IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Introduction to Geography***

Topic ***Spatial Perspective***

Students develop a **spatial perspective** when they learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. This involves conceptualizing spaces and regions, representing those conceptualizations visually, as various types of maps, and using maps and other representations of geographic information to analyze and understand physical or human conditions. This involves students learning and mastering whole a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports their logical conclusions.

Pacing

Weeks 1-2 of Year One

Content Statement

1. ***Geography involves the definition of places and regions based upon physical, economic, political, and/or cultural characteristics.***

   Learning Targets:
   - I can define a place based on its absolute location, site, situation, and cognitive impressions and explain how a place can change.
   - I can define a region based upon a chosen characteristic and analyze whether specific places are included in that region.

2. ***Geographic data must be collected using reliable methods designed to produce results that are valid for a specific investigation. Geographers represent this data graphically (usually using maps) to determine the spatial relationships that it reflects.***

Content Elaborations

There are multiple ways to define a place, from its position as determined against a global standard (usually a grid) to its position relative to other places, to the functions it performs in human society and the impressions that individuals have of that place as a result of primary or secondary experiences. Places, therefore, are defined by what distinguishes them from other places. A region, on the other hand, is always defined by the characteristic(s) that the places in that region have in common. The uneven distribution of such characteristics and the use of multiple characteristics to define a region thus may produce debate over whether to include certain places in that region.

Geographic data about places and regions may be represented in graphs and charts, but maps usually best represent the spatial dimension of the data. When constructing a map, the geographer-scholar considers first what the

IB Geography SL

Learning Targets:

- I can identify and evaluate a range of types, scales, and projections of maps in order to construct one that fulfills a specified purpose.
- I can identify and evaluate sources of geographic data.
- I can analyze geographic data and discuss how location may influence the patterns and interactions that the data represent.

purpose of the map will be; this guides what type of map will be chosen, what scale will be used, and how the map will be projected. Since maps are abstractions of reality, some data will not be included, may be emphasized or deemphasized, or may even be distorted as a result of these choices. With this in mind, the geographer-scholar chooses carefully.

In choosing geographic data for analysis, geographer-scholars choose data that are reliable and valid. Reliable data comes from sources that collect and report data with a professionalism and detachment that would ensure that the data would be at least similar to data collected by a similarly reliable source. Valid data is relevant to the question that the geographer-scholar is investigating. As noted above geographer-scholars represent data in various ways, but they especially use maps because the spatial perspective calls them to examine, first and foremost, the question of how location influences the phenomena that they are investigating.

Content Vocabulary

- place
- absolute location
- latitude
- longitude
- site
- situation
- cognitive impression
- region
- political map
- physical map
- topographic map
- contours
- thematic map
- isopleth map
- proportional symbol map
- dot map
- choropleth map
- located chart map
- cartogram
- scale
- written
- graphic
- fractional
- map projection
- equal area
- equidistant
- conformal
- reliability
- validity
- internalization
- mental map
- spatial analysis
- density
- concentration
- pattern

Academic Vocabulary

- analyze
- construct
- define
- evaluate
- explain
- identify

IB Geography SL

Formative Assessments	Summative Assessments
Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target. Scores of 0-4 will represent: 4 = fulfillment of all commend terms with complete and accurate information; 3 = fulfillment of all command terms with some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt. Students may resubmit formative assessment assignments with revisions based on feedback and receive higher scores until the day that the unit summative assessment is administered.	Each unit summative assessment will consist of a series of written items that employ IB command terms, reflect IB expectations for rigor in expressing mastery of content and concepts, and approximate (in point values and time allowed) the experience of taking the IB Geography SL Paper 1 and Paper 2 exams. When practical, authentic IB exam items from past IB Geography exams may be used, but it is not necessary. Summative assessments should be graded using markschemes that are similar to those used by IB examiners to grade IB Geography SL Paper 1 and Paper 2; these may be developed by the teacher using past markschemes as examples.
Resources • National Geographic Society. National Geography Standards and Skills. http://education.nationalgeographic.com/education/national-geography-standards/?ar_a=1&force_AR=True • Claval, Paul. An Introduction to Regional Geography • Wilford, John Noble. The Mapmakers • Wood, Denis. The Power of Maps	**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that expanded inquiry.
Integrations • IB History: Historical context helps to illustrate purposes of maps and map projections • IB Environmental Systems and Societies: Analyzing data	**Intervention Strategies** In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily

IB Geography SL

• IB Mathematics: Scale and projection, statistics and analysis • IB Extended Essay: Reliable and valid data • IB Theory of Knowledge: Defining places and regions, maps as abstractions from reality (not an image of reality itself), choices made by cartographers to sacrifice accurate representation of one aspect of reality in order to accurately represent a different aspect of reality, psychology of place, and mental maps.	skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

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Strand ***Introduction to Geography***

Topic ***Ecological Perspective***

Students adopt an ecological perspective in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other.

