



An Introduction to Coding in the Junior Grades

Unplugged Activities (offline activities - without the use of technology)

This resource was developed for ETFO for educators with little to no experience in Coding. The activities shared below have been selected to help teachers begin their coding journey with activities that are fun for students and covers many of the coding expectations in the Ontario Math Curriculum!

Activity #1: Intro to Coding

**Option 1:
Origami**

During this activity, students will learn the importance of writing SPECIFIC and clear instructions. New terms introduced and explained include algorithms, sequence, and decomposition.

<https://teachyourkidscode.com/origami-unplugged-coding-activity/>

**Option 2:
Cup
Stacking
Activity**

This hands-on activity will teach students the connection between symbols and actions. New terms introduced and explained include algorithm, coding, and debugging.

<https://www.otffeo.on.ca/en/wp-content/uploads/sites/2/2017/05/Cup-stacking-robot-code.pdf>

Activity #2: Coding through a Maze

Option 1:

This activity will teach students to think from a point of reference different from their own. Students will be

	<p><i>challenged to write a program (as short as possible) to solve a specific maze.</i></p> <p>https://researchparent.com/coding-a-lego-maze/</p>
Option 2:	<p><i>This activity will teach students to design an algorithm to capture all the egg prizes and avoid the hot lava rocks. You can make it more challenging by adding more obstacles (hot lava rocks) in your maze!</i></p> <p>https://teachyourkidscode.com/egg-carton-unplugged-coding-activity/</p>

Activity #3: Algorithms

Option 1: Graph Paper Programming	<p><i>During this activity, students will write an algorithm and practice communicating their ideas through codes and symbols.</i></p> <p>https://code.org/curriculum/course2/1/Teacher</p>
Option 2: Algorithms with Tangrams	<p><i>During this activity, students will challenge students to translate an image into actionable instructions. The other players will build their pictures from the description given by the cardholder.</i></p> <p>https://code.org/curriculum/course4/1/Teacher</p>
Option 3: Solve the Farmers Problem	<p><i>During this activity, students will use their problem-solving skills as they write an algorithm that will help get the farmer's three materials across the river.</i></p> <p><i>This activity can be found in this document (Activity #3 - Page 11).</i></p> <p>http://scratch.ie/sites/all/themes/scratch_theme/resources/newworkbook/Module1.pdf</p>

Activity #4: (Grade 5/6) Conditions

Condition Statements are statements that run only under certain conditions (sometimes called “if statements”). For example, if the button is clicked, play music. Conditionals tell the program to perform the action if a certain condition is true!

**Option 1:
Conditional
with cards:**

This lesson demonstrates how conditionals can be used to tailor a program to specific information.

<https://code.org/curriculum/course2/12/Teacher>

**Option 2:
Conditionals**

During this activity, students will write and evaluate conditional statements:

<https://www.flocabulary.com/lesson/coding-conditionals/>

Other Resources:

**Hour of Code
(unplugged)**

<https://hourofcode.com/ca/learn>

Code.org

<https://code.org/curriculum/unplugged>

**Edugains:
Coding in
Elementary**

Check out Unplugged Sample Learning Plans from:

<https://www.edugains.ca/resourcesTELO/CE/CodingInterface/interface.html>

Dance:

<https://curriculum.code.org/hoc/unplugged/4/>