

Course Profile

Geography of Canada

Grade 9
Academic

• *for teachers by teachers*

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Unit # 1: Canada's Global Connections

Time: 1350-1500 minutes

Unit Developers: M. Austin, J. Sweeney, London District Catholic School Board

Development Date: April, 1999

Unit Description

This unit has a dual purpose: to introduce students to the study of geography and to help students begin to develop a global perspective. Students will appreciate that geography has both human and physical aspects. They will become familiar with the tools which a geographer employs and with some of the career opportunities available. The unit will also reinforce skills such as scale, direction, and latitude and longitude which have been previously taught in the elementary programs. Students will also begin to understand Canada's connections to the world through their study of trade and development. Finally, students will examine Canada's involvement in world organizations. This unit will continue the students' journey in understanding their responsibility as stewards of the earth and the need for social justice in the world.

Strands(s) and Expectations

Ontario Catholic School Graduate Expectations: 2b,2c,3c,3f,4a,4f,5a,5e,5g,7e,7f

Strand(s): Global Connections/Understanding and Managing Change/Methods of Geographic Inquiry

Overall Expectations: GCVO1D,GCVO2B,GCVO3B,UMVO3B,MIVO1B,MIVO2B,MIVO3B

Specific Expectations:

GC101D,GC102D,GC103B,GC105B,GC202D,GC3010,GC302D,UM204D,
MI101B,MI102B,MI201D,MI203D,MI204B,MI206B,MI208B,MI210D,MI211D,MI304D

Activity Titles (Time + Sequence)

Activity 1	Introduction to the Study of Geography	150 min
Activity 2	Mapping	150 min
Activity 3	Understanding of Spatial Organization: "Mental Maps, Latitude and Longitude and Time Zones"	225-300 min
Activity 4	Canada and the World - Initial Connections	150-225 min
Activity 5	Introduction: Canadian Connections to World Organizations	150-225 min
Activity 6	Canadian Involvement in World Organizations	450-525 min

Unit Planning Notes

- Book computer lab time for activities 1, 3, 6.
- Consult guidance department for career information.
- Reserve library for research related to activities 3 and 6.
- Check web sites for information needed in activities 1 and 6.
- Collect samples of job advertisements, newspaper and magazine articles showing bias.
- Check IEPs for identified students.

Prior Knowledge Required

- Check expectations contained in Grade 7 & 8 Geography curriculum.
- To assess the skill level of students, administer a diagnostic test looking at scale, direction, latitude and longitude and time zones. Results will assist teacher in determining what level of review/remediation is necessary.
- Students need to be familiar with the computer and how to access the Internet.

Teaching/Learning Strategies

Whole Group

- brainstorming, questioning, discussion, concept clarification, lecturing

Small Group

- inquiry process, issue-based analysis, classifying, collaborative learning, computer-assisted learning, graphing, research

Individual

- note-making, organizers, computer-assisted learning, map-making, research, visualization

Assessment/Evaluation

Diagnostic and Formative Assessment:

Roving Conferences; Formal Teacher Observation/Ad Assessment Rubric/Student-generated Map Assessment Rubric/Peer Evaluation of Group Performance

Summative Evaluation:

Formal Teacher Observation/Cartographic Assessment Rubric/Written Report Assessment Rubric/Oral Presentation Assessment Rubric/Student Self-Evaluation Rubric.

Resources

Print:

Circular 14 Texts (ie. Canada, Land of Diversity; Canada Exploring New Directions; Geolabs 1,3) Atlas

Audio-Visual:

Voyage of Discovery; Latitude and Longitude

Computer:

Internet/pcglobe/Choices/Latitude and Longitude/Estat/GIS

Other:

Guidance Centre Career Monographs Newspaper and Magazine Articles
School Resource Teachers

Activity # 1: Introduction to the Study of Geography

Time: 150 minutes

Description

This activity will introduce students to the subject of geography, the tools of a geographer, and career opportunities in the field.

Strand(s) and Expectations

Ontario Catholic Graduate Expectations: OCSG5a, OCSG5g

Strands: Understanding and Managing Change; Methods of Geographic Inquiry

Overall Expectations: UMVO3B, MIVO1B

Specific Expectations: UM204D, MI101B, MI201D

Planning Notes

- Administer a diagnostic test on geographic skills (i.e. scale, direction, etc.) to help guide the teacher in planning prior to beginning the activities.
- Contact guidance department for information on careers in geography and have brochures available.
- Collect a variety of job advertisement samples.
- Arrange for guest speakers in related careers.
- Review student IEP to make adjustments to meet specific student needs.
- Prepare a brief summary of the requirements of the presentation in culminating Activity #6.

Prior Knowledge Required

- familiarity with co-operative learning group expectations and strategy
- familiarity with Grade 7 Unit: “Themes of Geographic Inquiry”

Teaching/Learning Strategies

- (a) The teacher should take some time at the very onset of this unit to describe the culminating task in Activity #6. This should provide the focus for the activities that precede the culminating report and presentation.
 - (b) The teacher should provide a brief summary of this culminating activity.
- (a) The teacher poses the question “What is Geography?” Students jot down any words or phrases that describe geography. Show the video “Voyage of Discovery”. While watching, students add additional words that describe geography. Teachers may have the students write their thoughts about the beauty of the planet God has created for each one of us. A short discussion could follow about what our responsibilities are as stewards of the earth.
 - (b) Divide the class into small groups. Students compare their lists. Their task is to place the words into two groups. The words in each group should be connected. Each group should be given a title and the lists put on the board.
 - (c) The class examines the lists and determines what is common (Idea of Human/Physical Geography). Collaboratively, the class writes a definition of geography in their notes.
- (a) The students brainstorm what the tools of a geographer are. Teacher should add new tools if not listed (e.g., Geographic Information Systems, global positioning, photogrammetry, automated digital mapping, etc.). Create a list of about 10 tools.
 - (b) Students are to research what each of the tools is and how it is used in geography. Information should be recorded in notes.
- (a) The class generates a list of careers associated with geography. Teacher should add careers which may have been missed (e.g. hydrologist, meteorologist). Special attention should be paid to careers associated with the international organizations studied at the end of the unit (i.e. water management, agricultural consultant).

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- (b) Teacher should familiarize students with resources available to research different careers in geography.
 - (c) Students create an employment advertisement for a career where a background in geography is necessary.
 - (d) Optional Activity: Teachers could arrange for a panel of guest speakers etc.

Assessment/Evaluation

- Informal teacher observation while students work in small groups to discuss student use of geographic terms
- Roving Conference while students are researching tools of a geographer
- Appendix 1.1 Advertisement Rubric

Resources

1. Video - national Geographic Society “Voyage of Discovery”
2. Internet - GIS Resource: <http://www.geo.ed.ac.uk./home/gswwww.html>
 - Array Systems: <http://www.array.ca>
 - GeoStrategies: <http://www.geo.strategies.ro>
3. Textbook
4. Guidance Department
 - Computer Program: “Choices”
 - Guidance Centre Career Monographs e.g. geophysicist
 - Internet
5. Social Studies History and Geography Curriculum Document
6. OAGEE/Careers/Universities: Careers in Geography Publications
7. School Resource Centre

Accommodations

- Some students may require a scribe to assist with note taking.
- Students with special needs may only describe some of the tools.
- Provide individual support in finding information on a career.
- Substitute the employment advertisement with a paragraph on a career.
- Some more capable students may be challenged to find examples of related careers in newspaper advertisements.

Appendices

Appendix 1.1 Advertisement Rubric

Activity # 2: Mapping

Time: 150 minutes

Description

This activity will familiarize students with different types of maps, the elements of a map, and map skills such as scale and direction. Students will also apply these skills in the creation of their own map of an imaginary island. Mapping skills need to be honed for subsequent activities.

Strand(s) and Expectations

Ontario Catholic Graduate Expectations: OCSG5a, OCSG5g

Strands: Methods of Geographic Inquiry

Overall Expectations: MIV01B

Specific Expectations: MI201D, MI204B, MI208B, MI211D, MI101B, MI213B

Planning Notes

- Collect a variety of wall maps (6 or 7) including general-purpose, thematic and topographic maps.

Prior Knowledge Required

- Geographic skills in scale and direction.
- Results of diagnostic test reveal a need to review these skills which could take place between Activity 1 and 2. Suggested resources are listed.

Teaching/Learning Strategies

1. (a) Individually, students examine a variety of maps located around the classroom (6-7). They create an organizer which compares the different maps (e.g. similarities, differences, purposes).
(b) As a class, list the similarities and differences observed from the different maps. Compose notes outlining the elements which are common to all maps (e.g. scale, direction, symbols, legend, title, etc.).
(c) Brainstorm the purposes of the different maps. Define general-purpose, thematic, and topographic maps.
(d) A possible enrichment activity could be the following field trip. Teacher should try to arrange a field trip to a university, college or business where Geographic Information Systems are employed. This would be an excellent opportunity for the students to appreciate the technological advances which have been made in mapping.
(e) Students are to create a fantasy island map which incorporates all of the elements of a map. Before beginning the assignment, the teacher and students should collaboratively create the evaluation rubric which will be used to evaluate the finished maps. Rubric criteria should include areas such as: inclusion of necessary map elements, quality of work, creativity, and originality. This assignment is an opportunity for the teacher to introduce the students to Geographic Information Systems and have them use a program such as MF Teach to assist in the creation of their island maps.

Assessment/Evaluation

- Formal teacher observation checklist of students' ability to generate and use a geographic organizer
- Fantasy Island rubric created with the students

Resources

1. Variety of maps: general-purpose, thematic, topographic;
2. Text
3. Text - Geolab 1: Geolabs 4, 5, 6, 7; Geolab3: Geolabs 2, 3, 4.

Accommodations

- Provide individual support in creation of maps (teacher or an appointed peer).
- Large base map may be needed for visually impaired students.
- Outline of the required organizer may be given to some students in advance.