Pacing

Week 3 of Year One

Content Statement

1. ***Physical systems create the conditions within which human systems emerge and evolve; humans then alter physical systems in an effort to become less dependent on physical conditions.***

Learning Targets:

- I can outline the interactions between physical and human systems that make the environment more or less hospitable to humans.
- I can assess to what extent human systems were first dependent on physical conditions, but evolved to escape (to some degree) the influence of physical conditions.
- I can examine an event or issue to uncover the relative influences of location-dependent and non-location-dependent factors.

Content Elaborations

In embracing the ecological perspective of geography, students seek to understand how physical conditions and human systems interact; in doing so, students find that geography intersects other disciplines of history and the social studies. Human systems first emerged within the context of physical conditions that either facilitated or limited their evolution, enhancement, and expansion; humans then found ways to alter the physical environment to increase the facilitating qualities or mitigate/eliminate those that tend to be limiting.

In doing so, humans found ways to make their activities less dependent on the locations where they originated. Rather, human systems became more dependent upon the modifications that humans made to the physical environment. Increasingly, these modifications rendered any location available for human activity. Yet in doing so, they changed the physical systems in ways that can generate problems for the human systems they were designed to facilitate.

Content Vocabulary

- atmosphere
- biosphere
- culture
- monoculture

Academic Vocabulary

- assess to what extent
- examine

IB Geography SL

• lithosphere • hydrosphere • resource • population • economic activities • globalization • human settlement • conflict and cooperation	• outline
Formative Assessments Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target. Scores of 0-4 will represent: 4 = fulfillment of all commend terms with complete and accurate information; 3 = fulfillment of all command terms with some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt. Students may resubmit formative assessment assignments with revisions based on feedback and receive higher scores until the day that the unit summative assessment is administered.	**Summative Assessments** Each unit summative assessment will consist of a series of written items that employ IB command terms, reflect IB expectations for rigor in expressing mastery of content and concepts, and approximate (in point values and time allowed) the experience of taking the IB Geography SL Paper 1 and Paper 2 exams. When practical, authentic IB exam items from past IB Geography exams may be used, but it is not necessary. Summative assessments should be graded using markschemes that are similar to those used by IB examiners to grade IB Geography SL Paper 1 and Paper 2; these may be developed by the teacher using past markschemes as examples.
Resources • National Geographic Society. National Geography Standards and Skills. http://education.nationalgeographic.com/education/national-geography-standards/?ar_a=1&force_AR=True	**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit.

IB Geography SL

Integrations	Intervention Strategies
• IB History: Historical context for the relationship between physical conditions and human activities • IB Environmental Systems and Societies: How physical conditions impact human activities and how human activities impact physical conditions; humans alter the environment to suit their activities and then become dependent on this altered environment; new physical conditions that result may pose new challenges to human activities. • IB Theory of Knowledge: What constitutes a "natural" physical process once human activity begins to alter the physical environment?	In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Introduction to Geography***

Topic ***Atmosphere***

The atmosphere is a product of processes of creation that date back to the origins of the planet. Its current composition and condition has been influenced by both natural and man-made systems. The atmosphere is essential to human activity but is experiencing degradation as a result of natural and human factors. The consequences of atmospheric degradation, especially ozone depletion and global warming/climate change, could be dire for humankind, but greater attention to these processes has allowed for practices to be adopted that may mitigate or reverse the degradation.

Pacing

Weeks 4-6 of Year One

Content Statement

1. ***The earth's atmosphere functions in ways that are essential to human activity, and these functions are determined by its composition, which is affected by natural and human influences.***

Learning Targets:

- I can outline competing hypotheses about the origins of the atmosphere and its oxygen.
- I can describe the changing composition of the atmosphere and state each component's impact on humans/human activity.
- I can explain what happens when energy radiated from the sun arrives at the earth and construct a diagram to illustrate this process.
- I can define "Greenhouse Effect" and state its value to humans/human activity.

Content Elaborations

Some of the gases that compose earth's atmosphere are thought to have originated from a cosmic bombardment in the early (first billion or so) years of the earth's existence. Oxygen, however, which is the most prevalent gas by volume in today's atmosphere, originated through photosynthesis by cyanobacteria. The composition of the atmosphere has continued to change due to natural and man-made processes.

The atmosphere performs functions that are essential for humans. It shields humans from certain harmful types of incoming solar radiation, and also traps infrared solar radiation that is absorbed and reradiated by the earth. This "greenhouse effect" traps heat and provides an environment that is amendable to human life; without this process the earth would experience lower average temperatures and daytime/nighttime extremes that would make earth's environment inhospitable to human life.

IB Geography SL

2. *Human activity associated with industrialization may be affecting the composition of the earth's atmosphere in a way that compromises human wellbeing; governments and inter-governmental authorities have sought to counteract this with little success.*

Learning Targets:

- I can explain the causes of ozone depletion and state the implications for humans/human activity.
- I can discuss the factors which may account for Global Warming/Global Climate Change and assess to what extent human activity contributes.
- I can explain the dangers of Global Climate Change and assess to what extent these threaten humans/human activity.
- I can evaluate policies and processes that are meant to mitigate Global Warming/Global Climate Change.

