

## Grade 9 – 10 Science Curriculum

During the summer of 2017, the Science 9 and 10 curricula were compacted to allow teachers more time to support high yield instructional practices for teaching science. Therefore, the Science 9 and 10 programs will not undergo any further prioritization for the 2020-2021 school year.

Science 9/10 teachers will have multiple access points to ignite interest for science with early high school learners for the 2020-2021 school year:

- The [\*Science 9 - Ecosystem Dynamics\*](#) implementation draft curriculum is available to guide instruction for those teachers wanting to explore and capitalize on the flexible format of the renewed curriculum released in March 2020.
- Those Science 9 educators who do not want to refer to the implementation draft will use the [\*Grade 9 Transition Topics\*](#) and will refer to the existing [\*Science 9 curriculum\*](#) document for the supporting outcomes.
- Science 10 educators will use the [\*Grade 10 Transition Topics\*](#) and will refer to the existing [\*Science 10 curriculum\*](#) document for the supporting outcomes.

## TRANSITIONAL SCIENCE TOPIC GUIDE – Grades 3-10

This guide identifies the two units of study per grade level that have been identified to facilitate the transition to a new Science framework that is currently in development by EECD. It is within these topics that teachers will explore ways of embedding science literacy; inquiry, problem-solving and decision making, into instructional practices.

<b>Topics</b>		
<b>3</b>	Scientific Literacy	
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">Plant Growth and Changes</td> <td style="width: 50%; text-align: center;">Exploring Soils</td> </tr> </table>	Plant Growth and Changes
Plant Growth and Changes	Exploring Soils	
<b>4</b>	Scientific Literacy	
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">Habitats</td> <td style="width: 50%; text-align: center;">Rocks, Minerals, and Erosion</td> </tr> </table>	Habitats
Habitats	Rocks, Minerals, and Erosion	
<b>5</b>	Scientific Literacy	
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">Properties and Change in Materials</td> <td style="width: 50%; text-align: center;">Forces and Simple Machines</td> </tr> </table>	Properties and Change in Materials
Properties and Change in Materials	Forces and Simple Machines	
<b>6</b>	Scientific Literacy	
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">Flight</td> <td style="width: 50%; text-align: center;">Diversity of Life</td> </tr> </table>	Flight
Flight	Diversity of Life	
<b>7</b>	Scientific Literacy	
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">Mixtures and Solutions</td> <td style="width: 50%; text-align: center;"><b>Earth's Crust</b></td> </tr> </table>	Mixtures and Solutions
Mixtures and Solutions	<b>Earth's Crust</b>	
<b>8</b>	Scientific Literacy	
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">Water Systems on Earth</td> <td style="width: 50%; text-align: center;">Optics</td> </tr> </table>	Water Systems on Earth
Water Systems on Earth	Optics	
<b>9</b>	Scientific Literacy	
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">Reproduction</td> <td style="width: 50%; text-align: center;">Space Exploration</td> </tr> </table>	Reproduction
Reproduction	Space Exploration	
<b>10</b>	Scientific Literacy	
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">Chemical Reactions</td> <td style="width: 50%; text-align: center;">Motion</td> </tr> </table>	Chemical Reactions
Chemical Reactions	Motion	

*A new science framework is under development for Grades 3 – 10.*

# The Three Processes of Scientific Literacy

---

Instruction for science should focus on three major processes. The first of the three processes, *scientific inquiry*, is a way of learning about the natural world. It involves asking questions and searching for explanations about phenomena. The second process, *problem solving*, seeks solutions to human problems. The skills involved in problem solving facilitate a process which has different aims and different procedures from the inquiry process. The third process, *decision making* involves the identification of the problem or situation, generation of possible solutions or courses of action, evaluation of the alternatives, and a thoughtful decision based on the information available. Decision-making situations not only are important in their own right, they also provide a relevant context for engaging in scientific inquiry and/or problem solving.

## **Inquiry**

- define questions related to a topic
- refine descriptors/factors that focus practical and theoretical research
- select an appropriate way to find information
- make direct observations
- perform experiments, record and interpret data, and draw conclusions
- form a working hypothesis
- design an experiment which tests relationships and variables
- write lab reports that meet a variety of needs (limit the production of “formal” reports) and make inferences from recorded data
- recognize that the quality of both the process and the product are important

## **Problem Solving**

- clearly define a problem
- gather information from a variety of sources
- produce a range of potential solutions for the problem
- appreciate that several solutions should be considered
- plan and design a product or device intended to solve a problem
- construct a variety of acceptable prototypes, pilot test, evaluate, and refine to meet a need
- present the refined process/product/device and support why it is “preferred”
- recognize that the quality of both the process and the product are important

## **Decision Making**

- gather information from a variety of sources
- evaluate the validity of the information source
- evaluate which information is relevant
- identify the different perspectives that influence a decision
- present information in a balanced manner
- use information to support a given perspective
- recommend a decision and provide supporting evidence
- communicate a decision and provide a “best” solution

Sources:

New Brunswick Government Department of Education. Educational Programs and Services Branch. 2002. *Atlantic Canada Science Curriculum Guide: Science 6*, p. 7. Retrieved from <http://www2.gnb.ca/content/dam/gnb/Departments/ed/pdf/K12/curric/Science/Science-Grade6.pdf>

New Brunswick Government. Department of Education. Curriculum Development Branch. 1998. *Foundations for Atlantic Canada Science Curriculum*. Atlantic Canada Education Foundation, pp. 11-12. Retrieved from <http://www2.gnb.ca/content/dam/gnb/Departments/ed/pdf/K12/curric/Science/ScienceFoundation-K-12.pdf>