Appendices

Appendix 1.4: Map Rubric

Activity # 3: Understanding of Spatial Organization - Mental Maps, Geographic Grid, Latitude and Longitude and Time Zones

Time: 150 - 225 minutes

Description

This activity will help students to develop a more accurate spatial picture of the regions of Canada with regard to boundaries, place names, latitude and longitude and time zones. Students will be introduced to Canada's connection to the rest of the world.

Strand(s) and Expectations

Ontario Catholic Graduate Expectations: OCSG2c, OCSG4f, OCSG5a, OCSG5e, OCSG5g

Strands: Global Connections/Methods of Geographic Inquiry

Overall Expectations: GCV02B, MIV01B

Specific Expectations: MI101B, MI102B, MI201D

Planning Notes

- Students work in groups as well as on an individual basis.
- Schedule library and computer lab time for students.
- Complete diagnostic requirements regarding the use of computer, especially the Internet.
- Teacher can have a list of some Internet sites prepared in advance for the research required.
- Contact librarian for suggestions on further sites that maybe useful to students.
- Ensure learners have parental/guardian permission for Internet access at school as required by board policy and restrict access to only those sites appropriate for the activity.

Prior Knowledge Required

- familiarity with locating places using longitude, latitude and grids
- familiarity with time zones

Teaching/Learning Strategies

1. (a) The teacher may write on the board: "Every image we have of a place, area or region whether known or unknown is a combination of factual data, incomplete information and personal bias or subconscious prejudices. What mental image or mental map do you have of

familiar and less familiar places?” The students are asked to visualize and discuss in general terms some of the features and characteristics of their rooms. The students follow a similar procedure with regard to a special and interesting place they have visited.

- (b) The students sketch their “mental map” of Canada (i.e. Provincial and Territorial boundaries and bodies of water) on chart paper, display and explain.
2. (a) The teacher shows a video on latitude and longitude and provides additional explanations of these concepts as required.
 - (b) The students, using the places noted in 1(a) and (b), identify the latitude and longitude coordinates. They make notes to better understand latitude and longitude after viewing a software program in the computer lab.
 - (c) The students determine Canada’s geographic extent using the grid coordinates and then complete teacher-generated work sheets demonstrating the concepts of latitude and longitude (atlas exercises and worksheets).
3. (a) The teacher gives a brief description of Sir Sandford Fleming’s contribution of time zone then provide students with a map of world time zones identifying the key components (ie, international date line, Prime Minister).
 - (b) The students summarize the key components in their notes.
 - (c) The teacher and students brainstorm the question: “Why has it been and is today so important to be familiar with time zones?” The responses are written on the board by the teacher with a summary note being recorded by the students in their notebooks.
 - (d) The students complete teacher-generated worksheets on time zone calculations for Canada and the world and the answers are discussed and corrected.

Assessment/Evaluation

- Teacher observation of individual and group activities to ensure accuracy and completeness
- Paper and pencil test on latitude and longitude and time zones

Resources

1. Video/Computer program on Latitude and Longitude
2. Library and Computer Lab
3. Atlas
4. GIS: MF Teach

Accommodations

- More capable students may be challenged to state the arrival times at different world airports.
- Some students may require an actual map of Canada to assist them in drawing their visualization.
- Provide peer/or teacher assistance with completing worksheets.
- Reduce the number of examples required for practising skills on the test.

Appendices

Activity # 4: Canada and the World - Initial Connections

Time: 225 minutes

Description

For students to successfully complete the culminating activity of assessing Canada's involvement in international organizations, it is important that they first are able to compare Canada to other countries and then begin to appreciate the connections between Canada and the world. In Activity 4, students will begin this process of comparison through their examination of statistics from the Human Development Index. Following this, students will discover Canada's connections with the world.

Strand(s) and Expectations

Ontario Catholic Graduate Expectations: OCSG3f, OCSG4f, OCSG5a, OCSG7e, OCSG7f

Strands: Global Connections; Methods of Geographic Inquiry

Overall Expectations: GCVO1D, GCVO2B, MIVO1B, MIVO3D

Specific Expectations: GC101D, GC301D, MI201D, MI204B, MI208B, MI211D

Planning Notes

- Gather necessary trade statistics and student-developed maps of the world.
- Locate sources for data on Canadian commodities.
- Prepare on chart paper a sample comparison organizer, using Canadian trade statistics.
- Locate sources for the Human Development Index statistics students will require.

Prior Knowledge Required

- familiarity with the concept of the Human Development Indices (ie. GNP, literacy rate)
- familiarity with different methods of graphing (e.g. bar, line, circle)

Teaching/Learning Strategies

- (a) Before the students examine statistics from the Human Development Index, it is important that the teacher explain how the index is determined and define terms (e.g., developed, developing, and less developed countries). Teachers should also introduce common misconceptions and biases about these terms. Students record in their notes how the selected statistics are determined (e.g., infant mortality rate).
 - (b) The teacher selects countries to be researched. They should be taken from the following regions: Africa, Asia, South America, Central America, and Australia. Canada is the representative from North America.
 - (c) Students in small groups obtain the necessary statistics and graph the information on large graph paper.
 - (d) Students present their findings to the class. Class discussion: How does Canada compare to other countries? What concerns should be raised in light of Catholic social teaching?
- (a) In small groups, students gather information about Canada's connections to the world (e.g., clothing labels, countries visited, friends and relatives, and newspapers) and map the information on enlarged world maps.

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- (b) Each group displays its world map and describes the connections it discovered. Students are asked to speculate if these connections have changed (e.g. map of friends and relatives may show a broader world distribution than twenty-five years ago). Students are assessed on their presentations by their peers, using the Oral Presentation Rubric (Appendix 1.2). Teachers should explain to the students how the rubric is to be used. A suggestion would be that 4-5 students independently assess each presentation. The class discusses why these connections are so important to Canada. Students record findings in notes.
3. (a) Class brainstorms to develop a working definition of commodity (e.g., minerals, fuels, forest and agricultural products). Teacher should familiarize students with resources available to research Canada's world trade in commodities (e.g., texts, atlases, computer programs - P.C. Globe, Estat).
- (b) Teacher designates several trade commodities to be graphed. Each student creates a bar graph to illustrate Canada's trade with regions of the world.
- (c) The class engages in an oral analysis of the graphic results. The discussion should look at the impact of Canada's share of commodities on the rest of the world. Students record points raised in the discussion in their notes.

Resources

1. Text
2. Computer - pcglobe
3. Atlas Resource ie. Canadian Oxford School Atlas pp 210
4. Do Justice! CCB Toronto (1987)
5. Christian Justice, St. Mary's Press, Minnesota (1995)
6. Newspaper

Assessment/Evaluation

- Roving Conference to ensure students are on task
- Formative peer assessment, using Oral Presentation Rubric Appendix 1.2

Accommodations

- Provide teacher or peer assistance with building graphs.
- Provide individual support in locating countries on world map and locating the pertinent statistics to be graphed.
- Assign a scribe to assist with note taking.
- Some students may need to be given the required statistics to reduce the workload required.

Appendix 1.2: Oral Presentation Rubric

Activity # 5: Introduction - Canada's Connections to the Rest of the World Through International Organizations

Time: 150 - 225 minutes

Description

The purpose of this activity is to prepare students for the culminating activity. To this end, students will review the necessary elements of a good, written report. Students will become familiar with what biases are and examine material to detect biases in order to research the mandates of international

organizations in a thorough manner. This exercise will help students to be critical when they research material in Activity 6. Finally, students will become familiar with Canada's connectedness to the rest of the world through an examination of the mandates of several international organizations. Students will examine these mandates in light of the Church's teachings on social justice.

Strand(s) and Expectations

Ontario Catholic Graduate Expectations: OCSG4a, OCSG5a, OCSG5e

Strands: Global Connections/Methods of Geographic Inquiry

Overall Expectations: GCVO2B, MIVO1B

Specific Expectations: GC101D, GC102D, GC203D

Planning Notes

- Schedule library for group research making use of library resources and electronic media (Internet) to access specific information on national and international organizations.
- Familiarize students with comparison organizers.
- Gather written materials which illustrate bias (newspaper and magazine articles).

Prior Knowledge Required

- Familiarity with Grade 6 Unit: "Canada and Its Trading Partners"
- Familiarity with computers, especially Internet access and outside resource facilities such as public, university, and college libraries as well as international organizations located locally
- Familiarity with Grade 8 Geography Unit: "Economic Systems"

Teaching/Learning Strategies

1. (a) The teacher arranges the students in small groups to discuss the statement: "An individual's views and interpretations of the world are indelibly influenced by personal and social identities, values, and experiences, which in turn, influence how the individual assesses and uses 'resources'. The teacher summarizes on the board the various types of biases identified by the groups.
(b) The teacher and the students create a list of common biases and suggest examples for each bias listed. (Biases could include: race, ethnic, gender, cultural, family structure, socioeconomic, appearances and disabilities). The students record the types and examples of biases in their notebooks.
(c) The students examine newspaper and magazine articles identifying the type of bias and explaining why it is a bias. These results are recorded on the board and in the students' notebooks.
2. (a) The teacher reviews the elements required for a professionally-written report by examining examples with the students. The teacher provides suggestions and discusses how to deliver a quality oral presentation.
(b) The students make notes on the critical aspects for the delivery of a successful oral presentation.
3. (a) The teacher leads a discussion on how Canada is connected or linked to the rest of the world. Cite examples of organizations which fit under each heading: Humanitarian, Political,

Economic, Defense/Military, Arts and Science. Suggest what the mandate of the organization might be. The teacher expands the list, if necessary (e.g., Canadian Council of Catholic Bishops, United Nations, Commonwealth, CIDA, NATO, NORAD, NAFTA, Peace and Development, World Trade Organization, International Olympic Committee, Canadian International Monetary Fund, World Bank, Amnesty International, Greenpeace).

- (b) The students record in their notebooks a summary of the mandates of selected organizations discussed by the group, followed by a personal reflection on which of the organizations' mandates support the Church's teachings on social justice.

