



# STEM Institute for Elementary Teachers by Ingenium Professional Development Workshops

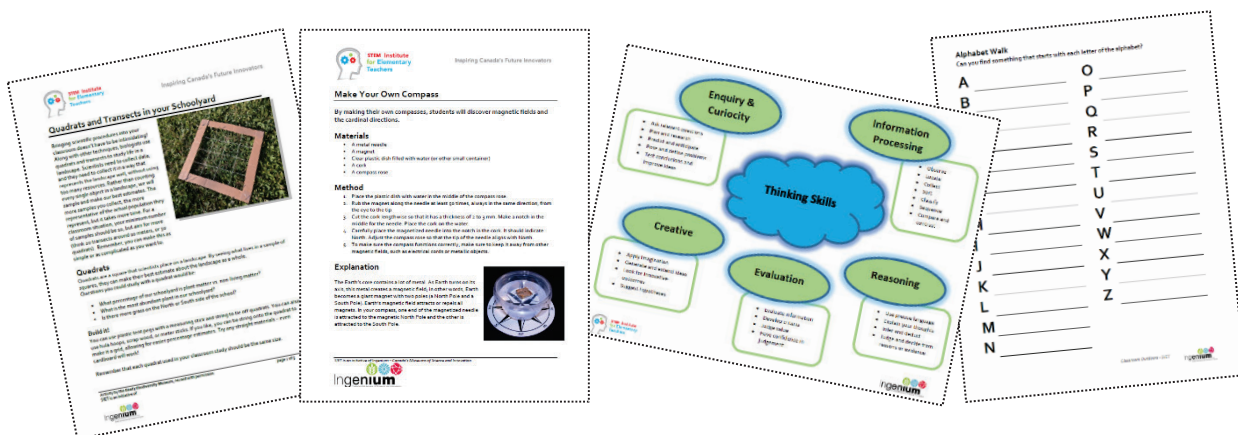
The STEM Institute for Elementary Teachers is an award-winning program that offers interactive professional learning workshop for primary and junior teachers. The program shares innovative teaching strategies for integrating science, technology, engineering, and math into classroom lessons.

At the STEM Institute for Elementary Teachers, educators explore how to make science come alive for students. Teachers discover new ways to have students apply their knowledge and are equipped with information and resources to bring to their classroom.

The following workshops are available for PD days this year. To help set the stage we highly recommend we start with the “Process of Science” – a workshop that shares effective strategies to engage students in STEM as a foundation for all STEM workshops

- ✓ Process of Science
- ✓ Creative Prototyping
- ✓ The Classroom Outdoors
- ✓ Math – The Science of Patterns
- ✓ Seeing the Invisible
- ✓ Structures and Shapes
- ✓ Diversity in STEM
- ✓ Energy in Our Lives
- ✓ Engineering Energy Solutions
- ✓ Widget Building Workshop
- ✓ Coding Without Computers
- ✓ Properties of Air and the Basics of Flight
- ✓ Exploring Simple Machines
- ✓ Science of Sport

Each workshop includes hands-on ideas as well as a handout show how they can be replicated easily in the classroom.



# About the Workshops...

## **Process of Science – Making Your Science Classroom Come Alive!**

Discover engaging ways to jump start classroom science as we explore curiosity and thinking like a scientist, using observation and inference skills.

## **Creative Prototyping**

A guide to practical strategies that engage students in hands-on prototyping. We explore quick creative challenges that can be done in any classroom.

## **The Classroom Outdoors**

Take your learning outdoors and become citizen scientists. We create easy-to-use tools that empower students to gather data and record their observations of the natural world.

## **Math – The Science of Patterns**

Explore patterns and how they can be used for prediction and code-cracking. Discover math and patterns in nature to inspire creativity in your students.

## **Seeing the Invisible**

Discover how to transform your cell phone into a powerful tool to explore the “micro-world” then we’ll use this to explore close up crystal shape and the structure of objects to get you started.

## **Structures and Shapes**

Examine the form and function of structures, see explore how shapes are affected by forces that act on or within them, and how this can guide the design of new structures and mechanisms.

## **Diversity in STEM**

Discover free resources can equip you to engage students in addressing inclusivity and equity and how to engage students with open-ended activities to encourage dialogue and discussion.

## **Energy in Our Lives**

Learn creative strategies for teaching about energy, and how you can use tools to engage students in exploring renewable and non-renewable energy, from production to consumption.

## **Engineering Energy Solutions**

Explore how students can act as engineers with activities that encourage creative thinking as they use the design process to address energy consumption.

## **Widget Building Workshop**

Widgets are fun and simple activities that illustrate science concepts. We’ll include easy widget build projects that explore STEM and encourage critical thinking skills.

## **Properties of Air and the Basics of Flight**

Explore the physical properties of air, Bernoulli’s principle, and how different aspects of flight work through engaging and practical experiments and activities.

## **Exploring Simple Machines**

Explore the different types of simple machines, the ways we can use mechanical advantage, and the applications of simple machines in our day-to-day lives.

## **Coding Without Computers**

Investigate hands-on activities to learn the basic aspects of coding – without computers! Explore how essential programming concepts, such as variables and syntax, can be presented to very young students in a fun and engaging manner.

## **Science of Sport**

Investigate the science behind the human body and discover engaging activities that investigate the physics and chemistry of the human body. Explore how our bodies work to as we perform physical activities and understand the role that science plays in sports.