

2020-21 High School Re-Entry: Guidelines for prioritizing science learning outcomes

For teachers to make the best use of the instructional time available—in a face-to-face, remote, or blended learning environment, the Department of Education and Early Childhood Development collaborated with teachers from across the province to determine how to best streamline the high school science curricula to address essential outcomes.

Department of Education and
Early Childhood Development

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2020-21 High School Re-Entry: Guidelines for prioritizing science learning outcomes

Disclaimer:

The guidelines outlined in this document are in place for the 2020-2021 academic year. The Department of Education and Early Childhood Development (EECD) will determine their applicability for subsequent academic years on an as needed basis. The guidance documents (tabs) are to be used as a reference, alongside the applicable curriculum document for: Biology 111/112, Biology 121/122, Introduction to Environmental Science 120, Advanced Environmental Science 120, and Human Physiology 110, as those documents identify full scope of goals and objectives of the instructional program for public schools in New Brunswick. Application of these guidelines is a temporary intervention and is not meant to replace official curriculum documents listed below.

The curriculum documents can be assessed on the GNB.ca Education (Anglophone sector) Curriculum Documents website. The English versions of the documents are embedded below.

Course Title	Published	Website
Biology 11	2008	https://www2.qnb.ca/content/dam/gnb/Departments/ed/pdf/K12/curric/Science/Biology111-112.pdf
Biology 12	2008	https://www2.qnb.ca/content/dam/gnb/Departments/ed/pdf/K12/curric/Science/Biology121-122.pdf
Introduction to Environmental Science 120	2012	https://www2.qnb.ca/content/dam/gnb/Departments/ed/pdf/K12/curric/Science/EnvironmentalScience120.pdf
Advanced Environmental Science 120	2018	https://www2.qnb.ca/content/dam/gnb/Departments/ed/pdf/K12/curric/Science/AdvancedEnvironmentalScience120.pdf
Human Physiology 110	2016	https://www2.qnb.ca/content/dam/gnb/Departments/ed/pdf/K12/curric/Science/HumanPhysiology110.pdf

Navigating the Subject Tabs

Disclaimer

The content is organised based on the following headings:

UNIT NO.: *The unit number as assigned in the curriculum document*

TITLE: *The accompanying unit title as presented in the curriculum document*

OUTCOME CODES: *When available, the numeric (Pan-Canadian) code of the outcome in the curriculum document is used as a reference. If an outcome code is not available, then the outcome statement will be used instead.*

ACTION: *Two categories of action are possible: 1). **Defer** : Set aside (table) the learning outcome for future learning; for a time where conditions are more favourable and when time permits; and 2) . **Limit Treatment** : Apply professional judgement when considering the depth, sequence and scope of the learning for a given unit or concept.*

EXPLANATION: *Specific instructions offered how to approach the treatment of an / a set outcome(s). These are suggestions for how to approach and should not be considered as being mandatory.*

2020-21 High School Re-Entry: Guidelines for prioritizing science learning outcomes

Course: Biology
Code: 111/112
Published: 2008

Disclaimer:

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Unit No.	Title	Outcome Codes	Action	Explanation
1	Cell Theory	114-1, 114-2, 114-9, 116-2	Limit Treatment	Cell theory is an essential outcome that directly connects learning in Biology 111/112 to Biology 121/122. Coherence can be achieved by weaving the historical perspectives and the nature of biological inquiry (STSE) throughout the course.
1	Microscope Techniques (<i>Plants and Animals</i>)	213-3, 213-5, 213-8, 214-3	Limit Treatment	Microscopy and slide preparation are an essential progression for Biology 121/122; therefore, accommodations in the laboratory must be made to respect COVID19 school re-entry and lab safety guidelines. Microscopes and slides must be sanitized in between use as per COVID19 laboratory safety protocols. Teachers can model effective use and demonstrate preparation of wet mount. A video representation of the specimen is a suitable stand-in. Teachers can model effective use and demonstrate preparation of wet mount. Where feasible, use online slide banks available through science education companies. Teachers are encouraged to confirm best and safe practices with the health and safety Directives for Schools and School Districts , if uncertainties arise about the protocols to follow.
1	A Closer Look at Cells	115-5, 116-6, 314-6, 314-8	Limit Treatment	Limit the depth and scope of the topic. For example: briefly discuss prokaryotic and eukaryotic cells and focus the comparative anatomy - function of plant and animal cell organelles.
1	Photosynthesis and Respiration	314-6, 314-9	Limit Treatment	Limit the depth and scope of the topic. For example: Less emphasis about description components of mitochondria, chloroplast, electron carriers and accounting of ATP. Focus on the stages of chemical reactions and their complementary nature.
2	A More Detailed look at Plants	313-1, 316-4, 316-5, 316-6	Limit Treatment	Limit the depth and scope of this topic. For example focus on adaptations to a variety of environments, <i>alteration of generations</i> within, and pointing out trends (patterns). Limit the number of examples used for structural comparisons.