Assessment/Evaluation

- Roving conference
- Formal teacher observation

Resources

1. Newspapers, magazines and other written documents
2. Internet access for locating organizations
3. Guest speakers

Accommodations

- Appoint a peer to scribe some of the required notebook summaries or provide summaries.
- Assign specific organizations to selected students to research with peer assistance.
- Provide the "mandate" of the organizations to minimize research required or provide the specific references.
- Pre-select articles at the appropriate reading level.
- Provide checklists for the elements of a good, written report to guide students through the process.

Appendices

Activity # 6: Canadian Involvement in World Organizations

Time: 450 minutes

Description:

This culminating activity to the unit will require the students to demonstrate the skills and knowledge developed throughout the previous activities. Students will conduct a geographic inquiry assessing Canadian involvement in selected international organizations. As concerned and involved Canadians, we are our brothers and sisters keepers at home and abroad.

Strand(s) and Expectations

Ontario Catholic Graduate Expectations: OCSG2b, OCSG2c, OCSG3c, OCSG3f, OCSG4f, OCSG5a, OCSG7f

Strands: Global Connections, Methods of Geographic Inquiry

Overall Expectations: GCVO2B, GCVO3B, MIVO1B, MIV03D

Specific Expectations: GC101D, GC102D, GC103B, GC202D, MI101B, MI102B, MI203D, MI206B, MI210D, MI211D, MI304D

Planning Notes

- Ensure work related to previous activities is complete.
- Ensure that evaluation rubrics are complete and that copies are ready for each student.
- Reserve time for research in the library and if possible, the computer lab.
- Internet cites can be bookmarked for ease of access by students.

Prior Knowledge Required

- Students should be familiar with elements of a good report and how to access information using various computer programs.

Teaching/Learning Strategies

1. (a) The overall purpose of the culminating activity is to have the groups assess Canada's role in various international organizations. Teachers should explain clearly what the responsibilities of the groups are and how students' work will be evaluated.
(b) Each group is responsible for researching the following information, much of which may be found on the web sites listed under resources. Teachers should be aware that some students may not be able to access the Internet. For this reason, enough class time should be allotted to ensure that each student has an opportunity to research material. Possible suggestions of what to research have been included.
 - **Historical Background** - Why was the organization formed? When? etc.
 - **Mandate/Mission Statement** - What is it?
 - **Structure** - How is the organization structured? e.g., United Nations - Secretary General, Security Council, General Assembly, etc.
What is the responsibility of each group?
 - **Funding** - How does the organization receive funding? How much? From where?
 - **Canada's Involvement** - What commitment has Canada made to the organization? Is it governmental or private involvement?
 - **Impact of Organization on World Community** - How has the organization affected the world? Assess the impact of the organization of global concerns such as war, hunger, etc.?
 - **Assessment of Effectiveness of Organization** - Has it brought about change? What change? Does it make a difference?
 - **Assessment of Effectiveness of Canada's Involvement** - Have Canadians made a difference? (e.g., peacekeeping)
 - **Role of Organization in the Future** - Looking ten years down the road, will the organization still exist? Why or why not? Will its mandate change?
(c) Once the groups have conducted the necessary research, they are responsible for creating the following:
 - i. Cartographic Display - showing information about the organization (e.g., structure, location in the world, mandate, graphs illustrating funding)
 - ii. Written Report - a two- to four-page report summarizing the information researched and assessing Canada's role.
 - iii. Summary Statement Handout - a one-page summary of key points to be copied for class.
 - iv. Oral Presentation (about 10-15 minutes in length)

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2. (a) Once the culminating activity is complete, teachers could administer a Summative Unit Test to assess student learning this unit.

Assessment/Evaluation

- The teacher assesses this culminating activity using “Unit #1 Activity #6 Rubric.” (see Appendix 1.3) or a Summative Unit Test

Resources

1. Amnesty International: <http://www.amnesty.excit.com/>
<http://www.amnesty.org/>
<http://www.rights.amnesty.org>
2. Canadian Council of Churches: <http://www.web.net-church>
3. Canadian International Development Agency: <http://www.acdi-cida.go.index.e.htm>
4. Commonwealth: <http://www.tcol.co.uk/index.htm>
5. Development and Peace: <http://bicc.uni-bonn.de/sef/english.html>
6. Greenpeace International: <http://www.greenpeace.org/>
<http://www.greenpeacecanada.org/>
7. International Monetary Fund: <http://www.imf.org/>
<http://dsbb.imf.org/>
8. International Olympic Committee: <http://www.olympic.org/>
9. NAFTA: <http://www.nafta.net>
<http://www.cyborlink.com/besite/northam.htm>
<http://www.legal.gsa.gov/legal27nafta.htm>
10. NATO: <http://despina.advanced.org/18401/text/NATO.html>
11. NORAD: <http://www.norad.com>
<http://www.norad.com/support.htm>
12. NORAD INTO THE 21ST CENTURY: <http://www.spacecom.af.mil/norad/factbk.htm>
13. United Nations and Other International Organizations <http://uncp.or.at/links.html>
14. World Wildlife Fund Canada: <http://www.wwfcanada.org>
15. School Resource Centre
16. Text books
17. Canadian Almanac

Accommodations

- Check IEP for accommodations required when special needs students are placed in groups.
- Pre-select the group to which some students are assigned to accommodate social needs.
- Assign a specific task to a student before he/she enters a group.
- Modify the task or reduce the written component.
- Some students may need the option of using an audio-tape or have a one-on-one presentation.
- Some students may require their answers on the unit summative test to be assessed orally by the teacher.

Appendix 1.3: Unit #1 Activity #6 – Rubric

Unit # 2: Canada's Natural Diversity

Time: 1500 minutes

Unit Developers: London District Catholic Board

Development Date: April, 1999

Unit Description

The focus of this unit is on the Ecozones of Canada. The content covers the Physical, Climate, Vegetation and Soil Regions of Canada. The major task of the unit which is outlined in activity #6, asks the students to discover the number and extent of the ecozones of Canada and to consider the results of human and natural impacts on these ecozones. The goal of the final activity of the unit is to heighten awareness of the responsibility involved in good stewardship from the perspective of Catholic Church teachings. The subsequent units on Canada's Resource Stewardship and Canada's Economic Diversity will continue to explore this theme. Essential to our faith is the call "to realize our responsibility within creation and our duty towards nature and the Creator" (Joannes Paulus, 1989).

Strand(s) and Expectations

Ontario Catholic School Graduate Expectation: OCSG2c, OCSG2e, OCSG3f, OCSG4a, OCSG4f, OCSG5a, OCSG5e, OCSG5g, OCSG7f, OCSG7i, OCSG7j

Strand(s): Geographic Foundations: Space and System/Methods of Geographic Inquiry

Overall Expectations: SSVO1B, SSVO2B, SSVO3B, SSVO4B, SSVO5B, MIVO1B, MIVO2B, MIVO3D

Specific Expectations: HEI01B, HEI02B, HEI03B, HEI05D, HESE10, SSI01B, SSI02B, SSI03B, SSI05D, SS301D, SS304D, SS305D, GCI05D, GC303D, UMI02B, UM201B, UM202B, UM203B, MI102B, MI201D, MI202B, MI203D, MI204B, MI208B, MI209D, MI210D, MI211D, MI212B, MI213B, MI214B, MI301B, MI302D, MI303D, MI304D, MI305B

Activity Titles (Time + Sequence)

Activity 1	Defining Regions and Natural Systems	75 min
Activity 2	Land forms	150 min
Activity 3	Climate	750 min
Activity 4	Vegetation/Soils	150 min
Activity 5	Ecozones	150 min
Activity 6	Researching Canada's Ecozones	300 min
Activity 7	Natural and Human Impact on Ecozones	300 min
Activity 8	Stewardship	225 min

Prior Knowledge Required

- Gr. 7-8 program expectations:
 - (a) How to read and build climate graphs
 - (b) How to interpret thematic maps
 - (c) How to apply inquiry skills to research
- Mapping Skills developed in Unit 1 of this course profile.

Teaching/Learning Strategies

1. Build a comparison organizer for regions, using sets of photographs or slides.
2. Build a map of physical regions.
3. Diagram factors affecting climate; types of precipitation.
4. Develop climate graphs of selected locations.
5. Develop a climatic profile of Northern Canada.
6. Develop a case study about Nunavut.
7. Develop a map of vegetation and soil regions.
8. Research a selected ecozone and present it.
9. Build an organizer of ecozones for use during presentations.
10. Simulate human and natural impacts on ecozones.

Unit Planning Notes

- Teacher prepares a collection of photos or slides of the various physical regions of Canada for the introduction to the activity on landforms. Information about Nunavut is needed for activity #3.
- At the outset of the unit, the teacher explains the tasks involved in the final activity.
- Access to computer software (GIS) is critical to optimum development in this unit.

Assessment/Evaluation

Diagnostic/Formative

Formal teacher observation/roving conference/teacher log/checklist of vocabulary/map assessment rubric from Unit 1/anecdotal notes/assessment rubric for ecozone data/peer assessment using student-developed checklist.

Summative

Formal teacher observation/assessment rubric of Nunavut presentations/teacher created paper and pencil test/rubric for presentation of ecozone research.

Resources

Print:

- Classroom text and atlas
- Photographs or slides of Canada
- Articles in *Canadian Geographic* magazines
- Articles in *The Monograph* (OAGEE magazine)

Audio-Visual:

- PALAU: Fragile Ecosystems
- Computer:
- Computer access
- Internet access
- Geographic Information Systems (GIS)

Activity #1: Defining Regions and Natural Systems

Time: 75 minutes

Description

During this activity the students will develop the concept of a region and of a system, starting with what they know and then extending the further understanding of the concept to broader terms. The major emphasis is on the vocabulary and terms used to describe the regions and systems in order to understand and build the ecological footprint required in the culminating activities.

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- “A system is a structured set of components or variables that exhibit relationships with one another and operate together as a complex whole, according to some observed pattern.”
 - “A region is a part of the earth that has similar characteristics.”

