



Professional Engineers
Ontario

Scarborough Chapter

www.scarborough.peo.on.ca



www.new-sng.com

Presents

Popsicle Stick



Contest

Scarborough Civic Centre
4 March, 2006



advocalcy

Advocacy takes many forms.

For us, at the Ontario Society of Professional Engineers (OSPE) it's about support. Vocal support designed to help you and your profession. That's why we are a separate and distinct organization from the PEO. While one regulates, we advocate. So, if you believe that issues like the adoption of Qualifications-Based Selection (QBS) can lead to enhanced engineers' salaries, or P.Engs should not have to write exams to get "certified" to clean up Brownfields, or P.Engs should be leading the discussions on safe water for Ontarians, then you need to add your voice to the cause. Visit www.ospe.on.ca today and join the thousands of engineers like you, who believe the more voices we have, the more we will be heard. Advocacy works. And it starts here...



ONTARIO
SOCIETY
OF PROFESSIONAL
ENGINEERS

THE VOICE OF ONTARIO'S PROFESSIONAL ENGINEERS



4th March 2006

Greetings to all would-be-engineers
From the President of Professional Engineers Ontario
Bob Goodings P.Eng.,

Dear Grade Three to Grade Eight Contestants:

You are today taking part in a great personal experiment – the creation of a real live miniature engineering structure that requires from you the best of your imagination, creativity and ingenuity.

You and I, and all our friends take for granted the safety of full size bridge structures we see every day. Bridges are vital in our world, beginning when man first started to travel over rivers and ravines. You have an advantage over the first bridge builders, you have seen them being built and see that they work just fine.

In your planning you will figure out how the structure can span the crossing, hold its own dead weight and then carry a model of truck or a weight without crashing. Popsicle sticks are just like steel beams and girders that when placed in a certain pattern they will do what the contest asks of you – holding a weight or carrying a truck across a river.

Well, this is one example of one of the most important things in our modern world, engineering design. Not all engineering is bridge building. The lessons you learn from this fun contest are a part of letting you know about the engineering method. – Teamwork, clear ideas and ingenuity along with mathematics and other things you learn at school. Engineers work hard but do have fun and have lots of satisfaction about their accomplishments for the safety of our families and friends. Today, you are practicing engineering. Tomorrow you may be an engineer.

You are also fortunate in having a great group of people who have planned this day. They include your teachers, the sponsors and many engineers who belong to the Scarborough Chapter of Professional Engineers.

I say you are lucky people!

Good luck and good bridge designing!

A handwritten signature in black ink that reads "Bob Goodings". The signature is fluid and cursive, with a prominent loop at the end.

Bob Goodings P.Eng.,
President PEO



Professional Engineers
Ontario

Scarborough Chapter

March 4, 2006

Dear participating students, teachers and parents:

I have the pleasure to welcome each and every one of you to our Popsicle Stick Bridge Building Competition, 2006. This is the third time that Professional Engineers Ontario, Scarborough Chapter is hosting this event for the benefit of our students.

One of the goals of Scarborough Chapter is to promote public awareness for the engineering profession in our community. The Competition challenges the intuitive and constructive minds of students. This event organized to promote engineering education as a career choice among junior students as well as creativeness and team building, while having fun.

In a real life situation, building a bridge would require years of data collection, detailed analysis, design and construction. Through this event we provide an opportunity for the students to visualize and understand a problem, analyze and build a high performance bridge using simple Popsicle sticks. We at PEO believe, that this would encourage analytical and problem solving skills at an early age.

We started the event in 2004 with just twelve teams. Last year we ran the competition with some 54 teams. This year the response was overwhelming. Due to space limitations, we had to limit the number of teams to 88 and turned down over 25 registrations.

An event like this requires numerous hours of planning and organizations. I would like to take this opportunity to thank the PEO Scarborough Chapter Bridge Building Committee members for their volunteerism; teachers for your guidance; and students for your participation.

