



The Association of
PROFESSIONAL ENGINEERS AND GEOSCIENTISTS
of the Province of British Columbia
PEACE RIVER BRANCH

**8th ANNUAL POPSICLE STICK BRIDGE
BUILDING CONTEST**

AND

**ROCK, FOSSIL, AND LANDFORM
IDENTIFICATION WORKSHOP**

**TOTEM MALL, FORT ST. JOHN
SATURDAY, MARCH 04, 2006, 10:30 A.M. TO 2:30 P.M.**



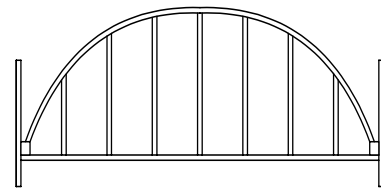
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8th ANNUAL POPSICLE STICK BRIDGE BUILDING CONTEST

**TOTEM MALL, FORT ST. JOHN
SATURDAY, MARCH 04, 2006, 10:30 A.M. TO 2:30 P.M.**

Categories:

- 1. Junior: Grades 4 & 5**
- 2. Intermediate: Grades 6, 7, & 8**
- 3. Senior: Grades 9, 10, 11 & 12**
- 4. Open Category: Teachers, Parents, etc. (No Prizes)**



1st Prize: \$75.00

2nd Prize: \$50.00

3rd Prize: \$30.00

Prizes will be awarded for the top 3 finishers in each category, per entry (not per person)

The contest goal is to construct the strongest bridge possible using only 100 popsicle sticks and the white glue provided in the contest package. Ties will be decided by bridge weight with the lighter bridge winning.

The bridge must allow a small toy car to cross on a construction paper deck, and must have a loading platform for strength testing. Specifications are included in the contest rules (see following page); otherwise, the design of the bridge is left to the competitors. This contest has been run at major Canadian Universities by their Engineering Undergraduate Societies for over 50 years.

Contest Fee: \$5.00 per team

Sign-up: By day Contact Christine or Allan Zackodnik at 793-0753
(email: zackodnik@telus.net), or **By evening** Phone 250-787-9117

Fax registration to 250-787-3219 or **send by school mail** to Upper Pine Elementary
attn. Chris Zackodnik. There is no limit on the size of the team for each entry, but
each team must have an adult sponsor to register.

Note that prizes are awarded on a per entry basis, not per person.

Deadline: Sign-up deadline is 4:00 P.M., Friday, February 10, 2006. Note: the contest may
be cancelled if not enough entries are received. Those who have registered will be
notified if the contest is cancelled.

Supplies: Supplies will be delivered to participating schools by Friday, **February 13, 2006.**
Please contact Allan Zackodnik at 793-0753 regarding times. The fee is payable
when the construction supplies are delivered to each school. Each entry will receive a
package that includes all the construction materials required.

POPSICLE STICK BRIDGE BUILDING CONTEST

CONTEST RULES

CONSTRUCTION:

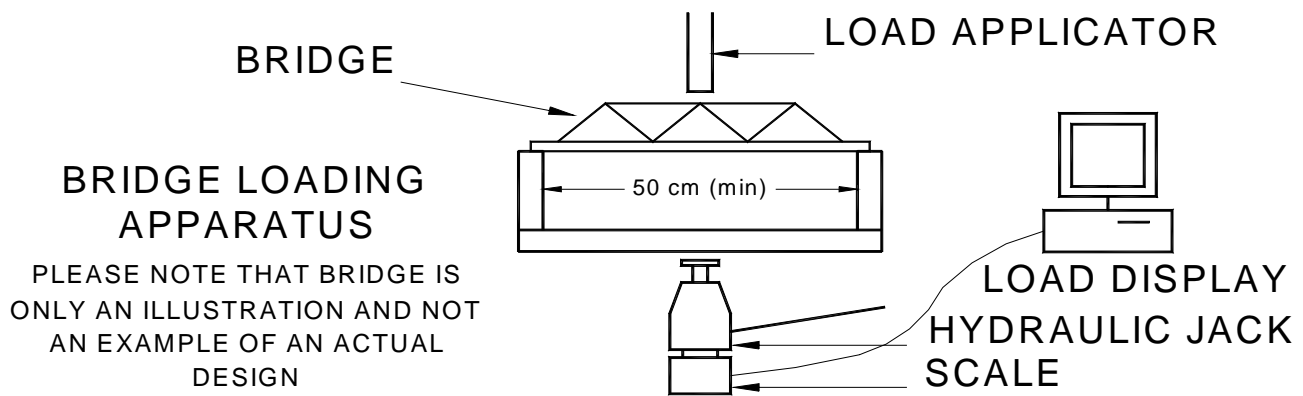
1. Each contestant will receive 150 popsicle sticks, a medium sized bottle of white glue, and a sheet of construction paper.
2. The bridge must be built of a maximum of 100 popsicle sticks and the white glue from the package supplied. The construction paper provided in the registration package may only be for the deck of the bridge. No other materials are permitted to be used.
3. Popsicle sticks may be cut.
4. A “Matchbox” / “Hot Wheels” sized toy car must be able to be rolled across the bridge on the bridge deck. The car is approximately 3.5 cm wide and between 1 and 2 cm in height.
5. The overall height of the bridge must not exceed 30cm.
6. The bridge must span a 50 cm gap (i.e. the space is 50 cm wide, so the bridge must be wider than 50 cm to allow its ends to sit on flat surfaces on either side of the space).
7. In addition to the bridge deck for the car, the bridge must also have a loading platform. This will be to allow weight to be placed on the bridge to test its load capacity. The loading platform at the top of the bridge must consist of a minimum of the length of one popsicle stick (approx. 11.5cm) in length and 4 cm width. Contestants should consider that a larger platform might make it easier to load the bridge.
8. The team name and category must be clearly labeled on the bridge.

TESTING THE BRIDGES:

1. Prior to the start of competition, contest judges will:
 - Weigh each bridge to ensure that a maximum of 100 sticks are used.
 - Examine each bridge to ensure that only popsicle sticks, white glue, and construction paper are used, and that the paper is only used for the bridge deck.
 - Check each bridge to ensure that it has a loading platform as per specifications.
 - Attempt to roll a “Matchbox” / “Hot Wheels” sized toy car across the deck of each bridge.

Bridges not meeting these requirements will be disqualified from the competition.

2. Each bridge will be tested by applying force to the loading platform (see illustration below). The winner is the bridge that holds the heaviest load prior to failure. In the event of a tie, the lighter bridge will win.
3. Please note that testing will result in most or all bridges being destroyed during the contest!





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POPSICLE STICK BRIDGE BUILDING CONTEST **ENTRY FORM**

TEAM NAME: _____

SCHOOL: _____

CATEGORY (Junior, Intermediate, Senior, or Open): _____

ADULT SPONSOR NAME: _____

ADULT SPONSOR PHONE: _____

(Please Also Indicate Times Available)

TEAM MEMBERS:

NAME (First and Last):	AGE:	GRADE:
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Use 100 of your popsicle sticks and construction paper to build a bridge which will let a small toy car cross a gap of 50 cm, and which will hold as much weight as possible. For complete information, please refer to the contest rules and information sheet.

Categories:

1. **Junior: Grades 4 & 5**
2. **Intermediate: Grades 6, 7 & 8**
3. **Senior: Grades 9, 10, 11 & 12**
4. **Open Category: Teachers, Parents, etc.**

Entry fee per team is \$5.00. Fee is payable when construction supplies are delivered to each school.

****Deadline for sign-up is 4:00 P.M., Friday, February 10, 2006.****

Please Fax Entry Forms to (250) 787- 3219 (Attn: Allan Zackodnik)
Or send to Upper Pine Elementary attn: Christine Zackodnik

PLEASE NOTE: MOST OR ALL BRIDGES WILL BE BROKEN IN TESTING.