Strand(s) and Expectations

Ontario Catholic School Graduate Expectations: OCSG2c, OCSG3f

Strands: Geographic Foundations: Space and Systems/Global Connections/Methods of Geographic Inquiry

Overall Expectations: SSVO1B, SSVO5B, MIVO1B, MIVO2B

Specific Expectations: SSI01B, SSI02B, GCI05D, MI201D, MI209D

Prior Knowledge Required

- The concept of a region and or system as defined in Grade 7 Unit: “Themes of Geographic Inquiry”.
- Mapping skills developed in Unit 1.

Teaching/Learning Strategies

1. (a) By means of a whole group discussion, the teacher helps students develop the idea of regions by defining boundaries and declaring exemptions to these boundaries.
(b) With the large group, the teacher discusses the terms associated with regions (e.g., multi-factor, single-factor, nodal, and formal).
(c) With the whole group, the teacher uses leading questions to define the boundaries of areas close to the students (e.g., Where do you live?).
2. In small groups, the students brainstorm to define regions and produce a set of criteria to identify a region. Individually, students create a list of terms identified.
3. Individually, students produce maps to establish boundaries of several familiar regions (e.g., desk, room, school, home, backyard, community).
4. Teacher develops the idea of systems and their place in our natural world by creating a flow diagram of a simple system (e.g., the Hydrologic Cycle, Changes of State).

Assessment/Evaluation

- Using a checklist, the teacher informally assesses the vocabulary list to see if students have a working knowledge of the terms.
- Assess student maps to determine their understanding of boundaries, using a map rubric from unit one or a checklist.

Resources

1. Textbook for the course
2. Diagram of the Hydrologic Cycle from a text or atlas
3. Suggested video for reference or classroom use: PALAU: Fragile Ecosystems

Accommodation

- As an enrichment activity, students produce a food web for a prescribed region.

-
- Provide teacher or peer assistance with generating required maps.
 - Provide a summary of terms in more simplified language.
 - Provide a diagram and require students to simply affix necessary labeling.

Appendices

Appendix 1.4: Map Rubric

Activity #2: Landform Regions of Canada

Time: 150 minutes

Description:

During this activity, the students will observe several photographs of Canada in order to study the physical traits that distinguish one region from another and then study the regions in detail by completing a map of the regions. The students require knowledge of the various landform regions of Canada in order to depict the various ecozones required in Activity 6.

Strand(s) and Expectations

Ontario Catholic School Graduate Expectations: OCSG3f, OCSG5a, OCSG5e

Strands: Geographic Foundations: Space and Systems/Methods of Geographic Inquiry/Human Environment Interactions

Overall Expectations: SSVO1B, SSVO5B

Specific Expectations: HEI03B, SSIO2B, MI102B, MI201D, MI202B, MI204B, MI211D, MI213B

Planning Notes

- Teacher or commercially prepared photos or slides are needed for this activity.

Prior Knowledge Required

- Familiarity with physical regions from Grade 7 Unit: “Patterns in Physical Geography.”
- Use of a comparison organizer.
- Knowledge of terms from Activity #1.

Teaching/Learning Strategies

1. The teacher arranges for the students to have available a set of photos on landform regions. Students study the photos and complete a comparison organizer by observing some major components of that region.
2. The class discusses the organizer to highlight the differences and similarities within the sample set of photos.
3. Students build a map of Canada’s physical regions using an atlas, text or complete software as a resource.

Assessment/Evaluation

- Informal teacher observation of students' ability to gather information from the photos using anecdotal notes.
- Formal evaluation of the organizer for completeness and accuracy.
- Teacher assessment of the completed map with a rubric agreed upon with the students prior to completion of the map.

Resources

1. Slide set of photos or a suitable text or atlas with a set of photos of each of Canada's Physical Regions
2. Outline map of Canada
3. Appendix #2.1: A Sample Organizer
4. Electronic atlas (eg., pcglobe)

Accommodations

- Challenge some students to produce or find postcards showing these regions as a follow-up task.
- A simplified organizer could be developed for some students.
- Some students may need the boundaries of the regions clearly marked on their outline map of Canada.
- Arrange for peer helpers to ensure success by all students.

Appendices

Appendix 2.1 Comparison Organizer

Activity #3: Climate Regions of Canada

Time: 750 minutes

Description

During this activity, the students will study the factors affecting climate, the types of precipitation and then create a map of Canada's Climate Regions. Research into the northern character of Canada's climate as a whole culminates with presentations about the influence of climate on the people living in Nunavut.

Strand(s) and Expectations

Ontario Catholic School Graduate Expectations: OCSG3f, OCSG5a, OSG5e

Strands: Geographic Foundations: Space and Systems/Methods of Geographic Inquiry/Human-Environment Interactions

Overall Expectations: SSVO4B, SSVO5B

Specific Expectations: HEI02B, HEI03B, SSI02B, MI102B, MI201D, HEI05D, MI213B, MI203D, MI210D, MI301B, MI305B

Planning Notes

- Teacher accesses a story on weather lore or generates a list of some of the commonly held beliefs about the weather (e.g., “Red sky at night....., Groundhog Day).
- Teacher arranges for access to information about the territory of Nunavut, preferably Internet access or other sources of electronic information. Ensure that Inuit people are portrayed accurately to avoid stereotypes. Information from recent newspaper and magazine articles can also be used.

Prior Knowledge Required

- Terms and concepts from previous activities #1 and #2
- Use of a computer to access information
- Student familiarity with factors that influence climate from Grade 7 Unit: “Patterns in Physical Geography”

Teaching/Learning Strategies

1. The teacher brainstorms with the students to differentiate between climate and weather and formulate collective definitions to be recorded in vocabulary list from Activity #1, #2. Students read articles on weather lore and follow up with a class discussion about the validity of some of the statements about weather that people commonly believe.
2. Students study the factors affecting climate and prepare appropriate diagrams for their notes, illustrating each of the 6 factors influencing climate.
3. Students study the types of precipitation affecting Canada and prepare explanatory diagrams.
4. The teacher develops an exercise in which students build a series of climate graphs for a variety of locations in Canada to study the impact of the factors affecting various climate regions. Students build the climate graphs for a variety of regions, map the location of the communities, and then complete an organizer to compare the climate regions.
5. Students form small groups and collect information to explain the northern character of Canada’s climate.
6. Students form small groups to research the Canadian territory of Nunavut as a case study of the ways in which the ecological knowledge of the Aboriginal peoples influences how they interact with their environment today.
7. The teacher assigns each group the task of preparing a presentation on some aspect of life in Nunavut (e.g., lifestyle, food, clothing, homes, schools, transportation, music, literature). Students present to the class, using a format resulting from a group-teacher conference (e.g. media, powerpoint, photo display, music montage).

Assessment/Evaluation

- Teacher assesses the accuracy of the completed diagrams for the climate factors and types of precipitation using a checklist.
- Teacher informally observes group activity and makes notes in teacher log about students’ ability to work in groups situation and ensures that expectations are met regarding equitable sharing of tasks.
- Maps, graphs, and organizer are submitted to the teacher for formal assessment using a checklist.
- Teacher and students collaborate to create a rubric to be used by both teacher and peers to assess the presentations on the aspect of life in Nunavut selected during the teacher-group conference. Appendix 1.2 can be used as a guide in designing this collaborative oral presentation rubric.

Resources

1. The *Canadian Geographic* magazine, Fall 1990, has an article on weather lore.

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2. Refer to a textbook or atlas for the factors and types of precipitation.
 3. *The Monograph* has an excellent activity on climate graphs. (Volume 48, Issue No. 4, 1997)
 4. Nunavut information is available on the Internet at:
 - <http://www.cangeo.ca/JF99b/nunmap.html>
 - www.nunatsiaq.com
 - www.nnsl.com
 5. The January/February 1999 issue of *Canadian Geographic* has a special report on Nunavut as well as a previous issue in March/April 1993.

Accommodations

- Pair students to assist with the scribing of key definitions.
- Students with little or no computer skills can be paired with students who have the skills.
- Students with advanced computer skills should be encouraged to connect with students in Canada's far northern communities.
- Orally read the article aloud with some students for reinforcement.
- Reduce the number of graphs and diagrams required.
- Allow for substituting a written report or audio-tape for the presentation.
- Some students may need to be provided with partially completed maps and notes.

Appendices

Activity #4: Vegetation/Soil Regions of Canada

Time: 150 minutes

Description

During this activity, the students will complete maps of the vegetation and soil regions of Canada in order to compare the links between climate, vegetation, soils and landforms studied in previous activities.

Strand(s) and Expectations

Ontario Catholic School Graduate Expectations: OCSG4f, OCSG5e, OCSG2c, OCSG5a

Strands: Geographic Foundations: Space and Systems/ Methods of Geographic Inquiry/Human-Environment Interactions/Understanding and Managing Change

Overall Expectations: SSVO4B, SSVO5B

Specific Expectations: SSI01B, SSI04B, SSI05D, HEI03B, SSI02B, UM202B, MI213B

Planning Notes

- This activity is suitable for use with GIS software that contains the maps of climate, vegetation and soil, and population of Canada.
- Outline maps of Canada need to be prepared ahead of time for this activity.
- Have the necessary comparison organizer prepared.
- A resource of Canada's population distribution or ecumene is needed (e.g. text, atlas or electronic atlas).

Prior Knowledge Required

- The map of Climate regions of Canada generated from Activity # 3
- Recall of terms and concepts from the previous Activities #1, #2, #3

Teaching/Learning Strategies

1. Individually, the students build maps of vegetation regions and soil regions using a text, GIS, or atlas as a resource.
2. The teacher generates an appropriate organizer for the comparison to be made on the 3 types of regions. This organizer should identify a range of conditions suitable for habitation.
3. Students individually compare the created maps to the climate regions done previously in Activity #3 and arrange the climate, vegetation and soil maps in such a way as to be able to compare the boundaries of the regions and to note any similarities, differences and patterns in the comparison organizer.
Using their completed organizer, the students form small groups to create a large display map of Canada, indicating areas of Canada that could be most suitable for human habitation.
Teacher displays each group's map in such a way that all students can view all of the maps for the purpose of comparing the results.
4. Each student writes a statement to summarize the spatial distribution as seen on the maps. This statement should note areas of agreement and areas of disparity.

