

24. Structure and Infrastructure

Classroom Activity: Students will become familiar with the work of professional engineers and gain an understanding of the school as a structure and its position in the infrastructure of today's society and community.

Grade(s): 9 to 12

Course(s) and Strand(s): This activity is cross-disciplinary to all courses in science, mathematics and technological education.

Science: Strand A: Scientific Investigation Skills and Career Exploration (all courses)

Technological Education: Depending on the course either Strands D or E: Professional Practice and Career Opportunities (all courses)

See supplementary document Ontario Curriculum Alignment for Engineer-in-Residence Secondary Classroom Activities: Science and Technological Education for relevant overall and specific expectations.

Mathematics: Mathematical Process expectations

Assessment Categories:

- Knowledge and Understanding.
- Application

Type of Activity: Classroom

Preparation:

This activity took 120 minutes to plan, but required little additional preparation

Time needed to complete the task: 75 minutes

Materials/Resources for the teachers:

none

Materials/Resources for the students:

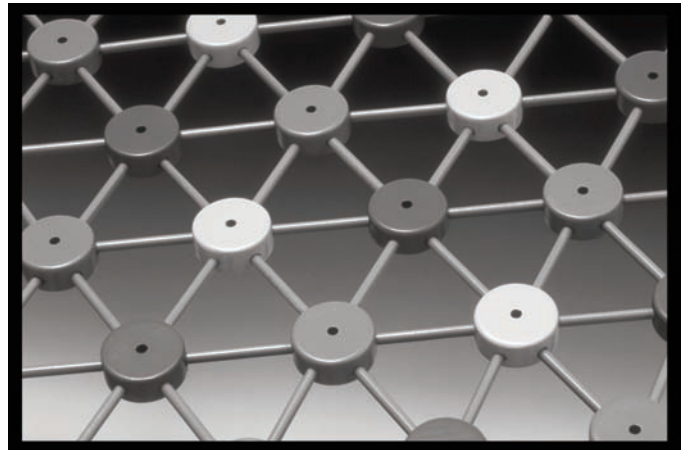
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Activity Description:

Teacher introduces the EIR program and the EIR:

EIR explains what engineers do and what P.Eng signifies.

EIR introduces the topic of the school as structure and its position in the infrastructure of society.



EIR encourages class participation by asking questions such as:

- What is the funny little building with no windows labelled Bell Canada?
- Where do the power lines you see overhead go?
- Where does the water go when you flush the toilet?

A list is generated from classroom participation.

Work through each topic on the list, tracing all elements back to first principals or natural starting point, while reviewing the role of the engineer in each process.

Master List of Common Themes

<u>Inbound</u>	<u>Outbound</u>	<u>Generated</u>
water	heat	heat
electricity	waste water	light
people	people	sound
sunlight	energy	air