Human activity has, however, contributed to changes in the atmosphere that could prove harmful to human activities. The production of chlorofluorocarbons contributed to the depletion of stratospheric ozone, opening the possibility of humans being exposed to harmful solar radiation. The industrial era has also seen rising levels of carbon dioxide in the atmosphere, which is thought by many to contribute to an "enhanced greenhouse effect," leading to global warming and associated climate changes, like more extreme patterns of precipitation or drought. Natural factors, including sun cycles and the changing orbit of the earth, may also contribute to these developments.

Because these changes could threaten the well-being of individual humans and human communities, national governments and international organizations have attempted to enact policies to reduce the production of gases that are thought to contribute to global warming/climate change. These have met with halting success because of the reliance of many industrialized/industrializing countries on the burning of fossil fuels.

Content Vocabulary

- nitrogen
- oxygen
- cyanobacteria
- photosynthesis
- troposphere
- water vapor
- carbon dioxide
- methane
- energy budget
- insolation
- ultraviolet, visible light, infrared
- albedo
- construction currents/"thermals"
- re-radiation
- "long-wave" infrared
- greenhouse effect
- stratosphere
- global warming/climate change
- non-anthropogenic causes
- water vapor
- earth/sun cycles
- volcanism
- enhanced greenhouse effect
- anthropogenic causes
- carbon dioxide
- fossil fuels
- deforestation
- methane
- chlorofluorocarbons (CFCs)
- radiative forcing
- UNFCCC
- Kyoto Protocol
- market-based solutions
- "cap-and-trade"

Academic Vocabulary

- assess to what extent
- construct
- define
- describe
- discuss
- explain
- evaluate
- outline
- state

IB Geography SL

• ozone • chlorofluorocarbons (CFCs) • carbon credits	
Formative Assessments Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target. Scores of 0-4 will represent: 4 = fulfillment of all commend terms with complete and accurate information; 3 = fulfillment of all command terms with some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt. Students may resubmit formative assessment assignments with revisions based on feedback and receive higher scores until the day that the unit summative assessment is administered.	**Summative Assessments** Each unit summative assessment will consist of a series of written items that employ IB command terms, reflect IB expectations for rigor in expressing mastery of content and concepts, and approximate (in point values and time allowed) the experience of taking the IB Geography SL Paper 1 and Paper 2 exams. When practical, authentic IB exam items from past IB Geography exams may be used, but it is not necessary. Summative assessments should be graded using markschemes that are similar to those used by IB examiners to grade IB Geography SL Paper 1 and Paper 2; these may be developed by the teacher using past markschemes as examples.
Resources • Nagle, G. & Cooke, B. Geography Course Companion. • Biello, D. The Origin of Oxygen in Earth's Atmosphere. http://www.scientificamerican.com/article.cfm?id=origin-of-oxygen-in-atmosphere • des Marais, D. Ask the Experts: Where did Earth's Atmospheric Oxygen Come From? http://www.scientificamerican.com-/article.cfm?id=where-did-the-earths-atmo • National Aeronautics and Space Administration. How Did Earth's Atmosphere Form? http://scijinks.nasa.gov/atmosphere-formation • Carnegie Mellon University. Atmospheric System. http://telstar.ote.cmu.edu/environ/m3/s2/index.shtml#	**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit.

• Pidwirny, M. & Jones, S. Introduction to the Atmosphere. http://www.physicalgeography.net/fundamentals/7a.html • National Oceanic and Atmospheric Administration. Greenhouse Gases Frequently Asked Questions. http://www.ncdc.noaa.gov/oa/climate/gases.html • World Meteorological Association. Understanding Climate. http://www.wmo.int/pages/themes/climate/understanding_climate.php • New York Times Online. Topic: Global Warming and Climate Change (Doha Talks 2012). http://topics.nytimes.com/top/news/science/topics/globalwarming/index.html • United States Environmental Protection Agency. Climate Change: International Impacts and Adaptation. http://www.epa.gov/climatechange/impacts-adaptation/international.html • United States Geological Survey. Emerging Consensus Shows Climate Change Already Having Major Effects on Ecosystems and Species. http://www.usgs.gov/newsroom/article.asp?ID=3483 • United States Global Change Research Program. Climate Change Impacts in the U. S. http://globalchange.gov/publications/reports/scientific-assessments/us-impacts/climate-change-impacts-by-sector • University of Wisconsin, Atlas of the Biosphere http://www.sage.wisc.edu/atlas/maps.php?datasetid=8	
Integrations • IB Economics: Understanding markets for carbon credits • IB Chemistry: Understanding the origins and composition of the atmosphere as well as phenomena like albedo, ozone depletion, the greenhouse effect, anthropogenic and non-anthropogenic causes of global climate change • IB Environmental Systems and Societies: Influence of atmosphere on human activities; influence of human activities on the atmosphere – especially the question of anthropogenic and non-anthropogenic causes	**Intervention Strategies** In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional

of global climate change and impacts of global climate change • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay • IB Theory of Knowledge: Question of what constitutes an anthropogenic cause of global climate change, whether global climate change "matters," and to whom; questions of responsibility for changing the conditions that contribute to global climate change	time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

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Strand ***Patterns of Environmental Quality***

Topic ***Soil***

Soil is a product of processes of creation that date back to the origins of the planet. Its current composition and condition has been influenced by both natural and man-made systems. Soil is essential to human activity but is experiencing degradation as a result of natural and human factors. The consequences of soil degradation, especially erosion, desertification, and contamination, could be dire for humankind, but greater attention to these processes has allowed for practices to be adopted that may mitigate or reverse the degradation.

