

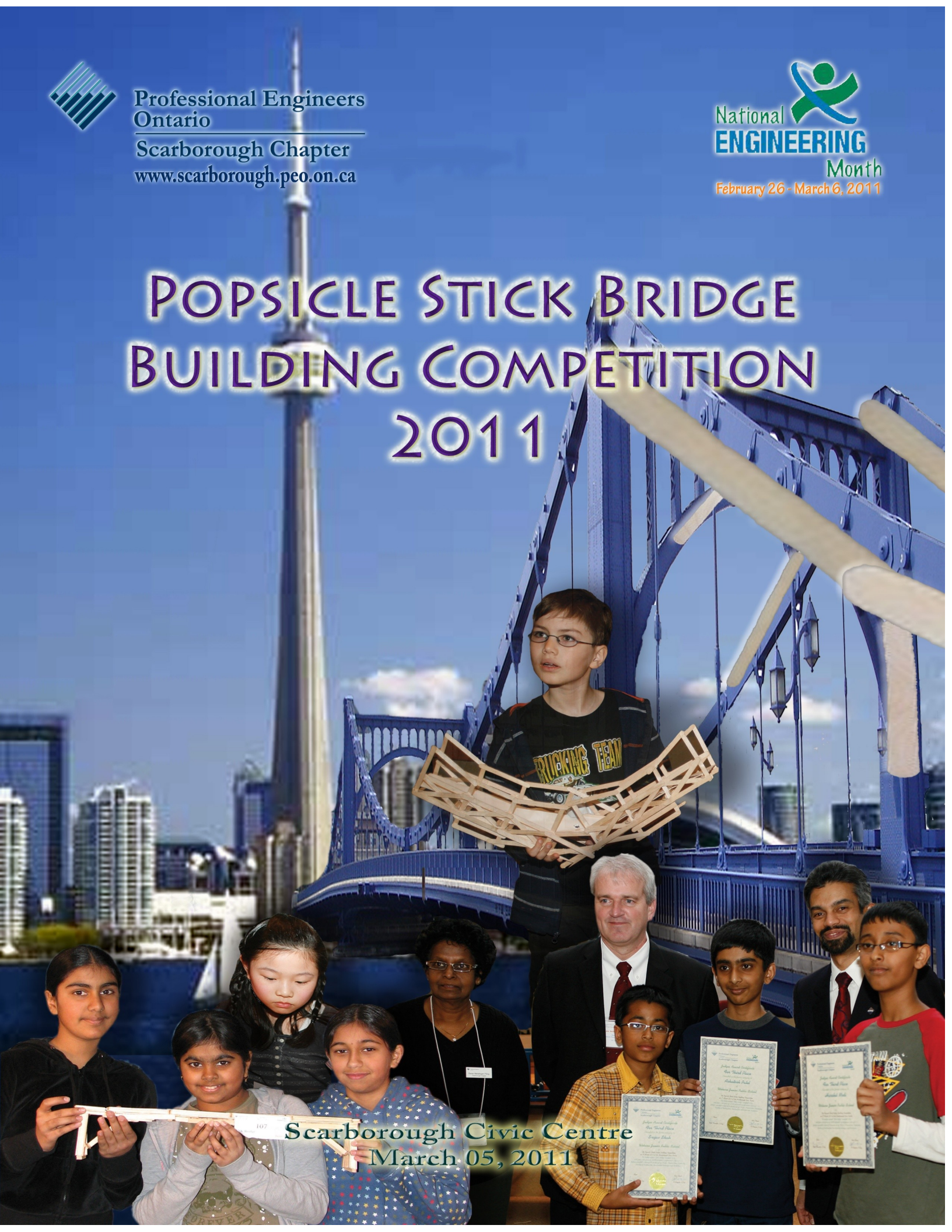


Professional Engineers
Ontario

Scarborough Chapter
www.scarborough.peo.on.ca

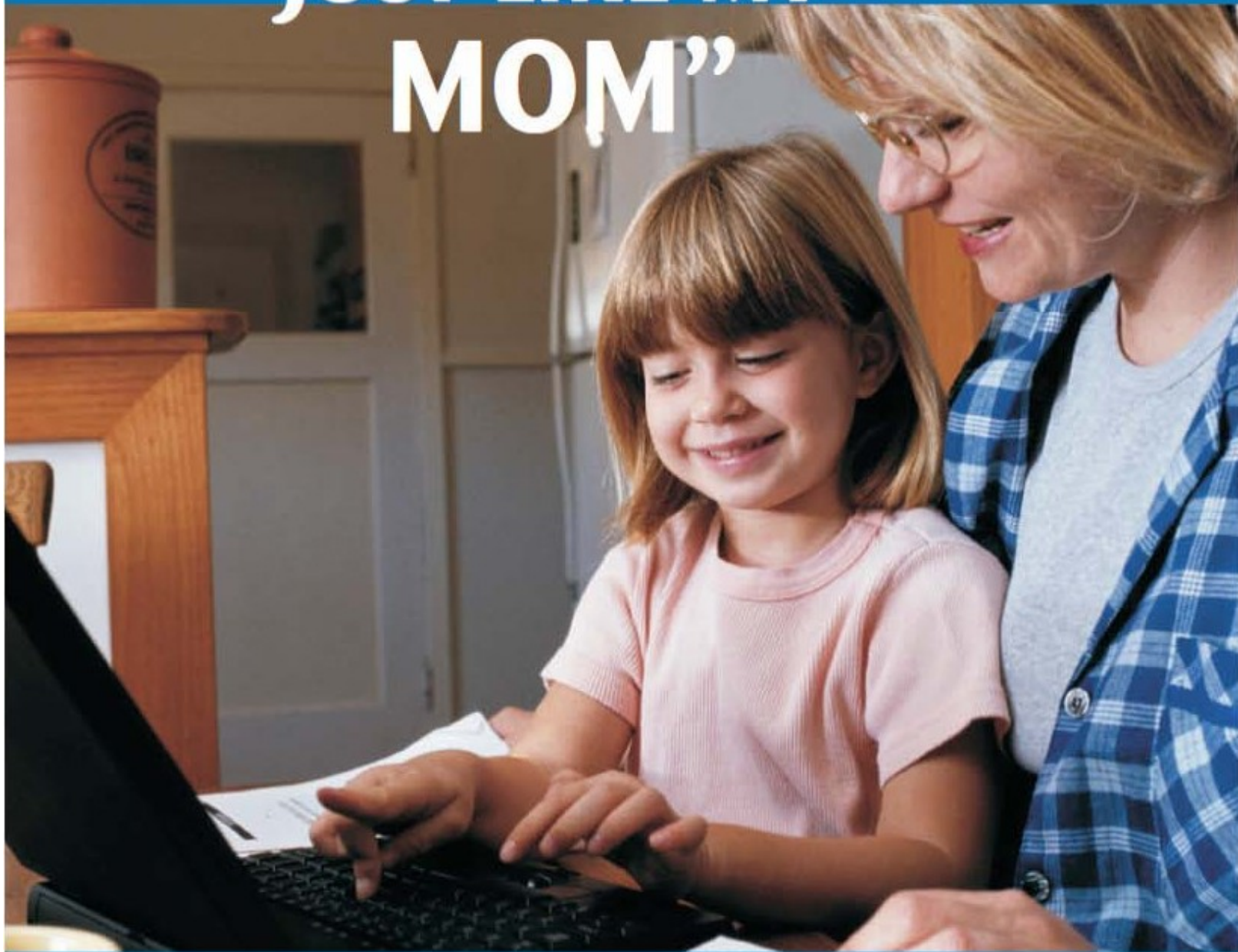
National 
ENGINEERING
Month
February 26 - March 6, 2011