Assessment/Evaluation

- Maps and organizer to be submitted for formal teacher assessment, using map assessment rubric from Unit #1
- Teacher observes group activity informally, using a checklist for effective communication, presentation of ideas, and effective group work
- Peer evaluation of group maps using the map rubric
- Teacher prepared test of climate, vegetation and soils

Resources

1. Atlas or textbook with appropriate information about vegetation and soils
2. Large photocopy of an outline map of Canada for the group activity
3. Population distribution map of Canada in an atlas

Accommodations

- Students with ability challenges should be paired with other students with well developed skills in mapping and diagraming.
- Orally rephrase test questions for some students and provide the necessary maps where the student merely has to affix the appropriate labeling.

Appendix 1.4: Map Rubric

Activity #5: Defining Ecozones

Time: 150 minutes

Description

Through careful examination of various physical variables, students will develop a set of criteria for identifying ecozones. Ecozones are an ecological land classification system developed for use by Environment Canada and Statistics Canada. By synthesizing the information acquired when studying land form, climate, soil, and vegetation regions in earlier activities, students will be able to demonstrate an understanding of the characteristics that form ecozones. Other terms and concepts associated with regions such as bioregion, transition zone, and ecumene will be further developed.

Strand(s) and Expectations

Ontario Catholic School Graduate Expectations: OCSG5a, OCSG5e

Strands: Geographic Foundations: Space Systems, Methods of Geographic Inquiry

Overall Expectations: SSVO1B, SSVO2B, SSVO3B

Specific Expectations: SSI01B, SSI02B, SS2010

Planning Notes

- Ensure that students come prepared with the maps developed in the previous unit activities.
- Teachers will need a list of the ecozones with a short description of each. (See Appendix 2.3)

Prior Knowledge Required

- A working definition and understanding of the concept of ‘regions’ and ‘natural systems’ from previous unit activities
- A working knowledge of Canadian landform, climate, soil, and vegetation regions from previous unit activities

Teaching/Learning Strategies

1. The teacher involves the class in a discussion to review, from previous activities, what makes a region. As a class, a set of criteria (e.g., physiographic, climate, human activity) is developed for which the spatial organization of single factor regions can be studied. Brainstorm for various types of multi-factor regions which are present in Canada (e.g., wetlands).
2. In small groups, the class examines the maps they developed earlier in the unit for landforms, climate, soil, and vegetation regions in Canada. Students superimpose the various zones from these maps onto one map, constructing a map with smaller more distinct zones. The teacher introduces the concept of ecozones, emphasizing the criteria used to develop them and the various terms and concepts associated with them.
3. The teacher provides students with an unlabeled base map of the ecozones together with a list of the ecozones and a short description of each. Students match the descriptions with each ecozone, using their knowledge of various regions in Canada and the information provided to them.
4. As a class, students discuss and rationalize the decisions they made in matching the zones with descriptions.

Assessment/Evaluation

- Informal teacher observation can be used to monitor the small groups as well as the individual student's ability to analyze patterns and synthesize information. Anecdotal notes can be made on individual students' critical thinking skills and communication skills.
- Using the map rubric from Unit 1 (see Appendix 1.4), the teacher can assess the completed Ecozone map for appropriate methods of displaying geographic data.

Resources

1. Student constructed maps from previous activities
2. A base map of Canada
3. An atlas or textbook that presents the ecozones of Canada
4. www.cprc.uregina.ca.ccea.ecozones (Ecozones of Canada, Canadian Council on Ecological Areas and Environment Canada)

Accommodations

- Specific accommodations should be made by the teacher for students who have particular problems synthesizing and analyzing a lot of information.
- Provide peer/or teacher assistance with matching descriptions with zones.

Appendices

- Appendix 2.2: a base map of the Ecozones in Canada
- Appendix 2.3: Ecozone characteristics on land use in Canada

Activity #6: Researching Canadian Ecozones

Time: 300 minutes

Description

Students will be given the opportunity to research the Canadian ecozones in small groups. With the use of a textbook, atlas, and any other supplementary materials (e.g. World Wide Web), students will depict an accurate picture of the 15 terrestrial ecozones, each group focusing on one particular ecozone. Key diagnostic characteristics used to define ecozones will form the basis of the research. The activity will conclude by having the groups present their research to the class, using various cartographic displays.

Strand(s) and Expectations

Ontario Catholic School Graduate Expectations: OCSG4f, OCSG5a, OCSG2c

Strands: Geographic Foundations: Space and Systems, Methods of Geographic Inquiry

Overall Expectations: MIVO1B, MIVO2B, SSVO4B

Specific Expectations: MIO2BB, MI101B, SS301D

Planning Notes

- Organize access to on-line materials to ensure that students have access at a convenient time.
- Develop or access samples of a variety of graphic organizers.
- Determine the size of groups prior to the start of the activity when making provisions for school facilities.

Prior Knowledge Required

- methods of searching for information, using hypermedia

Teaching/Learning Strategies

1. The teacher begins this activity by reviewing the methods of geographical research. Using a Socratic method of teaching, the teacher emphasizes what constitutes sound research, the various types of research tools, and a method of bringing order to researched material by using a graphic organizer. The teacher provides examples of various types of graphic organizers then discusses the type of graphic organizer that should be used for this activity. It can be developed by the class as a whole or provided by the teacher.
2. The teacher presents to the class the type of data/information needed to be researched, using the local bioregion as an example.
3. In small groups, students research one particular ecozone, using print and on-line materials. They use a graphic organizer to co-ordinate their research data.
4. Individual groups present to the class their research on the particular ecozone studied. The presentation of each ecozone by the groups serves as the means by which other students complete their own graphic organizer for the various ecozones. A form of a jigsaw can be used, instead of formal presentations. Students share their work with each other and build a bank of information, using the organizer to record.

Assessment/Evaluation

- Peer-assessment, using a student-developed checklist will be used to evaluate each student's contribution to their group.
- Presentations will be assessed based on students' knowledge and application of concepts and their ability to research, organize, synthesize and communicate information. This teacher summative assessment will use the rubric, Student Presentation, Appendix 2.5.
- Individual student graphic organizers will be checked for completion but not assessed.
- Formative peer assessment of student presentations, using the rubric, Oral Presentations, Appendix 1.2.

Resources

1. Types of organizers used for synthesizing and coordinating data
2. Information on specific ecozones gathered from a textbook or on-line (see resource #3)
3. A list of World Wide Web sites to guide student research (e.g. Ecozones of Canada, Canadian Council on Ecological Areas & Environment Canada—www.cprc.uregina.ca.ccea.ecozones)

Accommodations

- Allow for alternate forms of presentation (ie. audiotape or summaries of research).

-
- Individuals with special needs could be grouped with students who are able to assist with the needs of the particular student.
 - Breakdown the task into smaller tasks by providing checklists, outlines, advanced organizers to assist in task management.

Appendices

- Appendix 2.4: Sample graphic organizer
- Appendix 2.5: Rubric for student presentation

Activity #7: Natural and Human Affects on Ecozones

Time: 300 minutes

Description

With this culminating activity, students will be provided with the opportunity to analyze the ways in which natural and human systems interact. Subsequently, students will make predictions regarding possible consequences on natural systems/ecozones. The concept of “ecological footprint” will also be developed.

Strand(s) and Expectations

Ontario Catholic School Graduate Expectations: OCSG3f, OCSG2b, OCSG3c

Strands: Geographic Foundations: Space and Systems, Human-Environment Interactions, Understanding and Managing Change

Overall Expectations: SSVO5B, HEVO1D, UMVO1B

Specific Expectations: SSI03B, HEI01B, HE204B, UM202B

Planning Notes

- It is important to select a cross section of articles that deal with several factors that cause change to natural systems, if students are not expected to research them on their own.

Prior Knowledge Required

- Familiarity with Grade 7 Geography Unit “Themes of Geographic Inquiry”
- Good understanding of the terminology in this particular unit (e.g., systems, regions, ecozones, ecumene)

Teaching/Learning Strategies

1. The students read teacher-selected and/or student-researched articles concerning environmental changes and answer the following types of questions:
 - i What human activities or natural events are altering natural systems in Canada?
 - ii Who/what is responsible for what is happening?
 - iii What are the specific impacts on the composition of individual Canadian ecozones?

-
2. The teacher directs a class discussion to organize the ideas generated from the articles. The teacher records the student-generated points regarding sources of change to natural systems, in organized columns on the board or overhead. The students determine a label for each of the columns created that reflects the information in them (e.g., industrial, recreational, natural disaster).
 3. Using various elements, students apply the information they have gathered to construct an “ecological footprint” for the local area. (ecological footprint - the total human impact on an ecosystem).
 4. Students use the information from the articles and discussion to do one of the following activities:
 - i Write a scenario to predict the possible consequences of continued interaction with the environment as it is occurring currently.
 - ii Write a letter to the editor or a “newspaper opinion” on an issue or situation in a Canadian Ecozone.
 - iii Conduct a class debate/role playing exercise: Development vs Preservation.

Assessment/Evaluation

- Probe questions can be used to assess student reading comprehension of how various factors affect natural systems and how natural systems interact with human systems. Record observations using a checklist or anecdotal notes.
- Writing assignments and Ecological Footprints can be collected and student learning can be assessed using the rubric, Activity 7, Appendix 2.6 which reflects an application of knowledge in a logical, reasoned argument.

Resources

1. Periodicals, textbooks, and on-line materials concerning environmental changes
2. Our Ecological Footprint, (Rees & Wackernagel, New Society Publishers)
www.ire.ubc.ca/ecoresearch

Accommodations

- Students with writing difficulties may benefit from some teacher assistance in organizing information and structuring their writing assignment.
- Audio-tape the selected articles or assign a “buddy” reader.
- Rather than write a scenario some students can be assigned to locate similar types of situations from media sources.