Pacing

Weeks 7-9 of Year One

Content Statement

1. ***Soil functions in ways that are essential to human activity, and these functions are determined by its composition, which is affected by natural and human influences.***

   Learning Targets:
   - I can explain how soil is created and what composes it and construct a diagram to illustrate this process.
   - I can outline the value of soil to humans/human activity.
   - I can analyze the factors that contribute to the quality of soil and state the availability of quality soil worldwide.

2. ***Natural and human-induced factors contribute to soil degradation, the consequences of which could be harmful to humans; governments and intergovernmental authorities have sought to reduce soil degradation.***

Content Elaborations

Soil is created from the rocks that are composed of fundamental materials that accreted as the earth formed. These materials have been cycled through volcanism and plate tectonic processes, weathered, transported, precipitated out of water, and combined with decaying organic material to produce soil. Soil is essential to human life as it is the medium for plant growth, and plants not only produce the oxygen that humans breathe, but are also the basis of agriculture and the human food chain.

Soil quality is determined by factors that enhance or limit soil's ability to support plant life and human health. These include its capacity to retain moisture and oxygen, its depth and compaction, and its chemical properties. Soils degrade due to natural factors such as wind and water erosion, but also due to human mismanagement like overgrazing, overcultivation, and improper tillage (all of which increase the rate of erosion), as well as contamination by toxic compounds.

IB Geography SL

Learning Targets:

- I can explain the causes of soil degradation/reduced soil quality.
- I can assess to what extent soil degradation threatens humans/human activity.
- I can evaluate policies and processes that are meant to reduce soil degradation and restore soil quality.

The loss of soil is a threat to humans' abilities to produce food, and it also contributes to global warming/climate change by the loss of a sink for carbon. Efforts to reduce soil degradation have focused on local efforts to teach farmers how to manage their soil in a responsible way and on governments to ensure land tenure, thus incentivizing using soil wisely.

Content Vocabulary

- weathering
- physical, chemical, biological
- erosion
- eruption
- precipitation
- transportation
- deposition
- humus
- soil productivity
- nutrient availability
- nutrient retention capability
- rooting conditions
- oxygen availability
- water holding capacity
- pore space
- salts
- toxicity/acidity
- workability
- soil resilience
- USDA land quality classes
- soil degradation
- erosion (gravity/water/wind)
- sheet, rill, gully erosion
- leaching
- mismanagement
- deforestation/"slash-and-burn"
- improper tillage
- overcultivation
- overgrazing
- compaction
- salinization
- contamination
- silting
- carbon sequestration
- contour plowing
- bunding/terrace farming
- no-till farming
- land tenure
- afforestation

Academic Vocabulary

- analyze
- assess to what extent
- define
- evaluate
- explain
- outline
- state

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Resources • Nagle, G. & Cooke, B. Geography Course Companion. • University of Wisconsin, Atlas of the Biosphere http://www.sage.wisc.edu/atlas/maps.php?datasetid=8 • Cranfield University (2013). Soil-Net.com: Threats to Soil. http://www.soil-net.com/dev/page.cfm?pageid=secondary_threats • Food and Agriculture Organization of the United Nations. Soil Quality for Crop Production. Land Resources. http://www.fao.org/nr/land/soils/harmonized-world-soil-database/soil-quality-for-crop-production/en/ • Food and Agriculture Organization of the United Nations. Carbon Sequestration in Dryland Soils. http://www.fao.org/docrep/007/y5738e/y5738e05.htm • University of Nebraska-Lincoln (2012). Soil Genesis and Development, Lessons 1-6. Plant and Soil Sciences eLibrary. http://passel.unl.edu/pages/index.php?alllessons=1 • Thierfelder, C. and Wall, P. The Problem of Soil and Land Degradation. http://www.fao.org/ag/ca/Training_Materials/Leaflet_Degradation.pdf • United States Department of Agriculture. Land Degradation and Desertification Newsletter of the International Task Force on Land Degradation.	**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit.

http://soils.usda.gov/use/worldsoils/landdeg/199702news.html • Food and Agriculture Organization of the United Nations. FAO Soils Bulletin – Keeping the Land Alive. Soil Erosion: Its Causes and Cures. http://www.fao.org/docrep/T0389E/T0389E02.htm • Food and Agriculture Organization of the United Nations. Land Husbandry – Components and Strategy. http://www.fao.org/docrep/t1765e/t1765e05.htm	
Integrations • IB Chemistry: Understanding the composition of soil as well as phenomena like chemical weathering, soil acidity, oxygen-holding capacity, leaching, salinization and contamination of soils, and carbon sequestration • IB Environmental Systems and Societies: Influence of soil on human activities; influence of human activities on soil – especially the question of anthropogenic and non-anthropogenic causes of soil degradation and impacts of soil degradation • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay • IB Theory of Knowledge: Question of what constitutes an anthropogenic cause of soil degradation, whether soil degradation "matters," and to whom; questions of responsibility for changing the conditions that contribute to soil degradation; questions of whether traditional societies ought to be forced to change farming methods	**Intervention Strategies** In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Patterns of Environmental Quality***