POPSICLE STICK BRIDGE BUILDING COMPETITION 2011



Scarborough Civic Centre
March 05, 2011

**“I WANT TO BE
AN ENGINEER
JUST LIKE MY
MOM”**



**Professional Engineers
Ontario**

For more information on Engineering, please
contact us at: 416-224-1100 or 1-800-339-3716
www.peo.on.ca

Popsicle Stick Bridge Building Competition Scarborough Civic Centre - March 5, 2011

Agenda

- 10.30 AM: Check-in Registration
- 12.00 PM: Introduction - Master of Ceremonies
T. Pompilian
Lipika Saha
- 12.05 PM: Welcome Address - Project Manager
Uthayan Thuraiarah
- 12.10 PM: Briefing of Contest Procedures
- 12.15 PM: Competition Begins
- 3.15 PM: Chapter Chair's Address
Asogan Narayanapillai
- 3.20 PM: Message from Guests
- 3.50 PM: Distribution of Prizes
- Performance Assessment
- 4.20 PM: Special Prizes for Teachers
- 4.30 PM: Group Pictures of Winners
- 5.00PM: Vote of Thanks
Badresh Modi



Distinguished Guests

Hon Chin Lee - Councillor

Scarborough-Rouge River - Ward 41

Hon. Dr. Raymond Cho – Councillor

Scarborough-Rouge River - Ward 42

Eric Yao, P. Eng., Senior Engineer

Ministry of Transportation

Maj.(Ret'd) Corneliu Chisu, M.Eng., P.Eng. FEC

Vice President - PEO

Thomas Chong, M.Sc., P.Eng., PMP

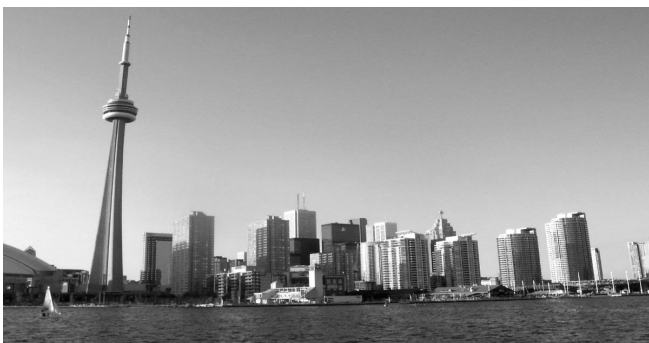
Councillor, PEO

Denis Carlos, MBA., P.Eng., FEC

Councillor, PEO

Dr. Santosh Gupta, PhD., P.Eng., FEC

Councillor - Lieutenant Governor Appointee, PEO



Ministry of Education

Minister

Mowat Block
Queen's Park
Toronto ON M7A 1L2
Telephone (416) 325-2600
Facsimile (416) 325-2608

Ministère de l'Éducation

Ministre

Édifice Mowat
Queen's Park
Toronto ON M7A 1L2
Téléphone (416) 325-2600
Télécopieur (416) 325-2608



March 5, 2011

**To the Participants at the Scarborough Chapter of Professional Engineers
Ontario Eighth Annual Popsicle Stick Building Contest:**

On behalf of the Ministry of Education, I would like to extend my congratulations and very best wishes to all of you who are attending this special event.

The Scarborough Chapter of PEO is to be commended for conducting this contest to make students from grades 3 to 8 even more aware of the engineering profession. I would also like to congratulate all the students who competed in this exacting and interesting challenge, as well as those who supported them.

I offer many thanks to the organizers, sponsors, supporters and community members who have been, and continue to be instrumental in making this event a meaningful celebration.

Sincerely,

A handwritten signature in black ink that reads "Leona Dombrowsky".

Leona Dombrowsky
Minister of Education



**Ministry of
Transportation**

Office of the Minister

Ferguson Block, 3rd Floor
77 Wellesley St. West
Toronto, Ontario
M7A 1Z8
(416) 327-9200
www.mto.gov.on.ca

**Ministère des
Transports**

Bureau du ministre

Édifice Ferguson, 3^e étage
77, rue Wellesley ouest
Toronto (Ontario)
M7A 1Z8
(416) 327-9200
www.mto.gov.on.ca



Congratulations on participating in this year's Popsicle Stick Bridge Building Competition hosted by the Scarborough Chapter of Professional Engineers Ontario. This event is a wonderful opportunity to showcase your team building skills and creativity. It is also an opportunity to have fun!

I am very proud of everyone for participating today. Regardless of the outcome, you should all be commended for your efforts and dedication. In addition, I want to thank the event organizers for all of their hard work and the teachers and parents for their support.

As Minister of Transportation, I wish you the best of luck in today's competition and in your studies.

Sincerely,

A handwritten signature in cursive script that reads "Kathleen Wynne".

Kathleen Wynne
Minister



**Professional Engineers
Ontario**

Scarborough Chapter

DEAR YOUNG BRIDGE BUILDERS OF THE FUTURE,

During the National Engineering Month, the purpose of which is to create awareness of Engineering among school children, the Scarborough Chapter of Professional Engineers Ontario organizes and conducts a contest among school children of Grades 3 to 8, to design and build a bridge using Popsicle Sticks and White Glue.



Over the years of this annual contest, the present one being the 8th, we have seen the imagination and creativity of you all children advancing forward by making stronger bridges every time. Many of you are participating repeatedly which shows that you enjoy playing with Popsicle Sticks and White Glue to put your creative ideas together and use the lessons learnt at previous occasions to improve and construct more efficient bridge and present for evaluation by experts.

In the process of designing and building this model bridge, the children are getting a hands on feel to understand various factors required to create a real three dimensional object as opposed to sketching or drawing only.