Appendices

Appendix 2.6: Rubric for Activity #7

Activity #8: Stewardship

Time: 225 minutes

Description

This activity is an extension to the culminating activity from the previous activity. By reviewing Scripture and Catholic Church teachings, students will be able to critically analyze the role of human

beings with respect to our interaction with natural systems and our responsibility to planet earth. Our attitudes towards others and the world will be examined from the viewpoint of good citizenship. Students will produce a list of standards by which we should live in order to become good stewards of the earth, using the groundwork established in the previous unit activities. The activity will conclude with students participating in an ecological service project.

Strand(s) and Expectations

Ontario Catholic School Graduate Expectations: OCSG1b, OCSG1e, OCSG7i, OCSG3f

Strands: Geographic Foundations: Space and Systems, Human-Environment Interactions

Overall Expectation: UMVO3B

Specific Expectations: SSE04D, HE205B

Planning Notes

- The teacher may wish to speak to teachers from the Religion department to obtain resources pertaining to Catholic Church teachings that satisfy the expectations of this lesson.
- Arrange for the lamination of posters and their prominent display in the school.
- Arrange for a practical time for the ecological service project.

Prior Knowledge Required

- A good foundation of knowledge concerning the interactions of human and natural systems and the diversity and sensitivity of Canada's Physical Environment from previous activities in this unit

Teaching/Learning Strategies

1. In small groups, students discuss the selected scripture passages and Catholic Church teachings and determine:
 - i the role of human beings with respect to creation in light of reading Genesis;
 - ii the values we need to emphasize to help with our environmental problems;
 - iii the changes that will have to be made in the way we live our lives.
2. In poster form, students create and exhibit ten standards by which we should live in order to be good stewards on our planet earth (e.g., choose products which are environmentally friendly).
3. Students participate in an ecological service project in the community such as:
 - i clean-up activities;
 - ii habitat improvement ventures (i.e. tree planting);
 - iii backyard rehabilitation and improvement projects.

Assessment/Evaluation

- Informal teacher observations are useful in determining whether students are on topic and involved with the discussion. A checklist can be utilized to document observations.
- Group posters can be assessed using the rubric, Stewardship Poster, Appendix 2.7, which reflects an application of Church and Bible teachings as well as the balance between human needs and natural systems.
- Oral report of students ecological service project which expresses how students have lived to the standards described in the poster is evaluated.
- Teacher prepares paper and pencil summative unit test.

Resources

1. Scripture

Genesis 1:24-31	Psalms 103, 104, 125:5, 146	Matthew 13:3
Job 12:7-10	2 Corinthians 9:6-14	Mark:1-9
Jeremiah 22:3	Colossians 3:12-21	Luke 4:14-21
Deuteronomy 8:7-10	Acts 4:32-34	Matthew 5:13-16
Isaiah 61:1-2	Leviticus 25:1-55	Isaiah 58:5-12
Wisdom 11:22-24, 12:2		

- Do Justice The Social Teaching of the Canadian Catholic Bishops, Ed.E.F.Sheridan S.J.
Document 40, Labour day Message - 1975, Northern Development: At What Cost?
Document 42, Justice Demands Action
Document 44, Labour Day Message - 1976, From Words to Actions
Document 46, A Society to be Transformed
Document 56, Ethical Reflections on Canada's Socio-Economic Order
- Proclaiming Justice & Peace Papal Documents from Rerum Novarum through Centesimus Annus, Ed. Michael Walsh and Brian Davies.
Rerum Novarum: On the Condition of Workers, 1891
Mater et magistra: Christianity and Social Progress, 1961
Pacem in Terris: Peace on Earth, 1963
Gaudium et Spes: Pastoral Constitution on the Church in the Modern World, 1965
Populorum Progressio: On the Development of Peoples, 1967
Octagesimo Adveniens: The Eightieth Anniversary of "Rerum Novarum"
- The Gospel of Peace and Justice Catholic Social Teaching Since Pope John, Ed. Joseph Gremillion

Accommodations

- Reduce the number of standards required in the poster.
- Check student IEP for any notations regarding supervision or physical needs involving a field trip.
- Assign a peer reader to assist with the reading of the article.

Appendices

Appendix 2.7: Rubric for Group Poster

A RANGE OF MODIFICATIONS FOR SPECIAL LEARNERS IN SECONDARY SCHOOLS
Appendix A

Reading Difficulties	Math Difficulties	Memory Difficulties	Written Language Difficulties
<ul style="list-style-type: none"> • Read questions first. • Use Read Stop Write Strategy. • Use SZ3R Strategy. • Use Reading Partners. • Modify reading requirements. • Choose less difficult reading materials. • Pre-teach vocabulary. • Pre-teach concepts. • Highlight notes. • Teach note making (e.g., mind, maps outline). • Teach use of index cards. • Provide near-point copying (student should not copy from the board or the overhead). • Use visuals. • Tape text. • Use films. • Use videos. • Read orally. 	<ul style="list-style-type: none"> • Read instructions. • Assign work in small units. • Check work after each example. • Relate problems to real life. • Adjust number of problems. • Modify complexity of examples. • Use concrete examples. • Review daily. • Teach use of diagrams. • Avoid abstract problems. • Teach use of calculator. • Use hands-on manipulative. 	<ul style="list-style-type: none"> • Teach students to verbalize concepts. • Have students repeat instructions. • Provide lists, flow charts. • Avoid recall questions. • Encourage daily review. • Insist student write things down. • Check that daily assignments are recorded in planner. • Give visual clues. • Give demonstrations. • Use Mind Mapping. • Teach Mnemonics. • Teach visualization. • Use chunking. 	<ul style="list-style-type: none"> • Vary assignments. • Adjust number of assignments. • Give explicit instructions. • Allow more time. • Modify number of copying tasks. • Provide photocopies notes. • Allow point form notes. • Do not penalize for mechanics. • Use peer editing. • Have student use a word processor. • Teach use of spell-check. • Teach outlining. • Copy key words only.

Motivation Difficulties	Attention Difficulties	Oral Language Difficulties
<ul style="list-style-type: none"> • Involve student in planning assignments. • Provide a variety of types of assignments. • Conference one to one basis. • Set realistic goals and expectations. • Avoid public confrontation. • Provide praise and positive feedback. • Be flexible with the timelines. • Create personalized assignments. • Provide time outs. • Maintain contact with home. 	<ul style="list-style-type: none"> • Provide a variety of activities and teaching techniques within each class. • Give blocks of info and vary the activities frequently. • Use co-operative learning. • Ask student to repeat instructions to you. • Use visuals. • Move around room. • Provide immediate feedback. • Provide positive reinforcements. • Ensure students see an end in sight 	<ul style="list-style-type: none"> • Provide non-threatening environments. • Have realistic expectations. • Use co-operative learning. • Work one to one. • Permit small groups. • Provide choices. • Provide practice time. • Use electronic media. • Use wait time. • Do not ask the student to respond to questions without forewarning.

SUGGESTED MODIFICATIONS IN THE CLASSROOM AT THE SECONDARY LEVEL
Appendix B

<p style="text-align: center;">For Students With Writing Difficulties</p> <ol style="list-style-type: none"> 1. Give more time to complete written work (copying from the blackboard, proofreading). 2. Encourage use of computer. 3. Give several short assignments rather than one long one. 4. Use oral presentation. 5. Let another student copy notes using NCR paper (available from Student Services). 6. Check notebook consistently. 7. Provide overhead copies before the class. 	<p style="text-align: center;">For Students With Reading Difficulties</p> <ol style="list-style-type: none"> 1. Teach how to underline or highlight important points. 2. Use clear photocopies. 3. Describe using diagrams, charts, graphs. Reinforce verbally. 4. Discuss new vocabulary. 5. Tape record texts: provide adapted versions of texts. 6. Encourage reading for pleasure. Have interesting and relevant books and articles available. 7. Teach how to use the text.
<p style="text-align: center;">For Students With Organization, Concentration and/or Attention Difficulties</p> <ol style="list-style-type: none"> 1. Arrange appropriate physical placement in the classroom 2. Emphasize eye contact. 3. Keep distractions to a minimum (noise, physical). 4. Use visual aids. 5. Keep oral directions clear, simple and slow. 6. State purpose of lesson at the beginning. 7. Contract breaks during class time. 8. Write homework assignments on the board. Encourage use of agenda organizer. Check regularly. 9. Tell student what is important to study. 10. Teach study skills (resource teacher, classroom teacher or mentor teacher). 11. Segment long assignments so student may complete work in small amounts. 12. Use three ring binder. 13. Repeat important information. 14. Read aloud board notes and transparencies. 	<p style="text-align: center;">Alternate Evaluation Techniques</p> <ol style="list-style-type: none"> 1. Use oral tests. 2. Give open book tests or use of notes. 3. Give tests (without use of notes) - short answers, multiple choice, true/false, matching. 4. Assign fewer questions, especially in Math or research projects if student is able to indicate that he comprehends and has mastered task. 5. Tape tests. Student listens and/or responds on tape. 6. Extend time on tests. 7. Clarify instructions and questions. 8. Use short quizzes instead of major tests. 9. Alternate projects. 10. Permit use of dictionary and calculator. 11. Reduce language loaded questions, particularly ones with multiple instructions. 12. Student demonstration or modelling. 13. Participate in group presentation. 14. Practice exam. 15. Teach test taking skills (resource teacher or classroom teacher). 16. Prepare students for evaluation: material covered, type of evaluation.