Yours sincerely,

A handwritten signature in black ink that reads "Rane Mahalingam". The signature is written in a cursive style and is underlined.

Ranee Mahalingam, M.Eng., P.Eng,
Chair, PEO Scarborough Chapter
raneemahalingam@rogers.com



Brad Duguid, M.P.P.

Scarborough Centre
777 Bay Street, 17th Floor
Toronto, Ontario M5G 2E5
(416) 585-6683



March 4, 2006

Dear Participants;

Welcome to the 3rd Annual Popsicle Stick Bridge Building Competition sponsored by Professional Engineers of Ontario, Scarborough Chapter. As the Member of Provincial Parliament for Scarborough Centre, I'd like to welcome you to my riding and the Scarborough Civic Centre. Having seen many of the submissions on the PEO website from 2005, I can tell you how excited I am to be able to take part in today's events. I look forward to seeing many creative designs brought forward.

Seeing bridges built out of Popsicle sticks, I am reminded of the story behind the "Iron Ring" that Professional Engineers wear on their pinky finger. Many of you may not know the story, but Engineers across Canada wear their "Iron Ring" in remembrance of a bridge built in Quebec that buckled under the weight of a train, killing 75. The second attempt to build the bridge resulted in more deaths, and it was not until the third time it was successfully done. The popular legend tells us that the rings worn by Engineers like those from Professional Engineers of Ontario, Scarborough Chapter are made from a beam recovered from that bridge. The ring represents the responsibility Engineers have, to undertake their work with high standards of professionalism, and to remind them that the work they do affects the lives of all of us.

The Popsicle Stick Bridge Building Competition is a fun event that brings students close to a very exciting profession. While you may find building a bridge out of popsicle sticks difficult, it is a true testament to the hard work carried out by engineers on a daily basis that make our lives so liveable in a modern city. A few months ago I was honoured to be able to present certificates to new engineers at the Professional Engineers of Ontario's Certificate Presentation Ceremony. The diversity of talents and ability shown by its members is truly incredible. Perhaps at today's event, many students will find role models that will encourage them to consider engineering as a profession as well. I would like to thank the members from the Professional Engineers of Ontario, Scarborough Chapter for creating this opportunity to educate young people about their profession. This is the third time the Professional Engineers of Ontario, Scarborough Chapter has sponsored this competition, and each year it seems to grow getting more and more impressive. I look forward to seeing many of the creations you've brought here today.

Sincerely,

A handwritten signature in black ink that reads "Brad Duguid".

Brad Duguid, MPP
Scarborough Centre

Dear contestants:

The event you participate in today is the result of a team effort of many dedicated volunteers.

Back in 2004, the first time we ran this competition, we were told the night before the event that we could not have the public address (P.A.) system switched on. So, we looked through our basements and improvised. Using an old laptop power supply, a car graphic equalizer and various connectors, all put into a shoe box, we created an amplifier. Someone contributed their home stereo speakers and another lent us a microphone. A few more cables and we had a serviceable P.A. system! Now we could start!



Then came the heavy lifting. Literally; because we tested the bridges with weight-lifters weights. We had to do a lot of lifting into and out of milk-crates and yes, it was slow and tiring. The students, teachers and parents who came to this first event were happy, and we were encouraged. We resolved to do better next year.

There are many, many children in Toronto. Hundreds of you want to play this game! If we do not want to disappoint most of you, we have to work faster, much faster. How can we be quick, accurate and, I forgot to mention, without spending big \$MONEY\$. After all, you do want some prizes, right?



For 2005, we began planning in 2004. We identified the items that slowed us down.

#1 was the testing process. We designed and built the machine you see here today. It looks good, is strong, not too heavy, easy to use, accurate, and most of all, *FAST*.

#2 was how to manage so many people. Registering, tracking, scoring, displaying results, printing certificates. A great job for computers. But computers need software.