Biology 111/112

2	A More Detailed look at Plants	316-4, 316-6	Limit Treatment	Dissection is an essential skill applied in the biological study of Biology; therefore, accommodations in the laboratory must be made to respect lab safety guidelines. Dissection tools and equipment must be sanitized in between use as per COVID19 laboratory safety protocols. Teachers can model effective use and demonstrate the dissection. Where possible, document camera can be placed above the specimen, connected to digital projector, and the image displayed for student viewing. When unsure about protocols to follow, teachers are encouraged to confirm best and safe practices with the health and safety Directives for Schools and School Districts.
2	A More Detailed look at Plants	313-1, 316-4, 316-5, 316-6	Defer	Having a separate sub-unit can be eliminated by using New Brunswick species (taxonomy) as examples of plants for sections of <i>Biodiversity Within Ecosystems</i> [318-6, 318-7, 318-10 and 331-6] where possible. Teachers should proceed as time permits. Alternately, use for enrichment.
2	A More Detailed look at Animals	316-4, 316-5, 316-6	Defer	Having a separate sub-unit can be eliminated by using New Brunswick species (taxonomy) as examples of animals for sections of <i>Biodiversity Within Ecosystems</i> [318-6, 318-7, 318-10 and 331-6] where possible. Teachers should proceed as time permits. Alternately, use for enrichment.
2	A More Detailed look at Animals	316-6, 213-8, 214-1, 214-3	Limit Treatment	*Dissection an essential skill applied in biological studies, therefore accommodations in the laboratory must be made to respect lab safety guidelines. Dissection tools and equipment must be sanitized in between use as per COVID19 laboratory safety protocols. Teachers can model effective use and demonstrate the dissection. A video representation of the specimen is a suitable stand-in. When unsure about protocols to follow, teachers are encouraged to confirm best and safe practices with the health and safety Directives for Schools and School Districts.
3	Homeostasis	317-1, 317-3, 317-4, 317-6	Limit Treatment	Given the circumstances behind school closures, studies about the social and environmental contexts of science and technology are essential concepts for Biology. Explorations of homeostasis and the immune system must be retained. Students are presented with an extraordinary opportunity to investigate the science of COVID19 pandemic and how complex topics are communicated to societies by Public Health and the World Health Organisation.
3	Digestive System - The Chemistry of Nutrition	314-1, 314-2, 314-3	Limit Treatment	Focus of instruction should be about the structure and function of the digestive system. The biochemistry concepts are part of the Biology 121/122 program of study.

Biology 111/112

3	Circulatory and Respiratory System	212-6, 213-5, 214-9, 214-10, 215-2, 317-1, 317-3, 317-4, 317-6	Limit Treatment	Due to restrictions related to physical distancing, eliminate laboratory activities that have students gathering data by applying examination tools e.g. stethoscope, blood pressure cuff, etc. on each others. Use of models, computer simulations, and/or doing dissections*. Models must be sanitized in between use as per COVID19 laboratory safety protocols. Reduce emphasis on disease discussion and focus on one or two examples such as heart disease and the effects of vaping/smoking.
3	Immune System	115-5, 116-4, 116-7, 118-6, 118-9, 314-3, 317-1, 317-4, 317-6	Limit Treatment	Focus on the teaching components of immune response systems (innate and acquired) particularly as it relates to COVID-19. Concepts such as antibodies, vaccines and political and economic issues around worldwide pandemics are also relevant to the times.