Big thanks goes to the Teachers and Parents to have encouraged the children to spend time in constructing an object out of simple material and present to this event, which in turn creates a passion for “Engineering” – a hidden factor in everything we use daily.

On behalf of Professional Engineers Ontario, I wish to congratulate all those who participated in this 8th Bridge Building Contest, thereby proving your potential to become “Great Engineers of Canada” in the future.

N. Asogan, P.Eng.
Chair – Scarborough Chapter - PEO

Another Bridge to Cross

Khushbu Ketan Purohit



A bridge is a structure built to reach one point to another; usually to cross obstacles like a body of water, valley or road. Designs of bridges differ depending on the function of the bridge; the environment of the land where the bridge is made, the material and the resources available to build it. There are six main types of bridges: Beam bridges (The Lake Pontchartrain Causeway in United States), cantilever bridges (The Forth Bridge in the east of Scotland), arch bridges (The Dom Luís Bridge, or Ponte Dom Luís or Ponte Dom Luís, Portugal), Suspension bridges (Rainbow Bridge in Tokyo), cable-stayed bridges (The Millau Viaduct , France) and truss bridges (The Bridge over the River Kwai , Thailand). Beam bridges are mainly used for smaller spans. The strongest type of bridge for short distances is an arch bridge. For medium sized obstacles it is a cable stayed bridge. And for the longest span it is the suspension bridge.

These bridges can be classified by how the forces of tension, compression, bending, torsion and shear are distributed . A bridge's success can be measured by the amount of load carried. A bridge's success will be location and traffic dependent. The life-time cost is composed of materials, labor, machinery, engineering, cost of money, insurance, maintenance, refurbishment, demolition, recycling, replacement, and the rate of remains and reuse of components.

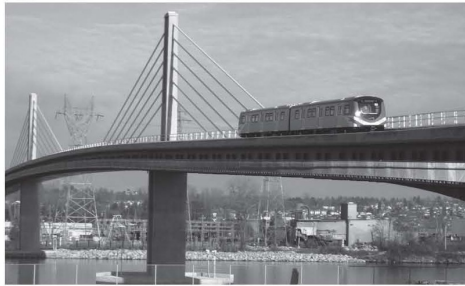
There are also moveable bridges. Movable bridges are generally built over waterways. They build them because it would be impossible or unreasonable to build a fixed bridge high enough for water to pass under it. The most common types of movable bridges are the lifting, bascule, and swing bridges. The Lifting Bridge (famous aerial lift bridge in Duluth, Minnesota) is made of a stiff structure carrying the road. The bascule bridge (The Galata Bridge in Istanbul, Turkey) can be in one length or in two halves meeting at the center. It is made of a stiff structure mounted at the abutment on a straight beam, about which it swings in an upright arc. The swing bridge (famous swing bridge in Belize City) is usually mounted on a pillar in midstream and swung parallel to the stream to allow water passage.

In this essay we learned that:

Bridges are made to reach one point to another. There are six main types of bridges. That each bridge is made to cross a certain distance. These types of bridges can be classified by how they use the five forces. There are also moveable bridges which are built mostly over waterways so that the water can pass underneath the bridges. A bridge's success is its saving compared to the cost of building it




COMMUNITIES
TRANSPORTATION
BUILDINGS
INFRASTRUCTURE



MMM GROUP

MMM GROUP is pleased to support the Scarborough Chapter of PEO and its Bridge Building Competition 2011. Congratulations to all of the participants for their efforts.

MMM Group is Canada's largest integrated planning and infrastructure development firm. For further information or to contact any of our offices, please visit www.mmm.ca



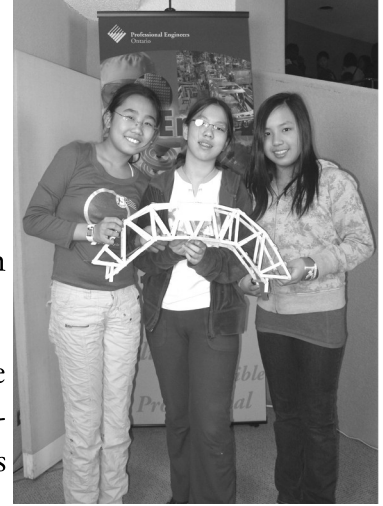
The Contest

- Daphne Yang

Last year's bridge building contest was — Something...

Teams were made. Bridges were built. Troubles were had, and along with those troubles came an amazing experience with friends and competitors.

For me, it started as a science project. I designed an arch bridge with some friends and our teacher, Mr. Johnson, thought it was a great idea. But a problem arose when we realized that creating an arch bridge out of popsicle sticks would be difficult.



We had a slow start, this happened, then that happened, and the next thing we knew, we had a badly made half of the bridge. Apparently, my teammates had faith that the bridge would hold, because I sure didn't. We all figured that entering the contest would be fun. But, of course, if you know my friends and me at all- which you don't- we couldn't enter the same way everyone else did.

The three of us chose the longest name ever- *The Bridge at the Centre of the Universe*. At the contest, they expanded the title margins just for our bridge. We always had this need to be *different*, and to be seen. The name was the backup means for that, if we didn't.

We made the other half of the bridge as badly as the first half; if we didn't, the bridge would be unbalanced. Then we managed to fix both halves of the bridge on the day before contest, put the halves together, and not realize that our bridge had gone over the weight limit until the next day at the contest.

You can probably guess what happened next. We were told that our bridge was too heavy and that we had to cut off material. This took away from part of our design, but the judges believed that our bridge could potentially surpass the first weights. The first thing we did when we were told? We laughed and told everyone that we 'broke the machine'. Or, that we *would* break it, according to the judges.

Boy, were the judges wrong. Our bridge only held about two hundred Newtons. The first machine went to a thousand; the second went higher. Were we humiliated? Not a bit. Okay, I lied. We were, but we laughed through it. We had a great design; we just didn't build it right. We made it to the bottom six of the rulings list.

Still, even though our bridge hadn't done as well as we- well, *they*, being my teammates and teachers- expected- I wasn't expecting to come near winning- we still had an awesome time. We're doing it again this year, and this time, we're going to do it right. The same three of us. This time, we're going to do better than bottom six.

What do these
people have in common?

They're Connected.

ACCES Employment is a leader in connecting employers with qualified employees from diverse backgrounds. More than 15,000 job seekers are served annually at five locations across the Greater Toronto Area. As a not-for-profit charitable corporation, ACCES receives funding from all levels of government, corporate sponsors, various supporters and the United Way of Toronto.

Contact ACCES Employment to hire, inspire, sponsor, donate or participate.