And both are very expensive to buy. The hardware problem was solved by begging and borrowing laptops from everyone we knew. But, we could not afford to spend thousands of dollars on software. Instead we relied on the efforts of thousands of generous programmers who developed Open Source software. Using the **Linux** operating system, the largest web server in the world **Apache**, a powerful database **MySQL**, and the versatile scripting language **PHP** we wrote our own web based application. Here you see a full local area network, with wired and wireless networks, firewalls and routers, setup in just over an hour and running on little laptops.



#3 All these high-tech toys are nice, but to get everything and everyone to work together, we need management tools. Project planning, process flow, meetings, budgeting, organizing, talking or rather communicating are essential. Because many people have to work together. This is a big job. Lots of skills are required. We learn a lot. Yes, learning doesn't stop when you leave school; it is just the beginning.

So, my advice to you is to remember what volunteers have done for you. When you grow up and can help someone else, please do. We had fun creating this competition for you. I hope you have a good time too.

Denis Carlos

Denis Carlos, MBA., P. Eng.
Past Chair
PEO, Scarborough Chapter



Professional Engineers
Ontario
Scarborough Chapter

Dear Participants:

Welcome to our annual Popsicle Stick Bridge Building Competition. I am very excited to see the enthusiasm, talent and creativity displayed by the contestants and the inspiration and support provided by the schools, teachers, parents as well as the event sponsors. I congratulate and thank all of you for making this event a big success.

Trained as a Civil Engineer, I have designed and built several bridge structures. But, when I watch the youngsters, who without any formal training intuitively apply the engineering principles to design an efficient bridge, I feel very proud. I applaud the ingenuity and creativity of these potential engineers.

Engineers play a very significant role in our daily lives. The amenities that we take for granted such as electricity, fuel, transport vehicles, machines, medical equipment and so on, are all engineer's creation. For ages, engineers have quietly worked in the background contributing to the well-being and progress of man kind. What a noble profession!!!

I hope this event is fun as well as a learning experience for our youngsters and instills in them an affinity for engineering. I encourage them to consider adopting this noble profession as career.

Santosh K. Gupta Ph.D., P. Eng.
Vice- Chair,
Scarborough Chapter
Professional Engineers Ontario.



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Popsicle Stick Bridge Building Competition

A Success Story
by
PEO Scarborough Chapter

One of the goals of Scarborough Chapter is to promote public awareness of the engineering profession in our community. In connecting with our community, we help licence holders participate in Chapter and PEO activities and recognize individuals and firms for their support of our profession. One example is our annual Bridge Building Competition. We started our first event in 2004 with a small group of schools. With the experience we gained, we can now confidently plan, organize and implement a large-scale event with hundreds of participants.

This Bridge Building Competition challenges the intuitive and constructive minds of children. This event was organized to promote awareness of an engineering education as a career choice among junior students as well as creativeness and team building while having fun.

March 2005 Event

The second Popsicle Stick Bridge Building Competition was held on Saturday, 5th March 2005 at the Scarborough Civic Centre, Council Chambers. 54 teams and bridges from 18 schools, totalling about 238 students in grade 3-8 participated, and 350 to 400 people attended this event. Each bridge entry was designed and constructed before being brought to the contest. The bridges were required to be made of ordinary Popsicle sticks and weigh less than 300 grams. The bridges were judged by the following criteria; presentation, creativity, construction quality, construction technique and aesthetics. The bridges were then tested to destruction to determine the maximum load bearing capability. The bridge constructed by the St. Gabriel Lalemant Catholic School won the first prize with a bridge that weighed 293 grams and the bridge withstood a load of 1,340 Newtons.

Top three teams were given awards. Full colour certificates were personalized with the student's name, school's name, along with the judges' marks and load test results for the individual bridge.