2020-21 High School Re-Entry: Guidelines for prioritizing science learning outcomes

Course: Biology
Code: 121/122
Published: 2008

Disclaimer:

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Unit No.	Title	Outcome Codes	Action	Explanation
1	Mitosis and Cellular Reproduction	212-3, 212-8, 213-3, 213-5, 215-2, 313-2	Limit Treatment	Microscopy and slide preparation are an essential learning task for Biology 121/122; therefore, accommodations in the laboratory must be made to respect COVID19 school re-entry and lab safety guidelines. Microscopes and slides must be sanitized in between use as per COVID19 laboratory safety protocols. Teachers can model effective use and demonstrate preparation of wet mount. A video representation of the specimen is a suitable stand-in. Where feasible, use online slide banks available through science education supply companies. Teachers are encouraged to confirm best and safe practices with the health and safety Directives for Schools and School Districts , if uncertainties arise about the protocols to follow.
1	Mitosis and Cellular Reproduction	213-3, 214-9, 214-18, 215-2, 313-2, 315-2,	Limit Treatment	Focus on cell cycle with brief discussions about external, internal regulators, and cancer.
1	Meiosis and Production of Gametes	115-3, 313-2, 315-2	Limit Treatment	Laboratory simulations of the processes of meiosis might be useful however equipment used for the simulations must be sanitized in between use as per COVID19 laboratory safety protocols (Refer to the health and safety Directives for schools and school districts). Teachers can model effective use and demonstrate the simulation. A digital presentation is also a suitable stand-in. Chromosomal abnormalities can be reduced to Down Syndrome, Turners, and Klinefelter's.
1	DNA Structure and Replication	114-2, 115-3, 315-1, 315-3	Limit Treatment	Build coherence by weaving the historical perspectives and the nature of biological inquiry (STSE) throughout the unit. Overview of topic DNA replication; keeping focus on function, DNA nucleotide structure and pairs, representations of the basic DNA triplet and major enzymes involved.

Biology 121/122

1	DNA Structure and Replication	315-4, 315-5	Defer	Okazaki fragments and detail about enzymes (ligase, polymerase I, sense vs. anti-sense replication) can be deferred. Teachers should proceed as time permits. Alternately, use for enrichment.
1	Protein Synthesis and Genetic Mutation	115-3, 118-2, 315-2, 315-4, 315-7	Limit Treatment	Overview of protein synthesis and mutations; keeping focus on transcription, translation, dehydration synthesis reaction and then look at point versus frame shift mutations.
1	Protein Synthesis and Genetic Mutation	212-4, 214-12, 215-5, 315-7	Limit Treatment	Laboratory investigations are an essential learning task for Biology 121/122 therefore accommodations in the laboratory must be made to respect COVID19 school re-entry and lab safety guidelines. Microscopes and slides must be sanitized in between use as per COVID19 laboratory safety protocols. Teachers can model effective use and demonstrate preparation of wet mount. A video representation of the specimen is a suitable stand-in. Where feasible, use online slide banks available through science education supply companies. Teachers are encouraged to confirm best and safe practices with the health and safety Directives for Schools and School Districts, if uncertainties arise about the protocols to follow.
1	Genetic Engineering and Human Genomics	114-7, 115-3, 116-4, 116-6, 117-7, 315-9	Limit Treatment	Reduce instructional time spent exploring : DNA Gel electrophoresis, PCR, and CRISPR. Explorations about genetic engineering, recombinant DNA and transgenic organisms are recommended.
2	Mechanisms and Patterns of Evolution	114-2, 114-5, 115-7, 118-6, 214-6, 215-4, 316-2	Limit Treatment	Limit historical discussions making focus on natural evolution / selection.
2	Mechanisms and Patterns of Evolution	316-2, 316-3, 316-4	Defer	Hardy-Weinberg assumptions and calculations. Teachers should proceed as time permits. Alternately, use for enrichment.
3	Nervous and Endocrine Systems	212-6, 213-4, 213-5, 214-10, 215-2, 317-1	Limit Treatment	Laboratory activities provided to illustrate some aspects of the nervous system might be useful however tools and equipment used for theses investigations must be sanitized in between use as per COVID19 laboratory safety protocols. Teachers can model effective use and demonstrate the concepts they wish to illustrate. Teachers are encouraged to confirm best and safe practices with the health and safety Directives for Schools and School Districts, if uncertainties arise about the protocols to follow.
3	Nervous and Endocrine Systems	116-7, 314-2, 317-1	Limit Treatment	Limit the nervous system to the explorations about the structure and function of neurons, CNS and discuss the reflex arcs.