416-921-1800 ext. 2222

acesemployment.ca

Bridge for Tourism

Narayanapillai Asogan, P.Eng

The term “Bridge” gives the immediate reaction as a piece of engineering for crossing a river, a valley etc. mainly connected with transport.

In Canada, at the Western Province – British Columbia, there is a bridge called “Capilano Bridge and is big tourist attraction, and money earner. There are toll bridges where one has to pay to cross by a vehicle. However at this bridge one has to pay to enter a park where the bridge is constructed and the fee includes walking across this bridge.

The original bridge – a suspension bridge was constructed in about 1889 by a Scottish Civil Engineer George Grant Mackay. The bridge was made of Hemp which is a plant fiber. Later it was replaced with a steel wire rope bridge in around 1903.

It spans 136 meters across Capilano River and 70 meters above. The present bridge is made of steel wire ropes, wooden deck with non slippery covering and guarded with wire mesh protection at the sides. Over 800,000 tourists visit the park and the bridge annually.

In addition to this suspension bridge, there are other bridges of wooden construction covering the tree top areas – called “Tree Top Adventure”

It is interesting to see the anchoring system of the Capilano Suspension Bridge and construction of tree top adventure bridges.



Capilano Bridge



Tree Top Adventure



Anchoring of Capilano Bridge





ENGINEERING IS FUN!

THE GOAL: To take down an old bridge and replace it with a new one, on a very busy road.

12-HOUR BRIDGE DEMOLITION



THE SOLUTION: We decided to demolish the existing bridge in a single night while everybody was asleep. We only had 12 hours to do it, but we completed the job just in time!

www.rvanderson.com

R.V. Anderson Associates Limited
 engineering · environment · infrastructure



Howrah Bridge

Popularly known as the Rabindra Setu, Howrah Bridge is an engineering marvel and is counted amongst the busiest cantilever bridge in the World. Observing a daily traffic of about 60,000 vehicles and innumerable pedestrians, Howrah Bridge has equaled its position to Sydney Harbor Bridge. But the later can never dream of such traffic. The bridge spans the Hooghly River in West Bengal, India. The bridge connects Kolkata and Howrah and is the lifeline of the city.

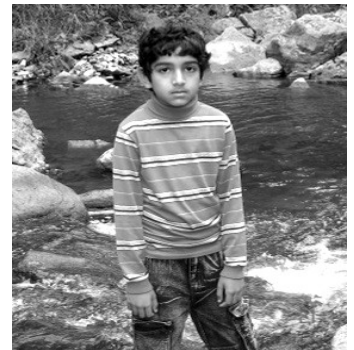
History:

The Old Howrah Bridge, Floating Pontoon Bridge was constructed in 1874. Essentially, it had two portions. For the convenient plying of man and traffic, the pool was connected as a whole. However, the bridge was unfastened every day, particularly during night for steamers, boats and other aquatic vehicles to ply. From 19th August, 1879, the bridge was illuminated by fixing electric poles at the center. This was done by using the electricity rendered from the dynamo at the Mallick Ghat Pumping Station. The Bridge was then 1528 ft. long and 62 ft. wide. On both sides were pavements 7 ft. wide for the sake of pedestrians. The 48 ft. road in between, was for plying of traffic.

The new Howrah Bridge was constructed in 1939 and was opened to traffic in 1943. It was constructed at an approximate cost of Rupees 25 million (INR) (CAN\$45000), and was built from 26,500 tons of steel. It is a Steel Truss Cantilever bridge. Its cantilevers project from piers and are connected by girders. The bridge was erected during World War II to give Allied troops access to the Burmese front, replacing an earlier pontoon bridge that opened to let river traffic through.

Today's Scenario:

The eight-lane bridge carries a steady flow of more than 100 thousand vehicles and 2 million commuters every day. The best way to enjoy its stately beauty is to view it from the middle of the river, a rare stunning beauty; which you have to copy in your mind since photography is strictly prohibited due to security reasons. The ferries running from below Howrah Station are a more convenient way to cross the river and give a good view of the bridge.





HELPING FAMILIES FULFILL THEIR DREAMS!

I admit it, I like closing lots of loans every year. It's what I do.

But what tops that is the happy families behind the loans.

When you need a home loan, I hope you'll put my track record of success to work for you.

Call today with any mortgage questions you might have.

Just Excellent Service!



Marisa Tucci

Mortgage Broker

Mortgage Alliance License#10530

416-821-2218 Direct

marisatucci@rogers.com

www.mortgagealliance.ca/marisatucci





Prize Winners BBC 2010

BBC 2010 Results - Juniors

Bridge Performance

RANK	BRIDGE	SCHOOL	TEAM	SELF WEIGHT (grams)	BREAKING LOAD (N)	PERFORMANCE FACTOR N/gm
1	McKinnon Bridge	McKinnon Public School	Dhyey Bhavsar	259	1490	5.75
2	Olympic Spirit Bridge	North Bridlewood Jr Public School	Thomas Lamanna	258	1280	4.96
3	Mighty Bridge	Churchill Heights Public School	Khushbu Ketan Purohit Veena Samuganthan	291	1220	4.19

Judged for Bridge Building

RANK	BRIDGE	SCHOOL	TEAM	JUDGES MARKS
1	McKinnon Bridge	McKinnon Public School	Dhyey Bhavsar	89
2	Shiv's Bridge	Bellmere Public School	Shiv Patel	87
3	Olympic Spirit Bridge	North Bridlewood Jr Public School	Thomas Lamanna	84
3	Elite Bridge	Woburn Junior Public School	Ashutosh Patel Harshil Modi Srijav Shah	84



BBC 2010 Results - Seniors

Bridge Performance

RANK	BRIDGE	SCHOOL	TEAM	SELF WEIGHT (grams)	BREAKING LOAD (N)	PERFORMANCE FACTOR N/gm
1	Bridge to Nowhere	Gordon A.Brown Middle School	Saeyon Mylvaganam Stuart Craddock Alejandro Schugurensky	215	1190	5.53
2	MDK Bridge	J.B.Tyrrell Senior Public School	Mitch Rondolph Sulte Karthik Sunderraju Daneil Micheal Best	247	1120	4.53
3	Quadruple Way	J.B.Tyrrell Senior Public School	Edward Lu Richard Du	250	1110	4.44

Judged for Bridge Building

RANK	BRIDGE	SCHOOL	TEAM	JUDGES MARKS
1	Quadruple Way	J.B.Tyrrell Senior Public School	Edward Lu Richard Du	93
2	Can-India Bridge	Churchill Heights Public School	Vanshil Shah	90
3	SMCS Spartan Sigma	St Michael's Choir School	Andrew Di Santo Tim Aure	89