Testing Machine

To conduct this competition, a custom designed bridge testing machine was designed by Arul Thiagarajah, Charles Fernandes and Scott Dempster and built with scrap material. In contrast to other testing machines, this machine was designed to be portable and fast, without messy hydraulic systems. A strain gauge connected to digital instrumentation was used to measure the peak force with precision. 54 bridges were tested in a matter of 20 minutes.



Computer Network

To effectively process 240 students in a short period of time, Denis Carlos created a unique computer network program. The process of registration, photography, inspection, judging, load testing and certificate printing were handled at stations equipped with notebook computers. Three large projection screens provided the audience with the following information: a live view of the destructive testing, a real time display of the current team and performance rankings, sponsor and volunteer information, and the queuing order to organize the team flow.

This arrangement was designed to organize the flow of competitors efficiently and involve the 350 strong audience so that they could follow the excitement and cheer the contestants. The live video and real time performance ranking kept the interest and excitement at a high level. To keep the costs of this computer system within this project's budget, our Chapter Chair designed this computer program using only free open source tools. Ten notebook computers were borrowed from a variety of sources and were connected to a web server through a wired and wireless network. An Internet browser was the only requirement, so a volunteer could come in with his/her laptop, join the network and begin by simply using an Internet browser.

Volunteers

The competition began with registration at 11:30 am and ended with the certificate presentation ceremony at 3:30 pm. The event was captured by the CTV evening news. The incredible teamwork of PEO Scarborough Chapter volunteers made this competition a tremendous success!

This success was a result of improvements gained from the experiences of 2004.



One of the teachers, Mr. David Lam, grade 5 teacher at St. Gabriel Lalemant Catholic School said:

“The competition provided a great culminating activity to a science unit in the Structures and Mechanisms strand in the Ontario curriculum. It was a fun learning experience that exposed them directly to the engineering field. Thank you for organizing a successful and exciting event”

This is what one of the students said: *“On Saturday the bridges were competitive. Most of them were strong, really strong. When our team’s bridge went up I was crossing my fingers for good luck but it didn’t really help. Too bad, we only got 140 N but our classmates did better.”*

May 2004 Event

This pilot event began with just nine schools with twelve teams. The total number of attendees including parents, students, teachers and engineering mentors was about 100.

Each bridge entry was designed and constructed before being brought to the final contest. The bridges were required to be made of only materials provided by the PEO Scarborough Chapter such as 200 ordinary Popsicle sticks, regular white all purpose glue and construction paper as the roadway. Other bridge specifications and contest rules were provided for each competing team. The bridges were then judged according to their greatest load-to-weight ratio, aesthetics, and a brief interview by the panel of judges about its overall construction.

Testing Device

Each bridge was tested by manually loading weights, one by one. It took some 90 minutes to test all 12 bridges at two testing stations. It was fun but labour intensive. The time taken for this activity was identified as a

bottleneck. Learning from this, we decide to mechanize this activity for 2005, which resulted in the creation of our current testing machine. The current Scarborough Chapter Bridge Testing Machine is light, sturdy, portable and fast.

Registration for the contest started at 12:30 p.m. to 1:30 p.m. followed by a photo

shoot of each team with their respective entries. Prior to strength testing, judges selected the most eye-catching design entries from different divisions then weighed for final judging.

The awards and recognition ceremony ended at 4:30 p.m.

Representatives from media such as the Scarborough Mirror and Bluffs Monitor attended the event and published their stories in The Bluffs Monitor local newspaper published an article in its August 2004 issue.



March 2006 Event

The Scarborough Chapter is planning to repeat the event on Saturday 4th March 2006, during National Engineering Week, at the Scarborough Civic Centre. It is anticipated that the quality of the bridges to be tested by the machine would be higher than the ones submitted in earlier years. The chapter volunteers are in the process of upgrading the testing machine to cater for the increased vertical and horizontal loads.

The chapter is also raising funds for the event through advertising businesses in a magazine.