Biology 121/122

3	Nervous and Endocrine Systems	116-7, 117-11, Defer 314-3, 317-1, 317-2	Teaching about the Endocrine System can be effectively explored in context with Human Reproduction as many of the glands and hormones that are part of the Endocrine System regulate the feedback loops of Human Reproductive system. Build coherence by weaving the historical perspectives and the nature of biological inquiry (STSE) throughout the unit. Teachers should proceed as time permits. Alternately, use for enrichment.
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2020-21 High School Re-Entry: Guidelines for prioritizing science learning outcomes

Course: Introduction to Environmental Science

Code: 120

Published: 2012

Disclaimer:

The guidelines outlined in this document are in place for the 2020-2021 academic year. EECD will determine their applicability for subsequent academic years on a as needed basis. This guidance document is to be used in conjunction with the 2012 curriculum document for Introduction to Environmental Science 111/112. The curriculum documents are accessible from the **Disclaimer** section of this document.

Unit No.	Title	Outcome	Action	Explanation
		Prioritized Topics for Study: Climate Change and Energy Resources		Climate Change and Energy Resources are prioritized topics for in-depth investigation. These topics are multi-faceted by nature and can provide touchstone learning opportunities for the areas that have been deferred.
1	Population Growth and Resource Limitations	Explain the concepts of limiting factor and carrying capacity in the context of species population growth . (p. 11)	Limit Treatment	Limit the number of examples presented through direct instruction. Provide opportunities for learners to discover the connections between the learning outcomes listed on page 11. The outcomes presented in Unit 1 (pages 11 and 13) can be woven together to provide students with opportunities for deep exploration current environmental issues.
1	Population Growth and Resource Limitations	Understand and be able to use of the term " natural capital " and "natural income". (p. 11)	Limit Treatment	Introduce terminology, then explore in relevant contexts. Unpack terms and concepts with relevant contexts; regional, national and global.

Intro. Environmental Science 120

	Population Growth and Resource Limitations	Examine the growth and fluctuations of human population globally, regionally and locally. (p. 11)	Limit Treatment	Limit the number of examples presented through direct instruction. The separate outcomes can be woven together to provide coherence for environmental issue(s) under examination.
	Population Growth and Resource Limitations	Examine the ways in which population fluctuations are measured and tracked. (p. 11)	Limit Treatment	Limit the number of examples presented through direct instruction. The separate outcomes can be woven together to provide coherence for environmental issue(s) under examination.
1	Population Growth and Resource Limitations	Evaluate Earth's carrying capacity , human population growth and its demands on natural capital , and consumer culture. (p. 11)	Limit Treatment	Limit the number of examples presented through direct instruction. Provide opportunities for learners to discover the connections between the learning outcomes listed on page 11. The outcomes presented in Unit 1 (pages 11 and 13) can be woven together to provide students with opportunities for deep exploration current environmental issues.

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1	Researching Current Environmental Issues	Explore one or a few local or regional issues with respect to the impact on the environment, and on history, economics and social systems. (p. 13)	Limit Treatment	Limit the number of examples presented through direct instruction. Provide opportunities for learners to explore local or regional issues of personal interest.
1	Researching Current Environmental Issues	Practice research and presentation skills including experimenting to test environmental impact, identifying and accessing various organizations for information and expertise, and considering the legislation which impacts on environmental issues. (p.13)	Limit Treatment	Use of modelling and teamwork strategies in lieu of having students independently complete the first project on their own. For example, the teacher would pick a relevant local topic and assign aspects of the research to small groups and then model the organization, writing and presenting. This could be compacted rather than have each student do individual projects – the whole class could do this first project together, writing/researching sections before they move on to their individual projects.
1	Researching Current Environmental Issues	Explore how technology is used to gather and communicate information, and to address the issues. (p. 13)	Defer	Teachers should proceed as time permits. Alternately, use for enrichment.