Topic ***Water***

Water is a product of processes of creation that date back to the origins of the planet. Its current composition and condition has been influenced by both natural and man-made systems. Water is essential to human activity but is scarce in many places due to natural and economic factors. The consequences of water scarcity, including agricultural failure, disease, and water-centered conflict, could be dire for humankind, but greater attention to water scarcity has allowed for practices to be adopted that may reduce water scarcity.

Pacing

Weeks 10-12 of Year One

Content Statement

1. ***Water functions in ways that are essential to human activity, and these functions are determined by its composition, which is affected by natural and human influences.***

   Learning Targets:
   - I can outline competing hypotheses about the origins of the earth's water.
   - I can explain the water cycle and construct and label a diagram to illustrate this process.
   - I can describe water's impact on humans/human activity.

2. ***Many individuals and communities worldwide lack access to safe drinking water and adequate sanitation, which threatens human well-being; governments and intergovernmental authorities have sought to reduce***

Content Elaborations

Water is thought to have been released from minerals that accreted to form the earth billions during its creation. It multiplied when atmospheric hydrogen combined with oxygen produced in photosynthesis. Since then, water has cycled through a sequence of condensation, precipitation, runoff, infiltration, evapotranspiration, and evaporation.

Water is essential to human survival. Most of the body's essential functions require water, and irrigation has been essential to agriculture. It is also necessary to good hygiene. Yet in many parts of the world, water is inadequately available for drinking or for sanitation. This may be caused by physical factors, in which physical systems simply do not provide enough water for the local population (as in hot, arid climates), or economic factors, in which water is physically present but unavailable due to poverty or lack of infrastructure.

the number of people who suffer from water scarcity and its consequences.

Learning Targets:

- I can define water stress/water scarcity and contrast "physical" and "economic" water scarcity.
- I can explain the causes of physical and economic water scarcity.
- I can describe the dangers posed by water scarcity.
- I can evaluate policies and processes that are meant to reduce/mitigate water scarcity.

Agriculture is stunted where water is scarce and where inadequate access to safe water and sanitation cause people to be exposed to human waste, diseases cause massive loss of life, especially among children. The United Nations has made access to safe water and sanitation a priority, and member states like the U.S. have contributed know-how and materials to promote safe water filtration and handling practices at the household level.

Content Vocabulary

- solar nebula hypothesis
- olivine
- evaporation
- transpiration
- sublimation
- condensation
- precipitation
- surface runoff
- streamflow
- tributary
- aquifer
- spring
- water stress
- physical water scarcity
- economic war scarcity
- improved water source
- unimproved water source
- improved sanitation facility
- unimproved sanitation facility
- non-anthropogenic
- anthropogenic
- diarrheal diseases
- trachoma
- Millennium Development Goals
- U.N. World Health Organization
- Water Safety Plan
- contamination
- recontamination
- U.S. Centers for Disease Control
- Safe Water System
- household decontamination
- safe container
- safe water handling practices

Academic Vocabulary

- construct
- contrast
- define
- describe
- evaluate
- explain
- label
- outline

Formative Assessments

Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target.

Summative Assessments

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Resources • Nagle, G. & Cooke, B. Geography Course Companion. • University of Wisconsin, Atlas of the Biosphere http://www.sage.wisc.edu/atlas/maps.php?datasetid=8 • de Leeuw, N. New Theory on the Origin of Water on Earth. http://phys.org/news/2010-12-theory-earth.html • Owen, T. What do we know about the origins of the earth's oceans? http://www.scientificamerican.com/article.cfm?id=what-do-we-know-about-the • United States Geological Survey. The U. S. Geological Survey Water Science School. http://ga.water.usgs.gov/edu/ • Mayo Clinic. Functions of water in the body. http://www.mayoclinic.com/health/medical/IM00594 • Food and Agriculture Organization of the United Nations. Coping with Water Scarcity: Challenge of the 21st Century. http://www.fao.org/nr/water/docs/escarcity.pdf • United Nations Department for Economic and Social Affairs. Water Scarcity. http://www.un.org/waterforlifedecade/scarcity.shtml • United States Centers for Disease Control. Healthy Water. http://www.cdc.gov/healthywater/	**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit.