Political members of the Provincial Legislature and Municipal government are invited as special guests along with senior members of the PEO and OSPE.

Summary

The reason we are able to run large events successfully year after year is because we have implemented several managerial tools. We document our activities, run efficient meetings, prepare and follow a project plan and budget, conduct post event reviews, create SOPs; in short, learn from our experiences.

Our volunteers learn valuable practical skills (that are not taught in engineering schools), which are of critical importance to progress in their careers. In this way we enhance the professional development, competency, and social responsibility of professional engineers.

BRIDGE BUILDING CONTESTANTS - 2006

as of 20th February, 2006

School: Elia Middle School		Grade: Junior	Teacher/contact: Mr. Baljinder Singh
Bridge name	Student #1	Student #2	Student #3
<i>The Apolloplex bridge</i>	Linda Chen	Cammi Huynh	Christine Diep
<i>The Lionsgate bridge</i>	Sherry Lay	Darwin Thach	Omesh Paul
<i>The Megaplex bridge</i>	Vicky La	Ayesha Nisar	Sarah Ngov
<i>The Superplex bridge</i>	Aakash Goel	Alan Troung	Janarthanan Jeyaseelan
School: Henry Hudson Senior P. S.		Grade: Senior	Teacher/contact: Nahed Abdel Nour
<i>Bridge Tiara</i>	Abby Sivalingam	Zahraa Chorghay	
<i>Crossover Bridge</i>	Lavan Kandiah		
<i>Le Pont Entralace</i>	Karthi K . Kanagasabai	Yadavan Pathmanathan	
<i>Mountian Top Bridge</i>	Nelluxon Rajenteran	Karsin Lam	Sajeethan Kandeegan
<i>Rainbow Colony</i>	Sajeetha Sivasooriyan	Gayathri Rajan	Bharathy Ahileswaran
<i>SkyWalker</i>	Niryan Parameswaran	Tristan Poon	Harindra Rajasekeran
<i>The Canadian</i>	Kajeevan Anantharajah	Sayan Patel	
<i>The Citizen</i>	Harsh Shah	Aamir Munshi	William Razmy
<i>The GauMan</i>	Gaurav Sharma	Mandekh S . Hussein	
<i>The Monkey bridge</i>	Anjalie Shivakumar	Soundarya Selvam	
<i>The Nerwin</i>	Alexandra Witteimer	Renee Taylor	
<i>The Three Musketers</i>	Asha Chaudhary	Avani Mehta	Priyanka P. Kumar
<i>Trio-SAC bridge</i>	Shayini Balakumar	Camellia Dinyarian	Ayesha Khan
School: J.B. Tyrrell S.P.S.		Grade: Senior	Teacher/contact: Wilberforce Johnson
<i>Bridge Cross Over</i>	Hilary Hung	Sanjana Negi	Sherry Du
<i>Freedom Ship</i>	John Liu	Enoch Tieu	Peter Geng
<i>Grand Bridge Tower</i>	Juliet Shao	Grace Tran	Minbo Bai
<i>Longhorn Vista Beta</i>	Bill Li	Yihui Zhang	Mithulan Perinpanayagam
<i>Perfectly Made Structure</i>	Angela Li	Denice Lam	Helen Lu
<i>Suicide Bridge</i>	Kelvin Luu	Vinoth Sunthareswaran	Robert Loganathan
<i>The Everlasting</i>	Alice Kwong	Elaine Leung	Amanda Luu
<i>Twilight Fantastique</i>	Dani Quao	Lucy Guan	
<i>White Path</i>	Carlie Lo	Linda Zhang	Eliza Li
School: OLPH		Grade: Senior	Teacher/contact: Jennifer Taylor
<i>Bridge to the Future</i>	Lucas McLaughlin	Rachel Graham	Mary Campo
School: Our Lady of Lourdes C. S.		Grade: Junior	Teacher/contact: Maria Baldari
<i>Bridge Miester</i>	Nauj Bautista	Leticia Lopez	
<i>Interpower Bridge</i>	Robi Joe Butay	Kevin Lleva	
<i>Pontebello Bridge</i>	Oliviana Cinco	Abhi Krishnaparan	
<i>Sunset Bridge</i>	Ilana Sadri	Margaret Guzman	Samantha Jimenez
<i>The Great Canadian Bridge</i>	Matthew Garcia	Carl Castro	
School: Sacred Heart Catholic School		Grade: Junior	Teacher/contact: David Lam
<i>3 Krystals Bridge</i>	Natasha Kaipallil	Mary Jo Fernandes	Meckayla Findlay
<i>DKS Angel'z</i>	Deille La Rocque	Kateleen Reyes	Shanice Atkins-Broome
<i>Domination Bridge</i>	Aaron Ortiz	Arnold Cuevas	Sukeei Uyema
<i>JKC Black Top Bridge</i>	Jun Jun Nario	Colis Benjamin	Keenan La Rocque
<i>JK's Pokemon Sapphire Bridge</i>	Katie Calica	Janelle Pena	
<i>JM Destiny Bridge</i>	Jhaneel Pierre	Melissa Megson	
<i>Mushroom Bridge</i>	Jed Blancaflor	Mearah Manalo	Kristian Lozada
<i>Rainbow Road</i>	Rashmi Weerasinghe	Andrea Panditharatne	Stephanie Sekoh
<i>Shadow Link</i>	Jericho Robete	Daniel Ernest	Adam Wong
<i>Sunshine Bridge</i>	Ziven Sri Ranganthan	Tavnor D'Lima	Yohannes Biniam
School: Sacred Heart Catholic School		Grade: Junior	Teacher/contact: Mrs. Drenko
<i>Crusher</i>	Tarik Lewis	Anthony Prasad	Nathan Leon
<i>Naruto (Guidance) Bridge</i>	Miguel Sese	Arun Jamal	Miguel Jones
<i>The Rainbow Bridge</i>	Larissa Sequeira	Daisy Nolasco	Sandra Bugyei-Twum
<i>The Trinity Bridge</i>	Glenardo Ramos	Patrick Asuncion	Karlon Fuentes
<i>Unity Bridge</i>	Amanda Cruz	Keyiah McNaught	



