



BRIDGE BUILDING CHALLENGE RULES

Innovation Station – Engineering Your Life 2018



WHAT IS THE CHALLENGE?

The event involves fabricating a bridge from popsicle sticks and glue only. The bridge will be tested to failure at the Professional Engineers Ontario, Windsor-Essex Chapter Innovation Station – Engineering Your Life 2018 event (ISEYL).

ISEYL 2018

Bridge Building Competitions will be held:
Saturday, March 3, 2018 from 9:00am to 12noon and 1pm to 4pm
(registration at 9 to 9:30am and 1 to 1:30pm for the two different sessions)
At the St. Clair College Windsor Campus
(2000 Talbot Road West; in the new Dr. John A. Strasser Student Life Centre)

WHO MAY ENTER?

Any student or group of students, who think they can build a popsicle bridge. Contestants will be broken into the following categories:

- Kindergarten to Grade 3
- Grades 4 to 6
- Grades 7 & 8
- Grades 9 to 12

REGISTRATION:

If you want to enter your bridge into the competition, please register online through Eventbrite at:
<https://www.eventbrite.com/e/peo-windsor-essex-iseyl-bridge-busting-competition-2018-tickets-42315501805>

Online Registration Deadline: February 19, 2018 will be the last date to enter the competition. Beyond this date, please review the PEO Chapter website for an update on any deadline extensions (<http://windsoressex.peo.on.ca/wordpress/?p=966>).

BUILDING MATERIALS:

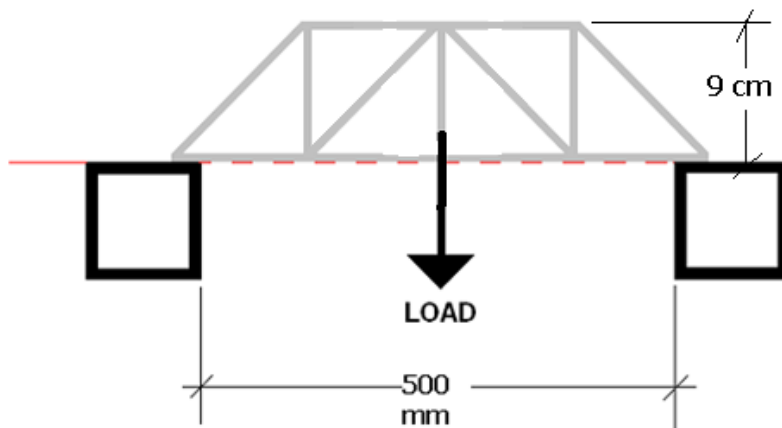
- Only standard craft popsicle sticks (114mm x 10mm x 1.5mm) will be accepted
- Only adhesives include white, wood or hot glue gun

No other glues, wood types, additional materials or fasteners are allowed.



CONSTRUCTION SPECIFICATIONS:

- Bridge length: Bridge must be long enough to span over the **500mm gap** between supports. Therefore, make it a bit longer so it sits on the supports (**at least 550mm long, please**).
- Bridge width: 100mm minimum; 115mm maximum
- Bridge height: 90mm minimum
- Bridge weight: 300 grams maximum (i.e., 230 standard size popsicle sticks is probably too heavy)
- Bridge design must be such that the lower portion of the bridge does not extend more than 50mm below the deck
- Popsicle sticks CANNOT be cut or broken in any way. You must use the entire stick.
- Be creative! Bridges can be constructed in many different ways.
- HINT: Leave an approximate 10mm wide gap at midspan for the Bridge Buster clamps to load your bridge



JUDGING AND TESTING:

- Bridge ends will be placed on the two bridge buster abutment supports (clear span)
- Bridges will be loaded at midspan with a loading device below the bridge
- Incremental loading will be applied until ultimate bridge failure
- All bridges WILL be destroyed during testing!
- Bridges will be judged based on the highest ratio of:

$$\frac{\text{Load Carry Capacity (total load before breaking)}}{\text{Bridge Weight}}$$

THE COMPETITION

- **Weigh-In:** All bridge entries will be weighed during the competition
- **Disqualification:** Bridges will be examined by the judging team before loading. Any bridges made from materials not permitted will be disqualified.
- **Testing:** Our PEO judging team will load all bridges using a pneumatic load system
- **End of Test:** All tests will end in destruction!!! No bridges will survive!
- **Judges' decisions are final: That's that!!**