ADVERTISEMENT RUBRIC

Evaluation Rubric Presentations	Level 1	Level 2	Level 3	Level 4	Comments: each section out of 5
Understanding of educational qualifications for various careers in geography	- limited understanding	- some understanding	- good understanding	- exceptional understanding	
Quality of Work	- presentation quality not acceptable - spelling and grammar errors evident	- presentation quality acceptable - some spelling and grammar errors evident	- presentation quality well done - few spelling and grammar errors evident	- presentation exceptional quality - no spelling or grammar errors evident	
Communicating Message	- does not clearly describe position - company's attributes not evident - not persuasive	- clearly describes position - company's attributes somewhat evident - somewhat persuasive	- clearly describes position - company's attributes evident - persuasive	- outstanding in describing position - company's attributes very evident - persuasive using many techniques	
Creativity and Originality	- very little creativity or originality	- aspects of advertisement original	- advertisement creative	- advertisement original	

ORAL PRESENTATION RUBRIC

Oral Presentation Rubric

Group Members: _____

Evaluator: Teacher _____ Peer _____

Category	Level 1	Level 2	Level 3	Level 4
Organization	Presentation shows poor organization and lack of preparation	Presentation shows sign of organization but some parts do not seem to fit the topic	Presentation is organized, logical, and interesting	Presentation is very well organized, logical, interesting and lively
Preparation	Some student preparation is shown	A fair amount of student preparation is shown	An adequate amount of student preparation is shown	A great deal of student preparation is shown
Content	Small amount of material presented is related to the topic	Some material presented is not related to the topic	Almost all material presented is related to the topic	All material in the presentation is related to the topic.
Language	Language used is hard to follow and understand	Some language used is hard to follow and understand	Most language used is easy to follow and understand	Language used is well chosen, easy to follow and understand
Format	Poor use of aids and support materials (diagrams, overheads, maps, pictures); did not support the topic	Adequate use of aids and support materials, most supported the topic	Good use of aids and support materials; almost all supported the topic	Excellent use of aids and support materials; all aids supported the topic.
Delivery	Many words unclear; voice was monotonous; spoke too quickly or slowly; no pausing for emphasis; voice too low to be heard easily	Some words unclear; voice somewhat varied; spoke too quickly at times; some pausing for emphasis; voice sometime too low to be heard easily	Most words clear; voice often varied, interesting, generally spoke at the correct speed; frequent pausing for emphasis; voice loud enough to be heard easily	Words clear; voice frequently varied, interesting, generally spoke at the correct speed; effective pausing for emphasis
Audience	Audience not involved or interested	Audience somewhat involved, sometimes interested.	Audience involved and interested	Audience very involved and interested

UNIT #1 - ACTIVITY #6 - RUBRIC

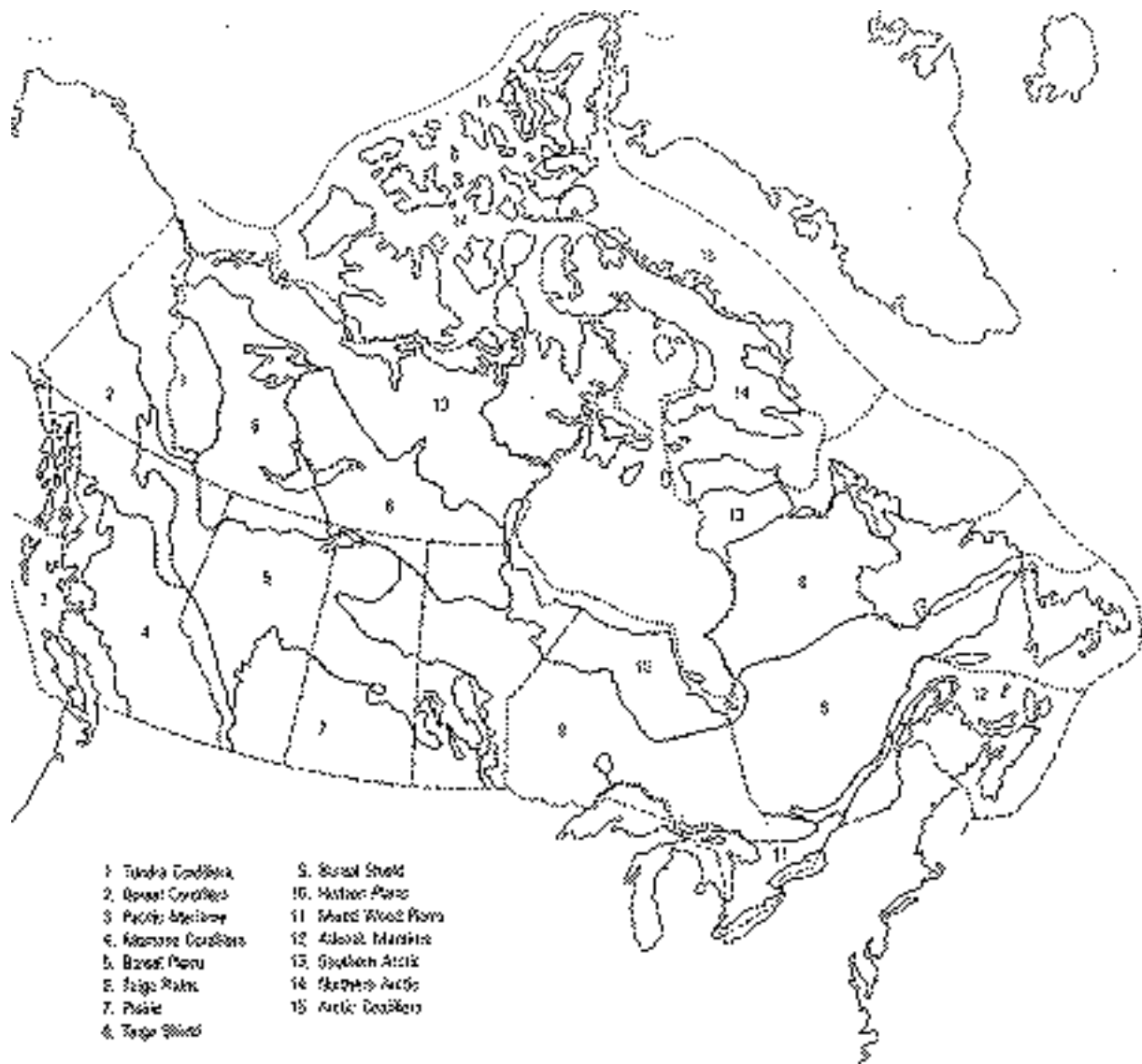
Categories	50-59% (Level 1)	60-69% (Level 2)	70-79% (Level 3)	80-100% (Level 4)
<p>Knowledge and Understanding (15%) - identify and understand connections between Canada and international organizations</p>	<p>- demonstrates limited knowledge of facts - demonstrates limited understanding of relationship between Canada and international organizations</p>	<p>- demonstrates some knowledge of facts. - demonstrates some understanding of relationship between Canada and international organizations</p>	<p>- demonstrates considerable knowledge of facts - demonstrates considerable understanding of relationship between Canada and international organizations.</p>	<p>- demonstrates thorough knowledge of facts. - demonstrates thorough and insightful understanding of relationship between Canada and international organizations</p>
<p>Thinking/Inquiry (15%) - collect, organize and synthesize information from a variety of sources</p>	<p>- collects, organizes and synthesizes information about Canada and international organizations with limited effectiveness.</p>	<p>- collects, organizes, and synthesizes information about Canada and international organizations with moderate effectiveness.</p>	<p>- collects, organizes and synthesizes information about Canada and international organizations with considerable effectiveness</p>	<p>- collects, organizes and synthesizes information about Canada and international organizations creatively with a high degree of effectiveness.</p>
<p>Communication (40%) Oral - use of oral language(10%) Written - use of written language (15%) Cartographic - use of symbols and visuals (15%)</p>	<p>- uses oral language with limited effectiveness - uses written language with limited effectiveness. - uses symbols and visuals with limited accuracy and effectiveness</p>	<p>- uses oral language with some effectiveness. - uses written language with some effectiveness - uses symbols and visuals with some accuracy and effectiveness</p>	<p>- uses oral language with a high degree of effectiveness. - uses written language with a high degree of effectiveness. - uses symbols and visuals with a high degree of effectiveness</p>	<p>- uses oral language with a high degree of effectiveness - uses written language with a high degree of effectiveness. - uses symbols and visuals with a high degree of effectiveness.</p>
<p>Applications (30%) - making logical conclusions or generalizations. - making connections</p>	<p>- infrequently makes logical conclusions or generalizations - makes connections with limited effectiveness</p>	<p>- sometimes makes logical conclusions or generalizations. - makes connections with moderate effectiveness</p>	<p>- usually makes logical conclusions or generalizations - makes connections with considerable effectiveness</p>	<p>- always or almost always makes logical conclusions or generalizations. - makes connections with conceptions with a high degree of effectiveness</p>

MAP RUBRIC

Criteria	Levels of Performance			
	Level 1	Level 2	Level 3	Level 4
Title	Uses writing instead of printing	Printed somewhere on the map and not easy to find	Printed at the top of the page	Printed neatly at the top of the map
	Does not accurately describe the contents of the map	The purpose/content of the map is not clear	States the purpose of the map adequately	Highlighted inside a box or underlined
				Purpose clearly stated
Labels	Written and not printed	Printed but sloppy or hard to read, messy	Printed neatly in an orderly fashion	Printed neatly in an accurate and orderly fashion.
	Not positioned carefully or accurately	Not very orderly	Few inaccuracies, spelling errors	No missing, inaccurate or misspelled labels
	Many inaccuracies, spelling errors			
Legend	Poorly positioned	Well positioned	Well positioned frame containing almost all symbols used on the map	Well positioned frame with a neat and complete set of symbols
	Sloppy in appearance	Frame/box is missing	Few inaccuracies	Includes a compass indicator
	Written labels	Most symbols used on maps are present		
	Many inaccuracies	Several inaccuracies		
	Difficult to use			
Scale	Missing or hard to find on map	Visible on the map	Relatively easy to find on the map	Clearly visible on the map and very easy to read and use (neat)
	A poor choice of scale	Hard to read	Most features are drawn to scale	All features on the map are drawn to scale
	Inaccurate, sloppy, hard to read	Features on the map are not drawn to scale	Neat and easy to use	All features on the map are drawn to scale
Frame	Hand-drawn frame	Ruler-drawn frame, not neatly done	Ruler-drawn frame with deficiencies such as inaccurate right angles or join marks visible	Ruler-drawn frame with lines that meet at right angles with no joining marks visible
	Appears hastily drawn and messy	Looks sloppy		
Appearance	Inconsistent use of colour	Mainly correct use of colour	Correct use of colour	Correct use of colour throughout
	Shading is very sloppy or crude	Shading of various intensity	Neat and even shading	Great care taken to be neat and consistent in colouring and shading
	Appears hastily drawn	Some care taken to be neat and accurate	Care taken to be neat and consistent in colouring	