Inspection
3

P.Eng.

Certificate
7

Judging
4

2005



2006 BRIDGE BUILDING COMMITTEE

left to right: Joseph Kryzanowski, Irene Liu, Gordana Nikolic, Helen Ho, Sue Yao, Madu Suthanan, Denis Carlos, Rane Mahalingam, Santosh Gupta, Salahuddin Ahmed, Charles Fernandes, Scott Dempster, Arul Thiagarajah, Mervat Rashwan, Harshit Shah, Jerry Wang, Maha Mahalingam

AGENDA

10:30 am	Check-in Registration Lunch Break
12:00 pm	Welcome and Contest Procedures Chair's Introduction
12:15 pm	Competition Begins
3:15 pm	VIP speeches and Awards Robert A. Goodings P.Eng., PEO President Kim Allen, MBA., P.Eng., CEO and Registrar of PEO Peter M. DeVita, MSc, MBA, P.Eng., Director OSPE



2005 BBC VOLUNTEERS

Alphabetical Order: Arul Thiagarajah, Charles Fernandes, Chatheersh Sivakumaran, Denis Carlos, Dong Yang, Edmond Lui, Fanny Wong, Frank He, G. Thurairajasingham, Gordana Nikolic, Gordon Ip, Helen Ho, Irene Liu, Janaki Balakrishnan, Janet Lynne Wenckstern, Jerry Wang, Jimmy Xie, Jimmy Zhao, Joseph Kryzanowski, Kam Leong, Karen Qi, Kelly Chiu, Ken Chiu, Kenneth Chen, Maha Mahalingam, Mervat Rashwan, Madu Suthanan, Naveed Iqbal, Pavalamany Yoganathan, Perry Shen, Peter Cushman, Ralph Wenckstern, Ranee Mahalingam, Rani Madu, Santosh Gupta, Scott Dempster, Stella Kryzanowski, Sushila Balasingham, Tammy Chiu, William Gregson.