IB Geography SL

Integrations	Intervention Strategies
• IB Economics: Understanding water markets • IB Chemistry: Understanding the origins and composition of the earth's water as well as phenomena like condensation, evaporation, sublimation, evapotranspiration, and contamination • IB Environmental Systems and Societies: Influence of water on human activities; influence of human activities on water quality and availability; causes and consequences of water scarcity • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay • IB Theory of Knowledge: Question of what should be considered an "improved" source of drinking water or an "improved" sanitation facility	In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Patterns of Environmental Quality***

Topic ***Biodiversity***

Biodiversity is a product of processes of creation that date back to the origins of the planet. The diversity of species and their evolution have been influenced by both natural and man-made systems. Ecosystems provide multiple services that are essential to human activity, but many are threatened by natural and economic factors. The consequences of loss of biodiversity/ecosystems and the services they provide could be dire for humankind, but greater attention to biodiversity loss has allowed for practices to be adopted that may reduce this loss.

Pacing

Week 13 of Year One

Content Statement

1. ***The earth's ecosystems function in ways that are essential to human activity and these functions are affected by natural and human influences.***

   Learning Targets:
   - I can define biodiversity and distinguish between an ecosystem, a habitat, and a biome.
   - I can contrast competing hypotheses about the origins of biodiversity.
   - I can describe biodiversity's impact on humans/human activity.

2. ***The destruction of earth's ecosystems is often associated with increased human consumption, and this threatens human well-being; governments and intergovernmental authorities have sought to reduce the loss of ecosystems.***

Content Elaborations

Biodiversity is the diversity of species – both among species and within species – and the diversity of ecosystems in which they live. Ecosystems are the living and nonliving elements that interact to support the diversity of life. This diversity is a source of controversy in which traditionalists see a supernatural creation producing all species in their finished form, while modernists see them evolving over millions of years.

Regardless, biodiversity in ecosystems support human activities through provisioning food and other essential materials, regulating natural processes that impact humans, and supporting cultural/spiritual/aesthetic values.

Biodiversity is lost when ecosystems are destroyed or altered in such a way that they no longer support the species that made their habitats there. This loss is usually a product of human consumption, brought on by population

IB Geography SL

Learning Targets:

- I can explain causes of the loss of biodiversity.
- I can describe the dangers posed by the loss of biodiversity.
- I can evaluate the policies and processes that are meant to reduce/mitigate loss of biodiversity.

growth and development. The loss of ecosystems threatens the loss of the services they provide, including those that support human communities' health, security, and economic well-being. The United Nations has only just begun the process of defining how to protect ecosystems and is trying to balance the protection of ecosystems with poverty-reducing economic development.

Content Vocabulary

- biodiversity
- ecosystem
- habitat
- biome
- traditional creation texts
- scientific explanation
- radiation/genetic mutation
- population/member
- natural selection
- "fitness"
- extinction
- speciation
- ecosystem services
- provisioning
- regulating
- supporting
- cultural
- Living Planet Index (LPI)
- terrestrial, freshwater, marine
- tropical/temperate
- causal factors
- population growth
- development
- consumption
- direct pressures
- habitat loss, alteration, fragmentation
- invasive species
- pollution
- climate change
- over-exploitation of species
- U.N. Convention on Biological diversity
- Aichi Biodiversity Targets
- sustainable development
- resource efficiency

Academic Vocabulary

- contrast
- define
- describe
- distinguish
- evaluate
- explain

Formative Assessments

Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target.

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complete and accurate information; 3 = fulfillment of all command terms with some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt. Students may resubmit formative assessment assignments with revisions based on feedback and receive higher scores until the day that the unit summative assessment is administered.	teacher using past markschemes as examples.
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Integrations • IB Environmental Systems and Societies: Influence of biodiversity on human activities; influence of human activities on biodiversity – especially the question of what causes the loss of biodiversity, how this loss may be reversed/mitigated, and what its consequences may be for humans • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay • IB Theory of Knowledge: Question of what is the value of biodiversity, both in terms of humans' physical well-being and their	**Intervention Strategies** In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or

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IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Patterns of Resource Consumption and Environmental Sustainability***

Topic ***Petroleum Consumption***

Petroleum is a product of processes of creation that date back millions of years. Petroleum products have become central to human activity, but the pace of petroleum consumption threatens to leave humanity without this valuable resource, while causing severe environmental degradation and subjecting human societies to economic instability and conflict. The consequences of unrestrained petroleum consumption could thus be dire for humankind.

Pacing

Weeks 14-15 of Year One

Content Statement

1. ***Petroleum products originate in natural processes but are refined by humans for specific purposes; industrialized societies have grown increasingly dependent upon the consumption of petroleum products.***

   Learning Targets:
   - I can describe the process by which oil was formed and is refined into petroleum products useful to humans.
   - I can analyze global and regional patterns in petroleum production and consumption.

2. ***Dependence on the production and consumption of petroleum products has caused environmental, economic, and political problems for both producing and consuming societies.***

   Learning Targets:
   - I can explain the influence of petroleum production and consumption on the environment.
   - I can analyze the influence of petroleum on oil consumption-dependent

Content Elaborations

Petroleum was formed when the buried remains of plant and animal organisms were subject to intense heat and pressure over millions of years. This produced oil and natural gas that, when drilled and refined, provide fuel for transportation and heating as well as household products. Petroleum reserves and production are determined by location of petroleum resources, while economically more developed countries are heavy refiners and consumers.