Intro. Environmental Science 120

1	Researching Current Environmental Issues	Explore how past and current technologies have impacted our study and understanding of the environment, and have been developed to solve environmental issues. (p. 13)	Defer	Teachers should proceed as time permits. Alternately, use for enrichment.
2	Ecology	Understand that the biosphere is a complex system of living things that interact with each other and extend into the geosphere, atmosphere, and hydrosphere. (p. 15)	Limit Treatment	Combine all of the outcomes (5) related to the complexity, organization of Earth spheres and cycling of matter and energy to create cohesion and support deeper learning.
2	Ecology	Demonstrate an understanding of evolution & natural selection . Briefly examine the history of life on earth (<i>sic</i>). Consider that mass extinctions have occurred in the past. (p.15)	Limit Treatment	Embed this outcome within that contexts of the outcomes in the Ecology section of this unit. Do not treat as separate.

Intro. Environmental Science 120

2	Environmental Awareness	All 7 outcomes historical perspectives land and water use; traditional ecological knowledge and western worldviews; and modern environmental movement. (p. 17)	Limit Treatment	Launch Unit 2 with the Environmental Awareness sub-topic. The unit can be explored through a comparative analysis of worldviews. Alternately, extend to include a project where small groups address each one of these topics then showcase their learning.
2	Sustainable Ecosystems and Communities	Demonstrate an understanding of the dynamics of healthy and sustainable ecosystems. (p. 19)	Limit Treatment	Weave the principles and requirements for sustainable human communities together to provide cohesion of learning for students. Understanding the dynamics of sustainable development is predicated on these principles and requirements.
3	Investigating Environmental Issues	Topics for Study: Agriculture, Forests, Fresh Water, Ocean Fisheries, and Air and Water Pollution. (pp. 21-29 & 34-35)	Defer	<i>Agriculture, Forests, Fresh Water, Ocean Fisheries, and Air and Water Pollution</i> . Teachers should proceed with investigating these topics as time and student interest permits.
3	Investigating Environmental Issues	Prioritized Topics for Study: Climate Change and Energy Resources (pp. 30-33)		Climate Change and Energy Resources are prioritized topics for in-depth investigation. These topics are multi-faceted by nature and can provide touchstone learning opportunities for the areas that have been deferred.

2020-21 High School Re-Entry: Guidelines for prioritizing science learning outcomes

Course: Advanced Environmental Science

Code: 120

Published: 2018

Disclaimer:

The guidelines outlined in this document are in place for the 2020-2021 academic year. EECD will determine their applicability for subsequent academic years on a as needed basis. This guidance document is to be used in conjunction with the 2018 curriculum document for Advanced Environmental Science. The curriculum documents are accessible from the **Disclaimer** section of this document.

GCO	Title	SCO	Action	Explanation
	Student Project	Parts 1 and 2		Prioritize the learning and skills building required for a high school level science research project. Working individually or collaborating with a peers, the student will select an environmental issue of personal interest related to one of the many broad themes of SCO 2.0 Earth Systems to investigate, analyze, and present the issue; design and carry out an original experiment; discuss and explore a sustainable solution to an environmental issue.
1	Introduction to the human sphere: recognize and appreciate the variety of ways people understand and interact with the natural world	1.1: Review the discipline of Environmental Science	Limit Treatment	Outcome 1.1 can be discussed in the context of <i>SCO 1.3 and 1.4</i> . As the issues are discussed, the teacher can discuss careers that are related to the topics from the legislators to the lawyers to the researchers who track environmental impacts.
1	Introduction to the human sphere.	1.2: Demonstrate an understanding of different views of the natural world.	Defer	<i>SCO1.2</i> does not need to be addressed as a separate issue. Different views of the natural world should be woven into other discussions not discussed in isolation.