AGENDA

- | | |
|---------|--|
| 3.40 pm | Judges Award Presentation
Hon. Brad Duguid, MPP
Hon. Mary Anne V. Chambers, MPP |
| 4.10 pm | Performance Award Presentation |
| 4:30 pm | Winners Group Pictures
Jennifer Coombes, Managing Editor,
Engineering. Dimensions, PEO |
| 5:00 pm | Close |



2004

Continued from page 8

School: Sacred Heart Catholic School <i>Bridge of 2006</i> <i>Bridge of the Future</i>	Francis Manguerra Simone D'Souza	Grade: Junior Teacher/contact: Sandy Lee Kyle Osborne Isabel D'Souza	Richard Asuncion Samantha Luxmikanthan
School: Sacred Heart Catholic School <i>Champlain Bridge</i> <i>Glacier Bridge</i> <i>Silver Gate Bridge</i>	Jomari Suarez Allyssa Mojica Joel Fernandes	Grade: Senior Teacher/contact: Mrs. Drenko Stephan Rajasingan Kameshia Broome Benji Jose	Alberto Ilano Krystel Cruz Jeremie Selvam
School: St. Antoine Daniel <i>Gas Bridge Builders</i>	Soomin Kim	Grade: Senior Teacher/contact: Joe Sacco Amanda Bahilibi	Giulia Salituro
School: St. Denis Catholic School <i>Fluffy Puffy Unicorn Bridge</i> <i>Spike</i> <i>The Bridge of Zeus</i> <i>The Skywalker Bridge</i> <i>The Stare Upper</i>	Andrew Kocur Callum Travagliini Jessica Alexander Tessa Kardos Emma Scholbeck	Grade: Junior Teacher/contact: Trinka Brine Evan Benson John Mullen Hannah Rochon-Terry	
School: St. Denis Catholic School <i>Futabeuli Bridge</i> <i>JC Nickel</i> <i>Silvergate Bridge</i> <i>The GTS Bridge</i>	Meagan Cacheiro-Lemay Jake Gordon Julia DeRuyter Teresa Maynard	Grade: Senior Teacher/contact: Trinka Brine Cassandra Kardos Charlie Anderson Emma Joachim Siobhan Domagala	Kiera Whitten Hannah Baigent Rachel Sullivan Glory Dearling
School: St. Edward's Catholic School <i>The Eighth Wonder</i>	Benjamin Tari	Grade: Junior Teacher/contact: Ben Tari	
School: St. Edward's Catholic School <i>Girl Engineers</i>	Christina Polara	Grade: Junior Teacher/contact: Mrs. Barry Madeline Maltari	Kaylee Francis-Carroll
School: St. Edward's Catholic School <i>NMW BRIDGE</i>	Wil McHale	Grade: Senior Teacher/contact: Dan Capozzi Marko Kostiw	Nick Chilelli
School: St. Florence <i>Heavy Loader</i> <i>Indestructable</i> <i>L.A.M. Bridge</i> <i>M. & M. Bridge</i> <i>Superior Bridge Builders</i> <i>The Unbreakables</i> <i>Triple 'S' Bridge</i>	Harvey Hernandez Sarah Sardinah Lyza Coronado Marilyn Fernandes Leighann Dixon Dickson Manoharan Anna Mata	Grade: Senior Teacher/contact: Budden Carol Tren Wilks Tenesha Charles Ashley Martin Mary Yacoubien Shauna D'Sousa David Naces Connie Chung	Joshua Randall Melanie Steer Fenroy Benjamin
School: St. Ignatius of Loyola <i>The Arched Bridge</i>	Ambrose Lau	Grade: Junior Teacher/contact: Kimberley Anthony Daniel Djakarsana	
School: St. Ignatius of Loyola <i>The Marvy Bridge</i>	Marlene de Leon	Grade: Junior Teacher/contact: Mrs. Anthony Davy Black	
School: St. Leo's Catholic School <i>Alka Bridge</i> <i>Team Steph-a-bel</i> <i>The Breakfast Club</i> <i>The Popsicles</i>	Alexander Donisi Stephanie Merino Caitlin MacLean David Brynzcka	Grade: Senior Teacher/contact: Trevor Klundert Kayo De Souza Isabel Venturanza Alexandra Sarunas Devon Tucker	
School: St. Rose of Lima <i>The Liberty Bridge</i>	Nathan Rodricks	Grade: Junior Teacher/contact: Ms Mirella Rossi	
School: St. Victor Catholic School <i>Truss Me</i>	Danielle Moore	Grade: Junior Teacher/contact: Chris Moore David Moore	
School: William G. Miller Jr. P. S. <i>DJ Bridge</i> <i>DS</i> <i>Hercules</i> <i>Over the Rainbow</i> <i>The Black Skunk</i> <i>The Black Widow</i> <i>The Dogs</i> <i>THS Bridge</i>	Jack Degen Sandra Kinder Megan Ballantyne Sitra Jemal Andrew Aslanidis Kyle Chandler Nathan Grant Tanisha Mistry	Grade: Junior Teacher/contact: Edith Mardirossian David Ventura Danielle Albers Robin Edelhofer Jennifer Fryer Caroline Kesek Kareem Halabi Alexander Paré Shneckqua Flowers	Melissa Chandler James Banyard Ian Ballantyne Hailey Strachan



