



The Bishop Strachan School
Department Name: Canadian, Business and World Studies

**Course Title: Physical Geography: Patterns,
Processes and Interactions**

Grade Level: 11

Ministry Course Code: CGF3M

Teacher's Name: Danny Schryburt and Charlotte Fleming

Developed by: Danny Schryburt

Adapted from: Kathy Bell

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Revised by: Danny Schryburt and Charlotte Fleming

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Developed from: The Ontario Curriculum Grades 11 and 12 Canadian and World Studies

Text: None

Prerequisite: Geography of Canada, Grade 9, Academic

Credits: 1.0

Length: 110 hours

Course Description/Rationale

This course examines the major patterns of physical geography and the powerful forces that affect them. Students will investigate the dynamic nature of the earth, the evolving relationship between the planet and its people, and the factors that limit our ability to predict the changes that will occur. Students will use a wide range of geotechnologies and inquiry methods to investigate the distribution and interaction of the elements of their physical environment and to communicate their findings.

Overall Curriculum Expectations

Geographic Foundations: Space and Systems

1. Explain major theories of the origin and internal structure of the earth
2. Analyse the sources and nature of energy flows through the lithosphere, atmosphere, hydrosphere, and biosphere
3. Explain the physical processes that create landforms, climate, soils, and vegetation

Human-Environment Interactions

4. Explain how the earth provides both a habitat for life and a resource for society
5. Evaluate the impact of natural systems on people and their activities
6. Evaluate the impact of human life on the environment
7. Explain the importance of stewardship and sustainability as guiding principles for human use of the physical environment

Global Connections

8. Explain the reasons for the global patterns of continents and oceans, landforms, climate, soils, and vegetation
9. Explain the importance of water to global systems
10. Analyse local, regional, and global issues related to physical geography

Understanding and Managing Change

11. Analyse the causes and consequences of climate change
12. Analyse how changes in natural systems are caused by natural phenomena
13. Explain how human uses of the earth, especially uses involving technology, cause changes over time in natural systems

Methods of Geographic Inquiry and Communication

14. Use the methods and tools of geographic investigation and inquiry to locate, gather, evaluate, and organize information
15. Analyse and interpret data gathered through research and investigation, using a variety of methods and geotechnologies
16. Communicate the results of geographic inquiries and investigations, using appropriate terms and concepts and a variety of forms and techniques.

Instructional Hours Summary

Course Content Unit	Classroom Hours	Field Trip Hours	Exam Hours	Independent Study	Total
1. Planetary Systems: Quest For Balance	22	4			26
2. Structure of the Earth	24				24
3. Gradational Forces	24				24
4. Weather and Climate	23				23
5. Summative	7	6			13

Total	100	10		110
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Unit Descriptions

Unit 1 – Planetary Systems: Quest For Balance

This unit introduces students to the overall framework of physical geography. They will gain an understanding of the sources and nature of energy flows through the lithosphere, atmosphere, hydrosphere and biosphere with emphasis placed on our water systems and biodiversity. They will analyse their roles in impacting natural systems and how this influences human activity. Students will develop a global perspective on the physical world and an appreciation of how the natural world shapes their lives.

Unit 2 – Structure of the Earth

The major purpose of this unit is to explain the origin and internal structures of the earth so that students appreciate that natural systems operate inside the earth, as well as outside. The energy which drives these systems is responsible for the tectonic forces which attempt to “build up” the earth’s surface creating landforms. Through an analysis of the earth’s interior, students will understand the composition and formation of rocks which are then acted upon by tectonic forces such as folding, faulting and volcanic activity to produce specific structures. Through an understanding of plate tectonics, students will develop an awareness of the disastrous effects which can result in regions of the world where these forces are prevalent. Enriched natural resources are a beneficial effect of tectonic forces, but they must be used judiciously and with a philosophy of environmental stewardship.

Unit 3 – Gradational Forces

Gradational forces in combination with tectonic forces produce the great variety of landscapes found on the surface of the earth. In this unit students will demonstrate an understanding of the relationship between climatic forces and the landscapes which they help shape. They will describe the impact that people and their activities have on the physical environment. Understanding how both natural and human activity affect the physical earth leads to possible solutions for present and future environmental management issues.