Advanced Environmental Science 120

2	Earth Systems: Develop an understanding of the issues and their impact on the dynamics of biotic and abiotic components of the environment	2.1: Develop an understanding of how Earth's spheres interact and support the biosphere.	Defer	Embed <i>SCO 2.1</i> in the context of the four subsection of outcomes in the unit. Knowing that in their comings and goings in their communities, students are exposed to air, soil and water daily, consider using this phenomena as an instructional opportunity as part of one big picture systems learning for <i>SCOs 2.2, 2.3, 2.4 and 2.5</i> .
2	Earth Systems	2.2: Develop a general understanding of biosphere dynamics and the importance of biodiversity at the species, community and ecosystem levels	Limit Treatment	Address <i>SCO 2.2</i> through the major student project. Assign one of the Big Idea topics to small groups of students (e.g. biosphere dynamics, soils, water and atmosphere dynamics). Working in groups, students conduct research, identifying relevant content, then present / communicate finding to audience; peers, industry and community members, parents, etc., virtually or face to face, as part of the major project component of the course.
2	Earth Systems	2.3: Examine and develop an understanding of soil composition and ecology , and current issues in agriculture and forestry	Limit Treatment	Address <i>SCO 2.3</i> through the major student project. Assign one of Big Idea topics to small groups of students (e.g. biosphere dynamics, soils, water and atmosphere dynamics). Working in groups, students conduct research, identifying relevant content, then present / communicate finding to audience; peers, industry and community members, parents, etc., virtually or face to face, as part of the major project component of the course.
2	Earth Systems	2.4: Examine and demonstrate an understanding of fresh and salt water composition and ecology , and current issues in water resources and fisheries	Limit Treatment	Address <i>SCO 2.4</i> through the major student project. Assign one of Big Idea topics to small groups of students (e.g. biosphere dynamics/biodiversity, soil/ecology, water/ecology and atmosphere dynamics/global warming). Working in groups, students conduct research, identifying relevant content, then present / communicate finding to audience; peers, industry and community members, parents, etc., virtually or face to face, as part of the major project component of the course.

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2	Earth Systems	2.5: Examine and demonstrate an understanding of atmosphere composition and dynamics , and current issues in air pollution and global warming	Limit Treatment	Address SCO 2.5 through the major student project. Assign one of Big Idea topics to small groups of students (e.g. biosphere dynamics, soils, water and atmosphere dynamics). Working in groups, students conduct research, identifying relevant content, then present / communicate finding to audience; peers, industry and community members, parents, etc., virtually or face to face, as part of the major project components throughout the course.
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2020-21 High School Re-Entry: Guidelines for prioritizing science learning outcomes

Course: Human Physiology

Code: 110

Published: 2016

Disclaimer:

The guidelines outlined in this document are in place for the 2020-2021 academic year. The Department of Education and Early Childhood Development will determine their applicability for subsequent academic years on a as needed basis. This guidance document is to be used in conjunction with the 2016 curriculum document for Human Physiology 110. The curriculum documents are accessible from the **Disclaimer** section of this document.

GCO	Title	SCO	Action	Explanation
	Scientific Literacy	Science inquiry, problem-solving and decision making		Prioritize scientific literacy. <i>Human Physiology</i> as an elective provides a rich opportunity for students to apply scientific literacy skills while pursuing personal interests rooted in the life sciences. These include the ability to plan and conduct investigations and to interpret and apply the data collected. Students should demonstrate their ability to: propose scientific questions; state a prediction and a hypothesis based on an observed pattern of events; identify major variables to control and test in investigations; plan a set of steps to solve a practical problem; record observations and collect relevant data; classify by attributes and display relevant data; analyze data trends and identify discrepancies and sources of error; draw conclusions and explore next steps; and apply learning to a broader context situate in local challenges with global significance.
1	Student Wellness Plan	SCOs 1.1 and 1.2; 2.4; 3.4; 4.4; & 5.4		Prioritize the Wellness Plan. The New Brunswick Wellness Strategy (2014-2021) calls upon all New Brunswick residents; this includes students, to create wellness-supporting environments in New Brunswick where people have the opportunity to live a life of health and wellbeing in their homes, schools and communities. The prioritization of healthy living and well-being with a focus on the following areas: mental fitness and resilience, healthy eating, physical activity, and tobacco-free living, is of paramount importance especially during these time of uncertainty created by the global pandemic. More information here: https://www.wellnessnb.ca/about/
2	Human Digestive System	SCO 2.1, 2.2, Limit Treatment & 2.3		Each SCO for GCO 2.0 should return learners to the Wellness Plan providing opportunities for robust discussions, collaborative investigations, discussions and sharing of ideas, SMART goal setting, project management and celebrating meeting project milestones, throughout the semester/term.