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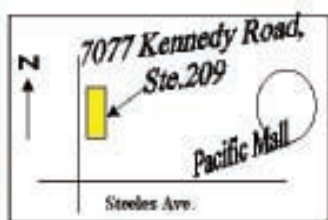
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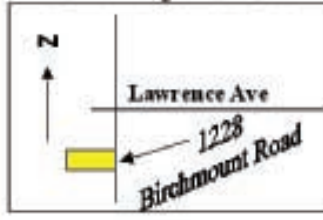
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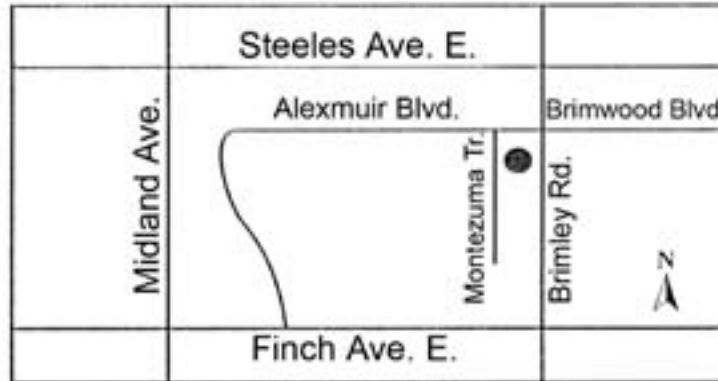
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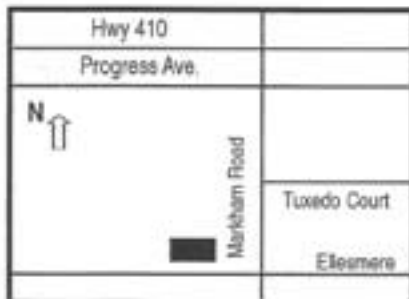
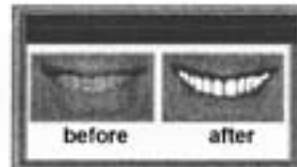


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