Best Wishes

Young Bridge Builders

2011

Dr Pon Sivaji MD FRCPC ABIM



Specialist – Internal Medicine & Critical Care

3430 Finch Avenue East # 205
Scarborough, Ontario, M1W 2R5
Tel: 416 298 0644
Fax: 416 298 4533

1366 Yonge Street # 306
Toronto, Ontario, M4T 3A7
Tel: 416 962 5545
Fax: 416 962 6676

Contestants Juniors

BELLMER JUNIOR PUBLIC SCHOOL

Het

Het

CE Bridge

Dvij Patel

Rushi Patel

Parmin Patel

Om Bridge

Shiv Patel

BERNER TRAIL JR PUBLIC SCHOOL

KST Armour Bridge

Kirushan Yoganathan

Saheb Hussein

Thulasihan Sivarajah

BEVERLY GLEN JR PUBLIC SCHOOL

Kodiak 1

Sara Ensan

Katherine Ching

BRIDLEWOOD JR. PUBLIC SCHOOL

8 Bit Bridge

Nirujan Gnanendran

Andrew Wang

Tom Duan

CEDARWOOD PUBLIC SCHOOL

Rainbow Bridge

Shrijav Shah

CHARLOTTETOWN JPS & CENTENNIAL ROAD JPS

R.E.D. Bridge

Rashad Baksh

David Moffett

Evan Cromien

CHURCHILL HEIGHT PUBLIC SCHOOL

Nisa

Saiyam Patel

Ancient Bridge

Druv Patel

The Golden Bridge

Parth

CORNELL JR. P. SCHOOL

Dragon Bridge

Sarjak Thakkar

CRESTVIEW PUBLIC SCHOOL

Ontario Bridge

Vishwa Patel

Zeal Patel

CUMMER VALLEY MIDDLE SCHOOL

Wooden Magic

Nikola Damjanovic

Stefan Damjanovic

DAVID LEWIS PUBLIC SCHOOL

TBB

Janet Wei

Lan Jing Li

Wonder Bridge

Eva Xie

Destiny

Jolie Wong

Fantasy Flame

Jolie Wong

Michelle Kong

Flying Water Bridge

Michelle Jie Yu Kong

Garden Galaxy

Marley Baker-Wright

Maia Knight

David Lewis Bridge

Jessica Jeng

Lydia Lai

Jr. BELLMERE PUBLIC SCHOOL

Ellisbridge

Zeal

MCKINNON PUBLIC SCHOOL

McKinnon Returns

Dhyey Bhavsar

NORMAN INGRAM PUBLIC SCHOOL

Bridge Makamoo

Devan Srinivasan

Lucas Rodrigues

Daniel Wong

NORTH BENDALE JR. PUBLIC SCHOOL

Bendale Bond Bridge

Dhruv Upadhyah

Contestants Juniors

SATHYA SAI SCHOOL OF CANADA

Master Bridge

Rishi Narevetla
Sathursan Santhirakumar
Sagaanan Ganeshathasan

Quick Silver Bridge

Sai Gayathri Metla
Raman Jain
Anushri Mahadeo

Rainbow Magic Bridge

Shaayini Shanawaz
Krishani Kirubakaran

Starlight Bridge

Lushaa Sarwal
Lakshana Kukanesan

Startrek 2000 Bridge

Keya Patel
Ria Choksi
Sricka Rasathurai

The Dream Team Bridge

Keshava Shaiskandan
Jeshman Sethukavalar
Ajeyram Sricamalan

The Enchanted Bridge

Saiyayishwin Suresh
Ashvinie Paraparan
Abirami Sivakanthan

ST. BERNADETTE CATHOLIC SCHOOL

Tremble

Luke Tremble

The Connector

Ivan Makkar
Mark Gendi

JMA2011

John-Marc Annibale

Super Bridge

Marissa Chanderpaul

Ajax-Ontario

Jessica Zabana

ST. VICTOR

Thunder Bridge

Clairrine Jeganathan
Cassie Antony
Ruuth Antony

T.L.WELLS P.S.

Galaxy Rock

Hareis
Rodrigo

Not yet

Rishi
Rakshan
Nathushan

New York Bridge

Hareis
Rodrigo

WILLIAM G. DAVIS

Inferno Bridge

Ramesh Muruganathan
Esa Shafi

United Bridge

Thivya Muruganathan
Melody Puri
Arathie Muraleetharan

WOBURN JUNIOR PUBLIC SCHOOL

Express Bridge

Pearl Kotwal
Karishma Shan

Testing

Harshil Modi

PEO Awesome Bridge

Nirusha Shanmuganathan
Abhinash Shanmuganathan
Omgaran Uthayakaren

BEVERLY GLEN JR PUBLIC SCHOOL

Kodiak 2

Jack Wang, Jonathan Chan

Kodiak 3

Nicholas Woodrow

Kodiak 4

Tony Luo, Allen Clark,
Andy Zhang.

Contestants - Seniors

BOLTON. C. FALBY

Invincible

Rajeev Patel

BROOKSIDE PUBLIC SCHOOL

Super Duper Dynamic

Aathithan Sivaloganathan

Varunan Sripathybalamuraleetharan

CHURCHILL HEIGHTS SCHOOL

The Maruthi Bridge

Khushbu Ketan Purohit

Hope Bridge

Vanshil Shah

DAVID LEWIS

To be decided

Sunil Sreekanth

Suhas Sreekanth

Dr. Marion Hilliard Senior Public School

Bridge of Hope

Amanee Abid

HENRY HUDSON PUBLIC SCHOOL

Golden Gate Bridge

Ashutosh Patel

Trappers

Mitul Patel

Dhruv Patel

Tran Canadian Bridge

Kunj Patel

Lakkodio Bridge

Vinit Soni

Infinity Power Bridge

Guhaveri Kaneshwaran, Arun Nagarantan

Journey to Crystal Paradise World

Vinit Patel

J.S. WORDSWORTH

Arjun Bridge

Sunny Patel

J.B. TYRRELL SENIOR PUBLIC SCHOOL

Da Bridge

Abeeshan Selvabaskaran

Kevin Wang

B.O.S.S. (Bridge of Superior Strength)