The production and transportation of petroleum requires infrastructure that may degrade ecosystems, but its consumption, especially in the burning of fossil fuels, is a major polluter and is thought to be a major contributor to global warming/climate change. Dependence on petroleum consumption renders human societies economically vulnerable to oil price shocks; dependence on petroleum production and export has the same effect, while engendering political corruption and internal conflict. Control of petroleum reserves has also been a subject of international conflict leading to wars.

societies.
- I can analyze the influence of petroleum on oil production/export-dependent societies.
- I can analyze the influence of petroleum production and consumption on geopolitics/international relations.

Content Vocabulary

- hydrocarbons
- trap/reservoir
- porosity/permeability
- "pay dirt"/"pay zone"
- crude
- light vs. heavy/sweet vs. sour
- refinery
- separation
- conversion ("cracking")
- treatment
- production vs. refinery capacity
- reserves
- peak oil production
- tar sands/oil shale
- Exxon Valdez disaster
- Deepwater Horizon disaster
- dispersants; booms & skimmers
- double-hulled tanker
- Kolva River disaster
- slurry disposal/treatment
- abandoned wells/caps
- global warming & climate change
- CAFE standards/hybrid vehicles
- wealth transfer/potential GDP
- gasoline expense/congestion
- oil-dependent development
- resource curse
- exchange rate
- authoritarianism/repression
- oil dependency/vulnerability
- Yom Kippur War 1973
- OPEC oil cartel/embargo
- Strategic Petroleum Reserve
- Iran-Iraq War 1980-1988
- Persian Gulf War 1991
- al Quaeda

Academic Vocabulary

- analyze
- describe
- explain

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http://oceanworld.tamu.edu/resources/oceanography-book/oilspills.htm

- United Nations Environmental Programme. Global Marine Oil Pollution Information Gateway: Effects of marine oil pollution on economy and human health. http://oils.gpa.unep.org/facts/economy-health.htm#health
- Cordesman, Anthony. U. S. Oil and Gas Import Dependence: Department of Energy Projections in 2011. http://csis.org/publication/us-oil-and-gas-import-dependence-department-energy-projections-2011
- Hardy, Roger. The Iran-Iraq War: 25 Years On. http://news.bbc.co.uk/2/hi/4260420.stm
- Karl, Terry (June 2007). "Oil-led Development: Social, Political, and Economic Consequences." CDDRL (Center on Democracy, Development, and The Rule of Law) Working Papers Number 80.
- Organization of Petroleum Exporting Countries. Brief History. http://www.opec.org/opec_web/en/about_us/24.htm
- United States Department of Energy. Costs of Oil Dependence. http://www1.eere.energy.gov/vehiclesandfuels/facts/2008_fotw522.html
- United States Department of Energy. Petroleum Reserves. http://www.fossil.energy.gov/programs/reserves/
- United States Department of State. OPEC Oil Embargo 1973-74. http://history.state.gov/milestones/1969-1976/OPEC

Integrations

- IB Economics: Understanding markets for petroleum products and the economic impacts of petroleum dependency (as an import-dependent consumer society or as an export-dependent producer society); understanding cartels and strategic reserves
- IB History: Historical background on conflicts related to the control of petroleum reserves and the wielding of economic and political influence by key petroleum producing and consuming states
- IB Chemistry: Understanding the origins and composition of petroleum as well as the refining process and use of dispersants and detergents on oil spills

Intervention Strategies

In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult

IB Geography SL

• IB Environmental Systems and Societies: Influence of petroleum products on human activities; influence of human use of petroleum products on the atmosphere—especially concerns about pollution and the nonrenewable nature of petroleum reserves • IB Mathematics: Models for estimating "peak oil" production • IB Design Technology: Design to ensure safety/security of petroleum extraction, refining, transportation, and consumption and to reduce its environmental impact • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay • IB Theory of Knowledge: Question of whether petroleum, though nonrenewable, will ever actually "run out"; what constitutes "running out" of petroleum	academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Patterns of Resource Consumption and Environmental Sustainability***

Topic ***Environmental Sustainability***

Human societies have relied on the consumption of natural resources for thousands of years, but during the industrial era the pace of consumption has accelerated. When the rate of consumption exceeds natural capacities to regenerate resources, the rate of consumption is said to be unsustainable. Conservation strategies and alternatives to nonrenewable resources, especially petroleum, are being considered in an effort to achieve environmental sustainability.

Pacing

Week 16 of Year One

Content Statement

1. ***Some human societies have come to consume resources at a pace so great that the earth cannot reproduce them; this threatens the future well-being of human societies.***

   Learning Targets:
   - I can define "biocapacity" and "ecological footprint/consumption footprint" and outline the factors that determine their size.
   - I can outline trends in global resource consumption and explain the differences between countries/regions' consumption.
   - I can describe the potential consequences of having a large ecological footprint.

