# Computer Programming 12

*Foundational Outcomes*

NOVA SCOTIA
NOUVELLE-ÉCOSSE

2020–2021

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Prepared by the Department of Education and Early Childhood Development

This is the most recent version of the current curriculum materials as used by teachers in Nova Scotia.

# Computer Programming 12

As teachers determine their lesson plans for Term 1 of the 2020-2021 school year, one of the considerations will be the sequencing of learning activities. Where possible, activities that will be difficult or impossible to do at home should be done early in the term, to be better prepared to shift to a learning-at-home model, if required. The colour-coded outcomes below can serve as a guide for teachers as they make activity sequencing decisions.

In-class learning priority

In-class learning preferred

Outcome could be met from home

## Module 1: Problem Solving in Computer Programming

1.1 demonstrate an understanding of the role of number systems in data storage
1.2 apply mathematical concepts, including Boolean logic and operators
1.3 define a problem in explicit terms using object-orientated analysis
1.4 identify and outline strategies to solve a range of problems
1.5 apply a range of problem-solving skills
1.6 demonstrate an understanding of ethical, moral, and legal issues in information technology
1.7 investigate a range of related career opportunities

## Module 2: Fundamentals of Programming

2.1 demonstrate an understanding of the syntax and features of a programming language
2.2 identify and frame problems
2.3 demonstrate an understanding of how data structures are used to solve problems
2.4 use appropriate methods and terms to develop a plan to solve a problem
2.5 apply and plan to solve a problem using a programming language
2.6 demonstrate an understanding of the effectiveness of other people's programs and documentation

## Module 3: Applied Problem Solving

3.1 work individually and collaboratively to develop program tools, components, and strategies to create solutions
3.2 create a user interface using effective design principles
3.3 apply input/output operations
3.4 apply data-manipulation techniques
3.5 apply data-formatting principles
3.6 apply error-handling techniques/validation

Module 4: Project Development

4.1 analyze a problem

4.2 develop a project plan, including definition, scope, roles, resources, steps, and deadlines, for a solution

4.3 demonstrate the collaborative skills and behaviours required to work with others

4.4 identify information needs and locate, evaluate, and select resources

4.5 build and deploy a solution

4.6 create documentation associated with the project

4.7 test and refine the solution

4.8 present the solution

4.9 reflect on the solution, the process, and their own learning

4.10 explore various educational and career paths in information technology fields