Anojan Gnanendran

Bridge to Tyrrell 2

Fei Wang

Raeesa Hajee

Destiny Awaits

Archsanan Srimurugathan

Thomas Lamanna

Abilash Perinparasa

Hope

Edward Liu

MHT Bridge

Majd Al-Hallak

Henry Xu

Tony Kim

The End of the Rainbow

Nilah Ahimsadasan

Anittha Tharaparan

Rosalai Isernia

The Other Bridge at the Center of the Universe

Daphne Yang

Jennifer Chen

Rosie Chen

The Dark Sausage

Tony Wang

Caitlin Gag

Justin Hui

The Stronghold

Jacky Ha

ROUGE VALLEY PUBLIC SCHOOL

Rouge Bridge

Daenan Gyimah

Jason Moore

Contestants - Seniors

SIR ERNEST MACMILLAN SENIOR PUBLIC SCHOOL

Everlasting

Lakshman Thayaparam,
Mayuren Thurainganathan

ST. VICTOR

The Mighty Bridge

Markus Jaganathan

ZION HTS JHS

Ironic

Hermes Hui
Yiqun Zhang

ST. MICHAEL'S CHOIR SCHOOL

Spartans Bolt

Jacob Brozyna
Levi Morrissy
Gerard Mannella

Spartans Fire

Connor Flannery
David Snowdon
Paul Picotte

Spartans United

Ian Cheong
Michael Avila
Martin Halek

Spartans Wave

Branden Li
Martin Gomes
Adrian Velasco



Review

Anojan Gnanendran

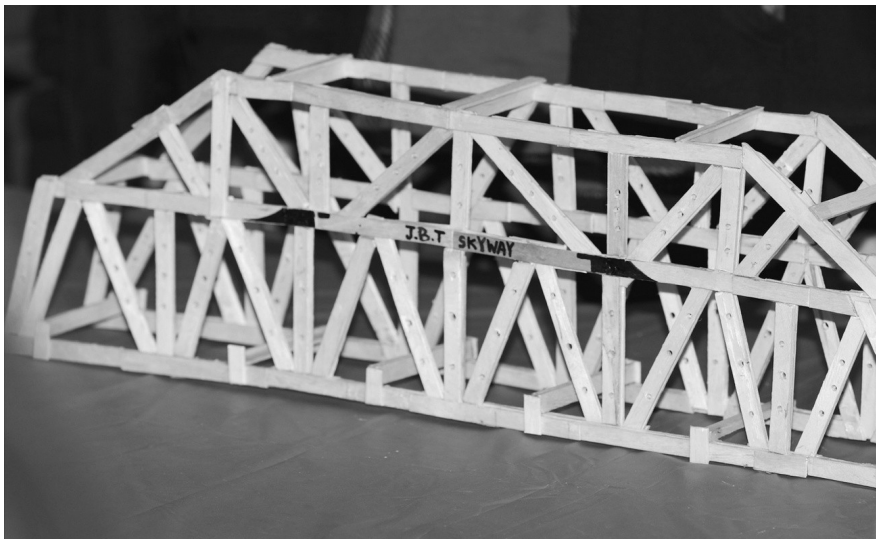
On March 6th 2010, many students and teachers traveled a journey. This journey was to hopefully create our future engineers. The task, create a bridge to impress our present engineer judges with a unique and outstanding bridge, while having a strong performance as well. Students worked day and night in hopes of making one of the best bridges. At the Scarborough Civic Centre that beautiful March morning, students woke up to the succession of their bridges, while nerves were still stirring up in their stomach.

The bridge I decided to make was a typical truss bridge but a double truss with one on top of the other to make it have more strength. It took me days, weeks and months to achieve a bridge like this. As a student, I have always wanted to create a bridge that was able to sustain weight, but soon did I find out that I would be up to the challenge when the PEO bridge building contest came into my life. For my bridge, I used few materials, as it was very difficult to only use white glue, Popsicle sticks, and construction paper. Having this option made it difficult to find strong and force related methods to create my bridge. I found a good method, and that was to create a frame at first. This was a very simple method that created my bridge, the JBT Skyway.

On the day of the contest, I was up against many little engineers. It was quite scary but I was very confident in front of all my competitors. As I competed in the competition, it was outstanding to see how many marks I achieved by the judges. My performance was 370 Newtons, not exactly what I was hoping for but it made me become a better engineer and bridge builder for following years to come.

As a bridge engineer, I learned many things. The first thing I learned is you definitely have to be patient and take your time. Procrastinating in the last week or day does not help your bridge at all. Research many types of strong bridges and then chose what best suits you as an engineer and builder. The last thing is, glue takes time to dry, so be patient!

This is what I learned as a little bridge engineer. I have built the bridge as best as I could last year, but this year, I have come back with a stronger and more unique bridge to win and take home the grand prize.



My Word Search about Bridges

By Vanshil Shah

S	T	B	E	A	M	A	F	G	H	G	M	I	S	N	O	A	H	R	G	L	I	O
Y	O	D	E	F	D	G	C	H	B	I	H	J	G	U	Z	O	X	L	Y	C	P	Y
D	W	A	K	A	S	H	I	K	A	I	K	Y	O	H	S	W	D	Q	Z	E	V	M
N	E	E	I	C	G	C	C	G	S	U	V	W	L	U	T	P	N	B	U	A	K	F
E	R	C	B	H	A	I	A	R	C	H	T	R	D	M	L	U	E	T	B	F	C	I
Y	B	L	A	F	J	N	N	F	U	S	C	B	E	B	I	X	F	N	M	S	H	K
H	R	I	J	K	K	Y	T	T	L	A	U	Q	N	E	K	L	P	W	S	G	E	J
A	I	F	D	E	Z	C	I	I	E	E	D	K	G	R	V	Q	L	T	W	I	J	P
R	D	T	M	B	D	L	L	D	L	X	A	W	A	R	L	S	M	E	I	U	O	Y
B	G	O	A	E	L	C	E	C	Y	E	I	V	T	Y	N	E	H	K	N	L	V	N
O	E	N	G	N	B	M	V	P	U	Z	V	T	E	J	U	Q	S	N	G	I	M	W
U	H	A	C	A	B	L	E	V	N	W	O	E	B	T	P	R	Z	O	O	N	U	X
R	U	I	P	Z	V	Y	R	S	X	O	Y	T	R	S	A	R	Q	P	R	W	X	M

Words:

AKASHI KAIKYO
ARCH
BASCULE
BEAM

CABLE
CANTILEVER
CLIFTON
GOLDEN GATE

HUMBER
MILLENIUM
SUSPENSION
SWING

SYDNEY HARBOUR
TOWER BRIDGE
TYNE
VIADUCT

Answers see page - 27

Thinking of Real Estate

Buying or Selling

Your Home could be worth more than you think!
"List your Home with a professional and save money"

- ❖ Free market evaluation.
- ❖ Flexible Commission.
- ❖ Excellent personalized service and guaranteed results.
- ❖ Building inspector, Lawyer referrals.
- ❖ Mortgage arrangements.
- ❖ For professional, friendly and courteous real estate service, call *Ken*.
- ❖ Call *Ken* for information on homes available in area of your choice



Red Carpet Royal Realty Ltd Brokerage

Realtor Member, Independently Owned & Operated

Office: 416-284 5555 Dir: 416- 566 0595

880 Ellesmere Road, Suite 204, Toronto, ON. M1P 2W6 E-mail: kenmuruga@trebnet.com

Ken Muruganathan, E.I.T

Sales Representative

Bridging the Gap

Amanee Abid

A bridge is a structure built to overcome physical obstacles. Engineers build bridges spanning across valleys, rivers and seas. But for our CNN hero it's much more.

