



# EDUCATION FOR INNOVATION

(E4I)

**EARLY LEARNING-  
KINDERGARTEN**

**A RESOURCE**

**TO CULTIVATE**

**AND CELEBRATE**

**CANADA'S**

**CULTURE OF**

**INNOVATION**

# TABLE OF CONTENTS

## WHAT IS AN INNOVATION CENTRE?

Experience 1  
PAGE 6

## INQUIRY

EXPERIENCE 2: What is Innovation?  
PAGE 9

EXPERIENCE 3: What Do Innovators Do?  
PAGE 13

EXPERIENCE 4: What Are Canadian Innovations?  
PAGE 21

## IDEATION

EXPERIENCE 5: How Do Innovators Plan?  
PAGE 31

EXPERIENCE 6: How Do Innovators Create?

## INCUBATION

EXPERIENCE 7: How Do Innovators Test and Improve?  
PAGE 37

## IMPLEMENTATION

EXPERIENCE 8: How Do Innovators Share?  
PAGE 41

USE OF LEARNING CENTRES  
PAGE 48

CURRICULUM TRACKING GRID  
PAGE 52

BOOK LIST  
PAGE 45

# WHAT IS AN INNOVATION CENTRE?

## Learning Experience 1

### Background

The Innovation Centre consists of a variety of materials that allow children to inquire, plan, create, test, share and celebrate innovations. Some schools/classrooms may use the term Makerspace to signify a place to make creative items. The Innovation Centre is an expansion of the Makerspace concept, allowing for the creation and celebration of the innovative processes and products. Children may use the Innovation Centre to design improvements to items and new ways of doing things. The materials are generated by both the educators and children, and fluctuate depending on the needs and interests of the innovators. Many of the suggested materials are recycled, and are intended for planning and making innovations. Educators may encourage children to consider items that are available throughout the classroom, as well as objects that are collected from the home or community, to include in the centre. All materials should be easily accessible and available for the creation phase. The Innovation Centre will ideally include adequate space (table and floor) for exploring, experimenting, designing and collaborating. An Innovation Centre can also be an area where child-created innovations are featured and displayed. The Innovation Centre is cross-curricular and includes materials from the arts, physical education/health, literacy, mathematics, science, and technology. Examples of Canadian innovations (e. g. zipper, basketball, replicas of canoes, life jacket, snowshoes, maple syrup, McIntosh apple, phones, and light bulb) can be showcased for exploration. If space is limited, the Innovation Centre could be located in the library of the school or in a central location. With young children, the Innovation Centre could be more appropriately referred to as the Innovation Station.

### Materials

- Samples of Canadian innovations (The innovations could be diverse or could be grouped to represent a topic such as transportation, food, communications, health and safety, toys)
- Samples of books about innovation (e.g. *Innovation Nation*, *Rosie Revere*, *Engineer*, *Not Just A Box*)
- Tablet or laptop for research, showing videos, use of D2L, printer, 3D Printer
- Recycled materials: wrapping paper, wallpaper, plastic containers and lids, paper rolls, twist ties, string pieces, Styrofoam, wooden pieces, popsicle sticks, straws, egg cartons
- Arts materials: glue, paper clips, pieces of Velcro, tape, string, elastic bands pompoms beads, bells, bingo dabbers, gel bags, paper, clipboards, Post-It Notes, cards, small white boards or chalkboards, markers, pencils, pens, crayons, pencil crayons, paint

- Building materials: marbles, discs, wheels of varying sizes, toothpicks, tubes, plasticine or play dough and other building materials drums
- Natural materials: twigs, rocks, stones, shells, sand feathers
- Technology: digital cameras, magnifying glass, microscope, etc.
- Innovations created by children in the class
- Innovation Tower (Appendix 1A)

### Pedagogical Approaches

- Introduce an Innovation Centre by bringing children to sit in front of the centre. *Prompts: We have something new today in our classroom. Did anyone notice the Innovation Centre? What do you think we can do there? What would you like to add to the Innovation Centre?*
- Encourage children to explore materials at the Innovation Centre and use them in an open-ended manner.
- Show children samples of Canadian innovations in the centre for discovery and investigation.
- Explain they will be learning about how to be an innovator while exploring and building in the centre. Inspire the children to make something new or make something better!
- Videotape children's actions and innovations from the class on an ongoing basis and show the video to the visitors to the Innovation Celebration.

### Innovation Tower

- Place the tower near the Innovation Centre as a means of recording and showcasing innovative learning experiences. Placing it near the Innovation Centre allows for association and easy transfer of learning.
- Introduce the tower to children at the same time as the Innovation Centre.
- Collaborate with children to provide sample innovations for the tower (samples include learning stories, photos, child quotes as well as questions and ideas.)
- Review artifacts during the daily follow-up to celebrate the learning.
- Move the tower around the room or school when it has collected a number of artifacts and evidence of innovation.

### Follow-Up

- Share observations with children on how they worked with materials at the Innovation Centre (e.g. initiating, problem-solving, showing perseverance and creativity).
- Review any items or artifacts that were placed on the Innovation Tower.

## INNOVATION TOWER

This is a portable documentation tower made up of different sized boxes. It visually represents the learning experiences of the children throughout the innovation process. Educators and children can attach documentation samples (photos, learning stories, child quotes, child work samples, questions, predictions etc.) to all sides of the boxes. Samples of innovations created by the children can be placed along the ledges. The tower can be moved around the classroom when/where needed, and used during the daily follow-up group activity.