Unit 4 – Weather and Climate

Weather and climate are the result of complex systems at work in the atmosphere. In this unit students will gain an overview of global climatic patterns and their gradual changes over time. They will gain insight into the combination of factors that produce local weather conditions and the catastrophic events that may follow. Using a variety of geographic skills, methods, and technologies, they will gather, analyse and synthesize statistical information which will help them to appreciate the complexities of tracking and predicting weather patterns and climatic trends.

Unit 5 – Summative – Independent Field Study

Students will examine a local physical geographic issue through the use of field work. They will collect, organize, synthesize and evaluate geographic data for a local area. The results will be communicated through maps and other visuals, along with a report indicating the issue, inventory and recommendations for sustainability.

Teaching/Learning Strategies

Lecture	Brainstorming	Group Critique
Demonstration	Conferencing	Videotape Critique
Reading	Research Project	Self Analysis
Structured Discussion	Debate	Peer Analysis
Organizers	Topographic Map Interpretation	Game
Diagramming	GIS	Independent Study

Case Study	Role Play	Field Trip
Conference	Discovery	Note Making
Guest Speaker	Group Work	Model Building
Researching	Cooperative Learning	Presentation

Assessment & Evaluation

Paper and Pencil	Performance Models	Personal Communication	Other
Tests	Projects	Classroom Discussion	Teacher Anecdotal Records
Work Stations	Presentations	Conferences	Checklists
Examination	Role Playing	Self Evaluation	Rubrics
	Demonstration	Peer Evaluation	
	Diagrams		
	Journals		
	Models		

Assessment/Evaluation

Seventy per cent (70%) of the final grade will be based on evaluations conducted throughout this course. This portion of the grade should reflect the students' *most consistent level of achievement* throughout this course, although special consideration should be given to the more recent evidence of achievement.

Thirty per cent (30%) of the final grade will be based on a final evaluation in the form of an examination, performance, essay, and/or other method of evaluation suitable to the course content and administered towards the end of the course.

Teachers will ensure that student work is assessed and/or evaluated in a balanced manner with respect to the four categories (see below), and that achievement of particular expectations is considered within the appropriate categories. The four categories should be considered as interrelated, reflecting the wholeness and interconnectedness of learning. The categories of knowledge and skills are:

- Knowledge and Understanding (20-30%)
- Thinking (20-30%)
- Communication (20-30%)
- Application (20-30%)

Mark Breakdown	Unit Title/Length	Overall Expectations (see pg 2)	Course Evaluations	
70%	Unit 1 Planetary Systems: Quest For Balance 21 hours	1, 2, 3, 4, 5, 6, 7, 10, 11, 13, 14, 15, 16	Urban impacts on water percolation	
			Test	
			Biodiversity pamphlet	
	Unit 2 Structure of the Earth 25 hours	1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13, 14, 15, 16	GIS assignment: locating an earthquake epicenter	Test
				Energy security report
				Ecotourism web site
	Unit 3 Gradational Forces 25 hours	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	GIS assignment: Glaciation of Canada	Test
				Earthwatch journal
				Test
	Unit 4 Weather and Climate 27 hours	2, 3, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16	GIS assignment: weather mapping	Test
				Exam
				Exam
30%	Summative 12 hours	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	Niagara Escarpment quarry expansion field study	

