper  
Tape

## Tools

Scissors  
Ruler  
Heavy book(s) (~2kg)

Some helpful hints:

- Use the worksheet to sketch your design and work out size of your package
- Your package needs to be designed to be opened and reclosed so you can assess the result after testing
- Use the tape sparingly to keep the cost and weight down (always engineering goals)
- The package will be testing by dropping it 6 times of a counter top (or kitchen table) to simulate mishandling and then by stacking a heavy book (or two) on top of it to simulate warehousing

See you all on Saturday March 13!

# Design Record – Ship the Chip



Designer \_\_\_\_\_

Date \_\_\_\_\_

**Brainstorming** (ideas for how to build packaging to protect a single potato chip with given materials: card stock, wrapping paper, and tape)

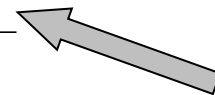
Hints – need to be able to open package to see test result and reclose

- use the back of the sheet to sketch ideas

(sketch, with dimensions)

Planned dimensions \_\_\_\_\_ cm x \_\_\_\_\_ cm x \_\_\_\_\_ cm

**Review** (Will the design work? Is it complete?) Approval \_\_\_\_\_



## Testing

Actual dimensions \_\_\_\_\_ cm x \_\_\_\_\_ cm x \_\_\_\_\_ cm

Drop Test – from counter top, 2 x on each of 3 faces

Open package and review - result

Crush Stress Test – Stack Electricity Handbook on top

Open package and review – result

**Assessment** (What would you do differently next time?)