Harmon Parker was a bricklayer who became a master mason early in his life. An average man until his life took an unexpected turn when he visited the African continent.

As an active Christian Development Worker, Harmon Parker understood the needs of the people of Kenya. This led him to build bridges for the poorest of communities.

To Parker bridges meant that children could attend school and have a brighter future. His most notable contribution was when he saw the dangerous river crossings Kenyans used to attend markets, healthcare clinics and to visit families in other villages .Many people lost their lives before Parkers efforts. With his decision made, he built a stable bridge to meet all their needs.

As the demand for more bridges grew .he founded a non-profit organization called “Bridging the Gap” in 2003 to construct footbridges to keep these people, especially children and women, out of the treacherous rivers. In 2010 he was acknowledged for his efforts by being selected as a CNN hero.

Aside from that Harmon Parker has shown a truly remarkable quality, the ability to give and ask for nothing in return. Harmon Parker is a husband and a father and balances his role with his family and the Kenyans with ease. Rome wasn't built in a day, so wasn't any one of Harmon Parker's bridges. He worked tirelessly day after day along with his fellow neighboring Kenyans. now ...its up to you to bridge your gap !



Harmon Parker



One of Harmon's bridges



Bridges

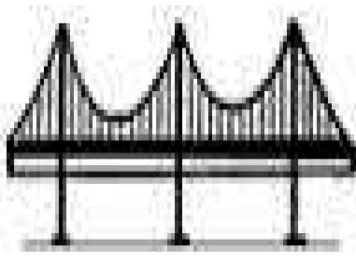


Vanshil Shah

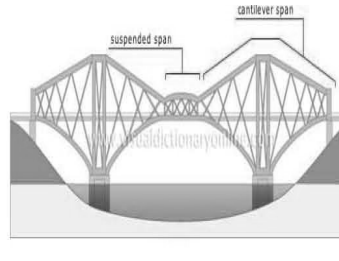
Did you know that triangles are the strongest shapes in the world! Many bridges across the world are built to resemble triangles. What is a bridge? Why are they crucial to us? Well to begin, a bridge is anything that fills a gap from one area to another. Bridges are crucial to us because they help us adapt and conquer terrain difficulties that we cross when building roads or paths. All bridges include a deck. The “deck” of the bridge is the part that people walk/ drive on. *There are four major types of bridges:*



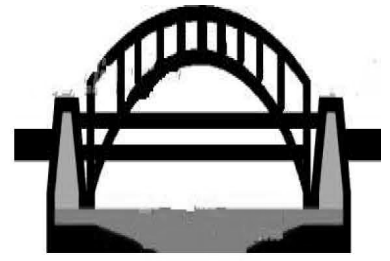
Truss Bridge



Suspension Bridge



Cantilever Bridge



Arch Bridge

One of the most common and simplest types of bridge is the **truss bridge**. As seen in the image this bridge is basically made up of triangles with cross sections that connect it together. Truss bridges are made of straight elements that take tension, the shape that the straight elements are arranged in are vital and this is where the triangle becomes a part.

Another type of bridge is the **suspension bridge**. Suspension bridges get their name from the design of the bridge. A suspension bridge is made up of a series of poles that have long cables hanging in between them. Hanging from these cables are more cables from which the bridge deck is suspended. Any weight or strain put on the bridge relies on the cables thus the name of the bridge: suspension bridge.

The third most common type of bridge is the **cantilever bridge**. The principle behind the cantilever bridge is to balance weight with counter balances. The image left shows how the man in the middle is balanced with the use of counter weights. The image resembles a cantilever bridge and how it works.

Finally there are **arch bridges**. An arch bridge takes the load put upon it and transfers it to the sides of the bridge. Arch bridges were used in ancient history by the Romans. Arch bridges have great structural efficiency which is probably why people in ancient history used them. A bridge with good structural efficiency is good because it means it weighs less but is still quite powerful.



Bridges have been used in our generation in the past and will continue to be a part of our lives in the future. So help mankind preserve these wonderful creations by entering the P.E.O. Bridge Building Competition annually!