3	Musculoskeletal and Integumentary 🔴🟡	SCOs 3.1, 3.2, & 3.3	Limit Treatment	The relationship between the nervous and musculoskeletal systems should be optimized by combining GCO 3.0 and 6.0 (e.g. muscle control is carried out by the nervous system). The integumentary system which comprises the skin and its appendages should not be treated as a discrete subtopic rather embedded within the context of its function to the whole human body system. Each SCO for GCO 3.0 should return learners to the Wellness Plan providing opportunities for robust discussions, collaborative investigations, discussions and sharing of ideas, SMART goal setting, project management and celebrating meeting project milestones, throughout the semester
4	Circulatory and respiratory systems 🔴	SCOs 4.1, 4.2, & 4.3	Limit Treatment	The relationship between the integumentary and circulatory systems should be optimized by combining segments of GCO 3.0 and 4.0 (e.g. how does the skin and blood flow control thermoregulation; Capillaries near the surface of the skin open when human body needs to cool off and close to conserve heat). Each SCO for GCO 4.0 should return learners to the Wellness Plan providing opportunities for robust discussions, collaborative investigations, discussions and sharing of ideas, SMART goal setting, project management and celebrating meeting project milestones, throughout the semester/term.
5	Endocrine and Reproductive Systems	SCOs 5.1, 5.2, & 5.3	Limit Treatment	Each SCO for the GCO 5.0 should return learners to the Wellness Plan providing opportunities for robust discussions, collaborative investigations, discussions and sharing of ideas, SMART goal setting, project management and celebrating meeting project milestones, throughout the semester/term.
6	Nervous system	SCOs 6.1, 6.2, & 6.3	Limit Treatment	The relationship between the nervous and musculoskeletal systems should be optimized by combining GCO 3.0 and 6.0 (e.g. what makes the muscle contract; muscle control is carried out by the nervous system). Each SCO for GCO 6.0 should return learners to the Wellness Plan providing opportunities for robust discussions, collaborative investigations, discussions and sharing of ideas, SMART goal setting, project management and celebrating meeting project milestones, throughout the semester/term.



Curriculum prioritizing tips:

When limiting treatment, teachers are delivering instruction for learning at awareness levels to save time for prioritized / essential concepts and content.

PRIORITIZE content and learning.

What are the enduring understandings I want students to remember many years from now? • What is most important for students to know, think, and do at the end of the course?

FOCUS on the depth of instruction, not the pace.

Taking the time to provide patient, in-depth instruction allows for issues related to unfinished learning to arise naturally when dealing with new content, allowing for just-in-time instruction and re-engagement of students in the context of grade-level work.

Limiting treatment of instruction:

(1) As you start a science unit, refer to the prioritized curriculum guidelines to determine the key skills and understandings that students need to access the work. Group similar outcomes together to increase efficiency, avoid repetition and redundancy.

ASK YOURSELF: What knowledge or skills do students bring to the class that the course will build on? Are there prerequisite skills or understandings that students need to succeed? For example, if you expect students to "use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms", a grade 10 science outcome, they will need to understand how to "analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred"—a middle school science expectation.

(2) Create an activity or quick concept check to see if students have mastered those skills and ideas.

(3) Review students' responses and adjust instruction accordingly with "just-in-time" support.

(4) Create another activity or concept check designed to see whether all students now understand.

(5) Use assessments as an opportunity for feedback.

ASK YOURSELF: Do you need to plan scaffolding and differentiation for individual students? Then use videoconferencing, break-out rooms, and virtual office hours to provide individual feedback.

(6) As the next unit approaches, look again at the priority content, and the handful of most important skills and knowledge students need. Process begins again with step (1).

Adapted from *[Your Guide to Teaching and Learning in a Pandemic](#)*. EdWeek Update August 5, 2020