



Professional Engineers
Ontario



ONTARIO
SOCIETY
OF PROFESSIONAL
ENGINEERS



Engineering and technology professions are often underestimated and misunderstood by the public.

Perhaps not coincidentally, there is low interest in the professions from prospective student at a time at a time when demand for engineers and technologists is significantly increasing. **This must be changed.**

With your support, Engineers Without Borders (“EWB”) Canada, Professional Engineers of Ontario (“PEO”), Ontario Association of Certified Engineering Technicians and Technologists (“OACETT”) and Ontario Society of Professional Engineers (“OSPE”) are leading a movement to change public/youth perception of engineering, starting with NEM.

What information is in the guide?

- Effective engineering messaging
- Guidance on how to use effective messaging when designing your event/activity
- Links to relevant research and resources

Why is the message important?

Low interest in engineering and technology professions results in a decline in relative number of engineering and technology graduates. Additionally, there is a lack of diversity of thinkers within the profession at a time when the challenges we face and the stakeholders we serve are more diverse than ever.

A lack of understanding about the role of engineering and technology in society increases the risk of a major disconnect developing between society’s needs and engineering and technological solutions.

Let’s redefine what it means to work in engineering and technology to reflect our profession’s purpose, importance, and diversity.

Effective engineering messaging

How have we gotten messaging wrong in the past?

Outreach messages that focus **solely on math and sciences** in promoting engineering are the **least effective** in enhancing youth and public perception of the profession.

NEM Ontario's messaging approach

Clear and deliberate messaging based on:

- the latest engineering outreach research by Canadian and American institutions.
- current trends in profession's demographics, public perception, and future opportunities

Audience segmentation

The type of audience highly determines the type of message to be delivered. The majority of outreach during NEM 2016 will target six segments:

1. Youth (Grades 1-8)
2. High School students (Grades 9-12)
3. Post-secondary students (University & College)
4. Young professionals
5. Established professionals
6. General Public

Q. How does the audience impact the messaging during the event/activity?

Planning implication to consider:

- Length of activity and the attention span of younger audiences
- Intentional messaging to parents attending youth events/activities
- Focus on big picture, and societal impact, during public events/activities
- Effective and ineffective messages depending on age and gender of the audience of your event/activity

NEM 2013 to 2015

	NEM 2013	NEM 2014	NEM 2015
Students engaged	12,000	13,560	13,837
People directly engaged	25,600	27,120	30,000
Total reach	862,000	1.4 mil	2.3 mil
Number of events	142	187	276
Unique visitors to NEM website	3,652	6,688	8,404

Thanks to your continued support can we make NEM 2016 bigger and better!

What are effective messages?

1. Engineering and technology solutions to a diverse set of 21st century challenges require a diversity of thinkers. There's a place for you in engineering and technology!

2. Engineering and technology shape the world around us: yesterday, today and tomorrow.

3. Engineering and technology apply creativity and imagination to turn ideas into reality.

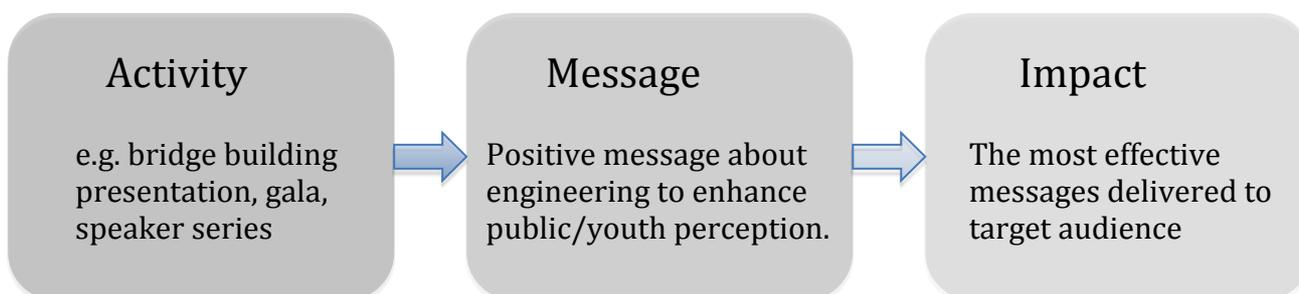
4. Engineering and technology are essential to the safety, health, happiness, comfort, and efficiency of our friends, family and distant neighbors. Locally and globally, people working for people. Engineers and technologists make a world of difference.

Reference: [National Academy of Engineering's Changing the Conversations campaign](#)

How can we plan for effective outreach?

A current disconnect exists between engineering outreach input (activities, presentations, workshops, etc.) and the output of actual messages delivered to target audience. Engineering and technology messages are seldom intentional and are often ignored, in favour of time spent on the input. This can lead to inconsistent and ineffective messaging across activities.

Desired future state for planning engineering outreach: the *message* about engineering and technology is also carefully analyzed and is intentionally delivered.



Important questions to consider:

- What messages is the event/activity delivering? How is it delivering it?
- What potential hidden messages could the event/activity be delivering?
- How can the event/activity reinforce effective messages through innovations and minor changes?
- What type of support will the event/activity need to deliver effective messages (material, training, funding, volunteers...etc)?

What kind of world do you want to create?

For years people had told me the same thing, “You’re good at math and science, you should study engineering.” Only when I got to university did I realize that engineering and technology is about so much more than scientific aptitude.

Engineering and technology is about innovation, communication, entrepreneurship, social responsibility and creativity. Not just math and science. So let’s promote *all* these messages to prospective students and the general public!

We have the power to attract a diversity of thinkers to engineering and technology *today*, to solve the problems of *tomorrow*. As a united front, we can change public perception of engineering and technology. Together we have the power to challenge stereotypes and inspire Ontario’s professionals and the next generation of innovators.

Regards,

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Your NEM 2016 Coordination Team | nemontario@ewb.ca



Excerpt from the NEM Ontario Resource Library

Resource: Toolkit

Why should I check this out?

[Changing the Conversation Toolkit](#)

This is a resource tool developed by the National Academy of Engineering to help engineering outreach groups deliver messages that improve public perception of engineering.

Messaging for different audiences

[High school girls](#)

The report “Compelling Engineering Messages” was commissioned by Engineer Your Life in the USA to determine the most favorable engineering messaging for high school girls.

[General public segmented](#)

The report “Because Dreams Need Doing: New Messages for Enhancing Public Understanding of Engineering” analyzed market research conducted for several demographics testing the understanding of engineering and which messages were most favorable and believable.

[Wherever you are, we are here](#)

This website is a resource center developed for teaching students from Grades K-12 about engineering. Each resource (activity, lesson, etc.) includes the message that it intends to deliver to its audience.

Sample campaign

[Grades K-12: Teaching Engineering](#)

The campaign was developed by l’Ordre des ingénieurs du Québec. This video was developed to suit several demographics.