Volunteers - BBC 2011

Project Manager

Uthayan Thurairajah

Registration

Bhadresh Modi

Augustine D'Souza

Murad Hussain

William. A. Dale

Judging

Raji Puthurath

Peter Hulley

Souvenir, Media Communication

Maria D'Souza

Abid Syed

Curtis Cheam

Pompillian Tofilescu

Rakesh Shah

Computer Networking

Vjayanthi Chander

Chhaya Vijay Arabastani

David Dias

Jonathan D'Souza

Inspection/Testing

Jega Jeganathan

Arul Thiagarajah

Maha Mahalingam

Raju Chander

Photo/Video

Madu Suthanan

Naren-Mylavaganam

Rakesh Shah

General

Parvez Akhtar

Kiran Patel

Ashishkumar Patel

Gayathri Kunaratnam

Bala Balasingam

Master of ceremony

Lipika Saha

Pompillian Tofilescu

PEO Scarborough Chapter

Board Of Executives 2011

N. Asogan, P. Eng. - Chair

Ranee Mahalingam. M. Eng., P. Eng. - Vice Chair

Raju Chander, MS. P. Eng. - Past Chair

Uthayan Thurairajah, MSc, P. Eng. - Secretary

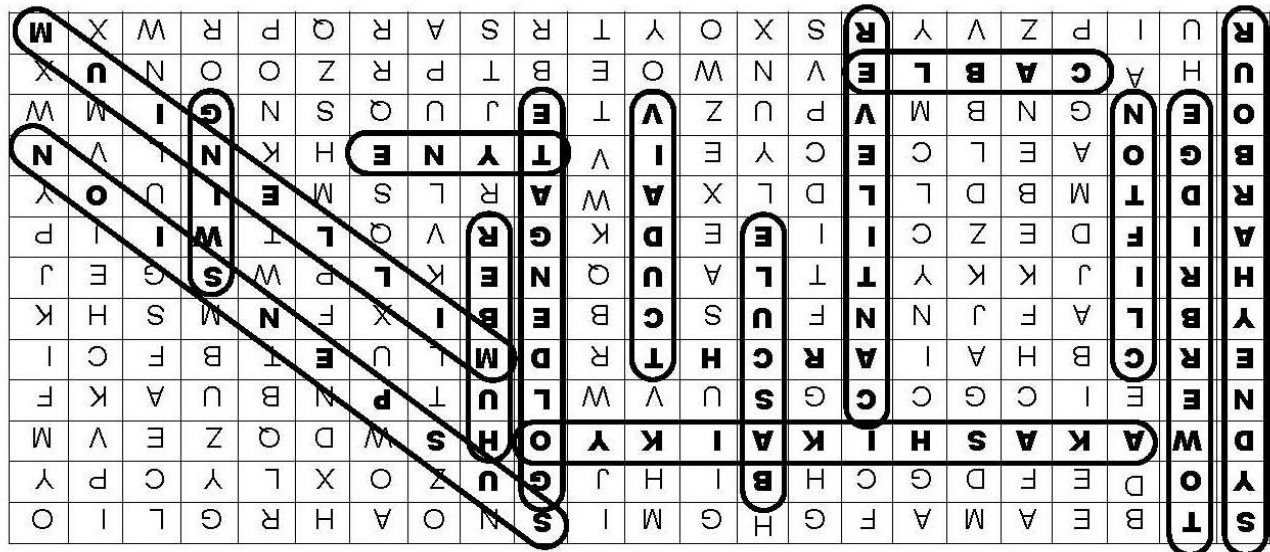
Murad Hussain, P. Eng. - Treasurer

Pompilian Tofilesco, EIT - Executive

Parvez Akhtar, EIT - Executive

Jega Jeganathan, P. Eng. - Executive

Alireza Shamshiri, EIT - Executive



My Word Search about Bridges - Solution

Answers for word search:

PEO Scarborough Chapter

Thanks. . .

Judges – BBC 2011

Karan Singh, P.Eng.
Muslim Pardhan, P.Eng.
Ayvun Jeganathan, P.Eng.
Subohi Obaid, P.Eng.
Raju Chander, P.Eng.
Clifford Lam, Ph.D., P.Eng.
Georg Kralik, P.Eng.
Lambert Philadelphia , CET.
Maged Ibrahim, M.A.Sc., P.Eng.
Mehdi Zanganeh, M.A.Sc., P.Eng.

Souvenir Sponsors

Professional Engineers Ontario
ACCES Employment
Red Carpet Royal Reality Ltd. Brokerage
MMM Group Limited
Children's Education Fund Inc
Dr. Pon Sivaji
Ontario Society of Professional Engineers
R V Anderson Associates Limited
Marisa Tucci - Mortgage Broker

Printers

Apex Creations

Special Thanks

Cover page design contribution
Devanshi Shah - Grade 11 - Woburn C. I.

Cover page and layout contribution
Imthiaz Ahamed - Grade 9 - Lester. B. Pearson C. I.

**SECURE YOUR CHILD'S FUTURE WITH ONE OF CANADA'S
MOST FLEXIBLE AND INNOVATIVE REGISTERED EDUCATION SAVINGS PLANS**



CHILDREN'S EDUCATION FUNDS INC.

Offers

A VERY DIFFERENT GROUP OF RESPs

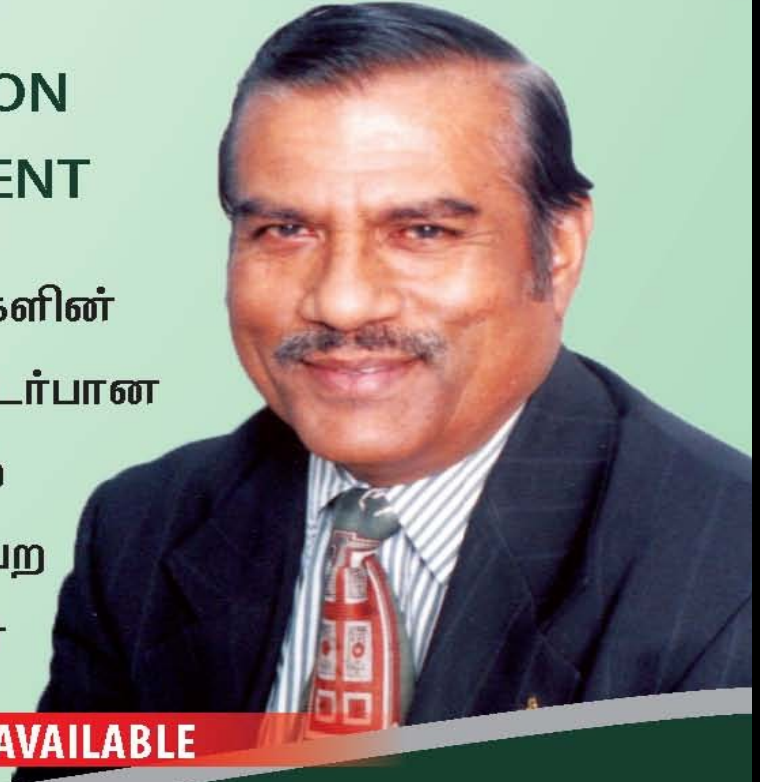
NURTURE
THE DREAM

Many Good Reasons to Get Started with US !!

- ✓ SAFE, SECURE AND ONE OF THE MOST FLEXIBLE PLANS
- ✓ HIGHEST SCHOLARSHIPS PAID 14 YEARS IN A ROW
- ✓ GET AIR MILES[®] REWARD MILES WITH CET
- ✓ ASK US ABOUT THE CANADA LEARNING BOND AND ENHANCED CESG

**FOR MORE INFORMATION
IN DETAIL & APPOINTMENT**

உங்கள் பிள்ளைச் செல்வங்களின்
மேற்கல்விக்கான நிதியம் தொடர்பான
சிறந்த சேவைகளையும்
ஆலோசனைகளையும் பெற
தொடர்பு கொள்ளுங்கள்



CAREER OPPORTUNITIES ALSO AVAILABLE

SIVA KANAPATHYPILLAI

Branch Manager
Dealing Representative

OFF: 416.438.0660

CELL: 416.899.6044 | RES: 905.472.1139 | Fax: 416.438.8532

s.kanapathypillai@cefi.ca

2100 Ellesmere Rd, Unit #307 Scarborough ON. M1H 3B7



ONTARIO
SOCIETY
OF PROFESSIONAL
ENGINEERS

Engineering a better world

**Leading-edge technologies.
World-class healthcare.
A safe, secure environment.**

These are just a few of things that give Ontarians an exceptional quality of life. And just a few of the things made possible by Ontario's engineers.

As the voice of our profession across the province, the Ontario Society of Professional Engineers is proud to celebrate the outstanding achievements of all engineers - during National Engineering Month and every day.

Learn more. Join today.

www.ospe.on.ca