Course Resources

Videos - CBC News in Review, CBC Geologic Journey

Web Sites

Current Newspaper and Magazine Articles

Topographic Maps

Air Photos

Satellite Images

ArcGIS

Mineral and Rock Samples

Field Guides

Weather Maps

Climate Statistics

Books

Achievement Chart – Canadian and World Studies, Grades 9–12

Categories	50–59% (Level 1)	60–69% (Level 2)	70–79% (Level 3)	80–100% (Level 4)
Knowledge and Understanding <i>Subject-specific content acquired in each grade (knowledge), and the comprehension of its meaning and significance (understanding)</i>				
The student:				
Knowledge of content (e.g., facts, terms, definitions)	– demonstrates limited knowledge of content	– demonstrates some knowledge of content	– demonstrates considerable knowledge of content	– demonstrates thorough knowledge of content
Understanding of content (e.g., concepts, ideas, theories, procedures, processes, methodologies, and/or technologies)	– demonstrates limited understanding of content	– demonstrates some understanding of content	– demonstrates considerable understanding of content	– demonstrates thorough understanding of content
Thinking <i>The use of critical and creative thinking skills and/or processes</i>				
The student:				
Use of planning skills (e.g., focusing research, gathering information, organizing an inquiry, asking questions, setting goals)	– uses planning skills with limited effectiveness	– uses planning skills with some effectiveness	– uses planning skills with considerable effectiveness	– uses planning skills with a high degree of effectiveness
Use of processing skills (e.g., analysing, generating, integrating, synthesizing, evaluating, detecting point of view and bias)	– uses processing skills with limited effectiveness	– uses processing skills with some effectiveness	– uses processing skills with considerable effectiveness	– uses processing skills with a high degree of effectiveness
Use of critical/creative thinking processes (e.g., inquiry process, problem-solving process, decision-making process, research process)	– uses critical/creative thinking processes with limited effectiveness	– uses critical/creative thinking processes with some effectiveness	– uses critical/creative thinking processes with considerable effectiveness	– uses critical/creative thinking processes with a high degree of effectiveness
Communication <i>The conveying of meaning through various forms</i>				
The student:				
Expression and organization of ideas and information (e.g., clear expression, logical organization) in oral, visual, and written forms	– expresses and organizes ideas and information with limited effectiveness	– expresses and organizes ideas and information with some effectiveness	– expresses and organizes ideas and information with considerable effectiveness	– expresses and organizes ideas and information with a high degree of effectiveness

Categories	50–59% (Level 1)	60–69% (Level 2)	70–79% (Level 3)	80–100% (Level 4)
Communication (cont.)				
The student:				
Communication for different audiences (e.g., peers, adults) and purposes (e.g., to inform, to persuade) in oral, visual, and written forms	– communicates for different audiences and purposes with limited effectiveness	– communicates for different audiences and purposes with some effectiveness	– communicates for different audiences and purposes with considerable effectiveness	– communicates for different audiences and purposes with a high degree of effectiveness
Use of conventions (e.g., conventions of form, map conventions), vocabulary, and terminology of the discipline in oral, visual, and written forms	– uses conventions, vocabulary, and terminology of the discipline with limited effectiveness	– uses conventions, vocabulary, and terminology of the discipline with some effectiveness	– uses conventions, vocabulary, and terminology of the discipline with considerable effectiveness	– uses conventions, vocabulary, and terminology of the discipline with a high degree of effectiveness
Application <i>The use of knowledge and skills to make connections within and between various contexts</i>				
The student:				
Application of knowledge and skills (e.g., concepts, procedures, processes, and/or technologies) in familiar contexts	– applies knowledge and skills in familiar contexts with limited effectiveness	– applies knowledge and skills in familiar contexts with some effectiveness	– applies knowledge and skills in familiar contexts with considerable effectiveness	– applies knowledge and skills in familiar contexts with a high degree of effectiveness
Transfer of knowledge and skills (e.g., concepts, procedures, methodologies, technologies) to new contexts	– transfers knowledge and skills to new contexts with limited effectiveness	– transfers knowledge and skills to new contexts with some effectiveness	– transfers knowledge and skills to new contexts with considerable effectiveness	– transfers knowledge and skills to new contexts with a high degree of effectiveness
Making connections within and between various contexts (e.g., past, present, and future; environmental; social; cultural; spatial; personal; multidisciplinary)	– makes connections within and between various contexts with limited effectiveness	– makes connections within and between various contexts with some effectiveness	– makes connections within and between various contexts with considerable effectiveness	– makes connections within and between various contexts with a high degree of effectiveness