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ROCK, FOSSIL AND LANDFORM **IDENTIFICATION WORKSHOP**

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SATURDAY, MARCH 04, 2006, 10:30 A.M. TO 2:30 P.M.

Rocks: Bob Lane, Professional Geoscientist (Geology), Ministry of Energy and Mines and Petroleum Resources, will be available to identify rocks and answer geological related questions. Bob will also be setting up his rock display and a display showing common tools and methods used by the profession for mining exploration and rock identification. Participants at the event can bring in their favorite rocks for identification.

Fossils: Rich McCrea, Palaeontologist, Peace Region Palaeontology Research Centre (Tumbler Ridge Museum Foundation), will be available to identify fossils and answer questions related to: Earth and life through time, fossil forming processes, and fossil classification. Rich will provide a fossil display and microscopes for viewing of microfossils. Participants at the event can bring in their fossils for identification.

Landforms: Brendan Miller, Professional Geoscientist (Geotechnics / Geomorphology), Ministry of Agriculture and Lands, will be available to answer questions regarding landslides, stream processes, and glacial and post-glacial landforms. Brendan will have an air photograph display at the event to provide examples of different landforms and to show how the air photographs are used by the profession.



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LEARNING PRINCIPLES OFFERED BY THE EVENT

To The Sponsor:

This event offers excellent learning value due to the number of different concepts and skills that it exposes the participants to. A number of these are summarized as follows:

Popsicle Stick Bridge Contest:

Engineering - Various practical engineering skills, both technical and non-technical, are involved. This is due to the need to not only come up with a working design that meets specified requirements, but also the need to optimize the design because of limited resources.

Skills and concepts - Non-technical: specifications and regulations, construction materials, economics (size and design versus cost), organization, documentation, project planning, design and design refinement, sample testing, consideration of options, allocation of limited resources

Skills and concepts - Technical: trusses, bracing, shear strength of materials.

Mathematical - The contestants must work with limited materials and deal with problems in length, weight, and three-dimensional geometry.

Skills and concepts: counting, basic math operations, geometry, trigonometry, length and weight measurement.

Physics - A number of physics related concepts can be involved when considering the optimum bridge design while minimizing weight.

Skills and concepts: weight and gravity, tension and compression, moments of rotation, center of gravity.

Thinking - The unique nature of the problem challenges the contestants to apply learned skills as well as to innovate.

Skills and concepts: problem solving, performing applied calculations, intuition, deductive reasoning, creativity.

Social - This exercise helps develop social skills through interaction with other members of the design team and/or through group interaction at the contest.

Skills and concepts: teamwork, cooperation, communication, planning, leadership, consensus.

Basic English and Comprehension - The contestants must review and understand the contest instructions in order to create a bridge that meets the requirements.

Skills and concepts: reading, comprehension, following instructions, technical English.

Rock, Fossil and Landform Identification Workshop:

Geology – A geologist from the Ministry of Energy and Mines and Petroleum Resources will be available at the event to answer geological questions and will provide a rock display and a display of common tools and methods used by the profession. Participants can bring in their favorite rocks to be identified by the geologist.

Skills and concepts: Geological sciences, rock forming processes, rock identification and classification, geological processes.

Palaeontology – A representative of the Peace Region Palaeontology Research Centre (Tumbler Ridge Museum Foundation) will be available at the event to answer questions and will provide a fossil display and microscopes for viewing micro-fossils. Participants can bring in their fossils for identification.

Skills and concepts: Earth and life through time, fossil forming processes, fossil classification, geological processes

Landforms - A geoscientist from the Ministry of Agriculture and Lands will be available at the event to answer questions related to hillslope processes (landslides), stream processes, and glacial and post glacial landforms. A display will also be provided which includes air photographs.

Skills and concepts: Landslides, stream processes, local geological history, air photo interpretation

The Peace River Branch would like feedback from teachers on how we could better integrate the educational opportunities offered by this event into your class curriculum. If you have any suggestions for future events, please forward them to Brendan Miller via email at Brendan.Miller@gov.bc.ca