COMPARISON ORGANIZER

	Photograph/ Slide	Region	Landforms	Vegetation	Climate	Human Activity
A						
B						
C						
D						
E						
F						
G						
H						



Ecozone Characteristics and Land-Use Practices in Canada

Appendix 2.3

#	Ecozone	Physiography	Vegetation	Soil Order and Surface Material	Climate	Present Use
1	Tundra Cordillera	Mountainous highlands	Alpine and arctic tundra	Cryosolic and brunisolic; colluvium, moraine, rock	Cold, semiarid, subarctic	Trapping, hunting, recreation, tourism, mining
2	Boreal Cordillera	Mountainous highlands; some hills and plains	Boreal; some alpine tundra and open woodland	Brunisolic; colluvium, moraine, rock	Moderately cold and moist montane	Hunting, trapping, forestry, recreation, mining
3	Pacific Maritime	Mountainous highlands; some coastal plains	Coastal western and mountain hemlock	Podzolic; colluvium, moraine, rock	Very wet, mild temperature maritime	Forestry, fishing, urbanization, agriculture
4	Montaine Cordillera	Mountainous highlands and interior plains	Mixed vegetation; conifer stands to sage brush fields	Luvisolic, brunisolic; moraine, colluvium, rock	Moderately cold and moist to arid montane	Forestry, agriculture, tourism, recreation
5	Boreal Plain	Plains, some foothills	Conifer and broadleaf boreal stands	Luvisolic; moraine, lacustrine	Moderately cold, moist boreal	Forestry, agriculture, recreation, trapping
6	Taiga Plain	Plains; some foothills	Conifer woodland; shrub lands and wetlands	Cryosolic, brunisolic; organic, moraine	Cold, semiarid, subarctic to moist boreal	Hunting, trapping, recreation
7	Prairie	Plains; some foothills	Short and mixed grasslands; aspen parkland	Chemozemic; moraine, lacustrine	Cool, semiarid	Agriculture, urbanization, recreation
8	Taiga Shield	Plains; some interior hills	Open woodlands, some arctic tundra and lichen health	Cryosolic, brunisolic; moraine rock	Moist, cold boreal to cold, semiarid, subarctic	Hunting, trapping, recreation
9	Boreal Shield	Plains; some interior hills	Conifer and broadleaf boreal stands	Brunisolic, moraine, rock, lacustrine	Cold, moist boreal	Forestry, mining, recreation, tourism
10	Hudson Bay Plain	Plains	Wetlands; arctic tundra and some conifer stands	Cryosolic; organic, marine	Cold, semiarid, subarctic to cold boreal	Hunting, trapping, recreation
11	Mixed-Wood Plain	Plains; some interior hills	Mixed broadleaf and conifer stands	Luvisolic; moraine, marine, rock	Cool to mild boreal	Agriculture, urbanization, recreation
12.	Atlantic Maritime	Hills and coastal plains	Mixed broadleaf and conifer stands	Brunisolic, luvisolic; moraine, colluvium, marine	Cool, wet temperature maritime	Forestry, agriculture, fishing, tourism
13	Southern Arctic	Plains; some interior hills	Shrub-herb-heath arctic tundra	Cryosolic; moraine, rock, marine	Cold and dry arctic	Hunting, trapping, recreation, mining
14	Northern Arctic	Plains and hills	Herb-lichen arctic tundra	Cryosolic; moraine, rock, marine	Very cold and dry arctic	Hunting, trapping, recreation, mining
15	Arctic Cordillera	Mountainous highlands	Non-vegetated, some shrub-herb arctic tundra	Cryosolic; ice, snow, colluvium	Extremely cold and dry arctic	Hunting

Source: Environment Canada, Terrestrial Ecozones of Canada, Ecological Land Classification Series, No. 19 (Ottawa, 1986), p.5

TERRESTRIAL ECOZONES OF CANADA - ORGANIZER

Number	Ecozone	Physio- graphy	Vegetation	Climate	Human Activity	Wildlife
1						
2						
3						
4						
5						
6						
7						
8						

TERRESTRIAL ECOZONES OF CANADA - ORGANIZER

Number	Ecozone	Physio- graphy	Vegetation	Climate	Human Activity	Wildlife
9						
10						
11						
12						
13						
14						
15						

Rubric for Activity #6 ~ Student Presentation

Category / Criteria	50-59% (Level 1)	60-69% (Level 2)	70-79% (Level 3)	80-100% (Level 4)
knowledge of characteristics which describe a specific ecozone	demonstrates limited knowledge of characteristics	demonstrates some knowledge of characteristics	demonstrates considerable knowledge of characteristics	demonstrates thorough knowledge of characteristics
methods used to collect geographic data	uses few methods to collect geographic data	uses some methods to collect geographic data	uses many methods to collect geographic data	uses all methods to collect geographic data
ability to organize, manipulate, and interpret geographic data	not effective in organizing, manipulating, and interpreting geographic data	some effectiveness in organizing, manipulating, and interpreting geographic data	considerable effectiveness in organizing, manipulating, and interpreting geographic data	high degree of effectiveness in organizing, manipulating, and interpreting geographic data
communication of relevant information	communicates information with limited clarity	communicates information with some clarity	communicates information with considerable clarity	communicates information with a high degree of clarity
use of cartographic displays in presenting research	uses cartographic displays with limited effectiveness	uses cartographic displays with moderate effectiveness	uses cartographic displays with considerable effectiveness	uses cartographic displays with a high degree of effectiveness
application of local bioregion data to manufacture meaningful research	limited ability to make connections from local data to manufacture meaningful research	some ability to make connections from local data to manufacture meaningful research	considerable ability to make connections from local data to manufacture meaningful research	uses connections from local data to manufacture meaningful research with a high degree of effectiveness
links between natural systems and human systems	links between natural systems and human systems are rarely developed	links between natural systems and human systems are sometimes developed	links between natural systems and human systems are usually developed	links between natural systems and human systems are always developed

Rubric for Activity #7

Category / Criteria	50-59% (Level 1)	60-69% (Level 2)	70-79% (Level 3)	80-100% (Level 4)
knowledge of concepts concerning systems	demonstrates limited knowledge of concepts	demonstrates some knowledge of concepts	demonstrates considerable knowledge of concepts	demonstrates thorough knowledge of concepts
understanding of relationship between natural and human systems	demonstrates limited understanding of relationships between systems	demonstrates some understanding of relationships between systems	demonstrates considerable understanding of relationships between systems	demonstrates thorough understanding of relationships between systems
synthesize and organize information	limited effectiveness in synthesizing and organizing information	moderate effectiveness in synthesizing and organizing information	considerable effectiveness in synthesizing and organizing information	extensive effectiveness in synthesizing and organizing information
critical analysis of material	seldom analyzes material critically	sometimes analyzes material critically	usually analyzes material critically	always analyzes material critically
clarity of information and ideas	information and ideas expressed with limited clarity	information and ideas expressed with moderate clarity	information and ideas expressed with considerable clarity	information and ideas expressed with a high degree of clarity
makes legitimate conclusions from written material	infrequently makes legitimate conclusions	sometimes makes legitimate conclusions	usually makes legitimate conclusions	always makes legitimate conclusions
makes logical predictions from gathered information	infrequently makes logical predictions from gathered information	sometimes makes logical predictions from gathered information	usually makes logical predictions from gathered information	always makes logical predictions from gathered information
makes connections between human activity and natural systems	infrequently able to make connections	sometimes able to make connections	usually able to make connections	always able to make connections

Rubric for Activity #8

Stewardship Poster

Category / Criteria	50-59% (Level 1)	60-69% (Level 2)	70-79% (Level 3)	80-100% (Level 4)
knowledge of facts and terms regarding systems	demonstrates limited knowledge of facts and terms	demonstrates some knowledge of facts and terms	demonstrates considerable knowledge of facts and terms	demonstrates thorough knowledge of facts and terms
understanding of Catholic social teachings	demonstrates limited understanding of teachings	demonstrates some understanding of teachings	demonstrates considerable understanding of teachings	demonstrates thorough understanding of teachings
approaches matters with creativity and respect	seldom approaches matters with creativity and respect	sometimes approaches matters with creativity and respect	usually approaches matters with creativity and respect	always approaches matters with creativity and respect
questions our lifestyles and the values we have as a society	seldom questions societal values and lifestyles	sometimes questions societal values and lifestyles	usually questions societal values and lifestyles	always questions societal values and lifestyles
communication of ideas and information	communicates ideas and information with limited clarity	communicates ideas and information with some clarity	communicates ideas and information with considerable clarity	communicates ideas and information with a high degree of clarity
effectiveness of visual display	limited effectiveness of visual display	some effectiveness of visual display	considerable effectiveness of visual display	high degree of effectiveness of visual display
appropriateness of content for different audiences and intentions	limited appropriateness of content for different audiences and intentions	some appropriateness of content for different audiences and intentions	considerable appropriateness of content for different audiences and intentions	high degree of appropriateness of content for different audiences /intentions
applies knowledge of independent systems for development of a just and compassionate society	limited application of knowledge in this manner	some application of knowledge in this manner	considerable application of knowledge in this manner	a high degree application of knowledge in this manner
recommendations concerning standards by which we should live are logical	infrequently makes logical recommendations of these standards	sometimes makes logical recommendations of these standards	usually makes logical recommendations of these standards	always makes logical recommendations of these standards
connections made between present human actions and the future	makes connections with limited effectiveness	makes connections with moderate effectiveness	makes connections with considerable effectiveness	makes connections with a high degree of effectiveness