2. ***Many individuals and communities have sought to address the potential dangers of overconsumption by promoting sustainable consumption in the form of seeking alternatives to the consumption of nonrenewable***

Content Elaborations

Human societies have survived, evolved, and thrived through the consumption of natural resources for thousands of years. Yet, until recently, the consumption of resources has not exceeded the capacity of the earth to regenerate those resources. The expansion of economic development and explosion of human populations threatens to change this, however. Population growth is fastest in regions which are also experiencing rapid economic development, which threatens to render some ecosystems incapable of regenerating the resources that humans consume.

In response, many individuals and communities have taken steps to reduce their "ecological footprints" by pursuing development within the boundaries of sustainability. This is particularly so in industrially developed countries, and less so in industrializing countries. While sustainability is often seen as a noble goal that must be sacrificed to ensure economic growth, the costs of not reducing consumption to sustainable levels are increasingly being taken into

resources and embracing reuse and recycling of products made from nonrenewable resources. **Learning Targets:** • I can define "environmental sustainability" and analyze global patterns in environmental sustainability. • I can discuss the costs and benefits associated with environmental sustainability. • I can discuss the viability of various nonrenewable and renewable energy alternatives to petroleum. • I can discuss the viability of various strategies for achieving environmental sustainability. • I can evaluate policies and practices that are designed to maximize environmental sustainability.	consideration when examining this question. In the area of petroleum consumption, particular attention has been paid to seeking alternatives, including nonrenewables like coal and natural gas, and renewables like solar, wind, hydroelectric, nuclear, biomass, geothermal, and tidal power. Each has its advantages and drawbacks. Another popular set of strategies is "reduce, reuse, recycle." This focuses on reducing consumption, especially by rejecting disposable products in favor of reusable ones and recycling materials instead of filling landfills. As with the alternative energy sources, each of these offers advantages and drawbacks.
Content Vocabulary • global hectare • carbon/energy costs • cropland/arable land • forest • grazing/pasture land • fishing grounds/oceans • built-up land/infrastructure • ecological reserve/deficit • carbon emissions • global warming/climate change • resource depletion • ESI/EPI • costs of action/inaction • nonrenewable energy sources • coal • natural gas • renewable energy resources • solar/photovoltaic cell • wind/wind turbine • tidal/tidal turbine • nuclear/reactor • hydroelectric/water turbine • Three Gorges Dam • geothermal/steam turbine • biomass • waste reduction • reuse • recycling • substitution • Millennium Development Goals • U.N. Environment Programme • Business Council for Sustainable Development	**Academic Vocabulary** • analyze • define • describe • discuss • evaluate • explain • outline
Formative Assessments Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or	**Summative Assessments** Each unit summative assessment will consist of a series of written items that employ IB command terms, reflect IB expectations for rigor in expressing

three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target. Scores of 0-4 will represent: 4 = fulfillment of all commend terms with complete and accurate information; 3 = fulfillment of all command terms with some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt. Students may resubmit formative assessment assignments with revisions based on feedback and receive higher scores until the day that the unit summative assessment is administered.	mastery of content and concepts, and approximate (in point values and time allowed) the experience of taking the IB Geography SL Paper 1 and Paper 2 exams. When practical, authentic IB exam items from past IB Geography exams may be used, but it is not necessary. Summative assessments should be graded using markschemes that are similar to those used by IB examiners to grade IB Geography SL Paper 1 and Paper 2; these may be developed by the teacher using past markschemes as examples.
Resources • Nagle, G. & Cooke, B. Geography Course Companion. • University of Wisconsin, Atlas of the Biosphere http://www.sage.wisc.edu/atlas/maps.php?datasetid=8 • National Academy of Sciences. What You Need to Know about Energy: Our Energy System. http://www.needtoknow.nas.edu/energy/interactive/our-energy-system/ • United States Environmental Protection Agency. Clean Energy: Electricity from Nuclear Energy. http://www.epa.gov/cleanenergy/energy-and-you/affect/nuclear.html • United States Environmental Protection Agency. Landfill Methane Outreach Program: Basic Information. http://www.epa.gov/lmop/basic-info/index.html • United States National Institutes of Health. Reduce, Reuse, Recycle. http://kids.niehs.nih.gov/explore/reduce/reduce_waste.htm • University of Strathclyde. Tidal Power. http://www.esru.strath.ac.uk/EandE/Web_sites/01-	**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit.

02/RE_info/Tidal%20Power.htm • Drexhage, John and Murphy, Deborah. Sustainable Development: From Brundtland to Rio 2012. http://www.un.org/wcm/webdav/site/climatechange/shared/gsp/docs/GSP1-6_Background%20on%20Sustainable%20Devt.pdf • Organization for Economic Cooperation and Development. Costs of Inaction on Environmental Policy Challenges: Summary Report. http://www.oecd.org/environment/ministerial/40501169.pdf • Yale Center for Environmental Law and Policy. Environmental Performance Index. http://epi.yale.edu/about • PBS Video, e2: Energy (DVD) and Going to Green series (DVD)	
Integrations • IB Economics: Understanding markets for alternative energy; measuring marginal costs of action; externalities; understanding metaphor of ecological reserve/deficit • IB Chemistry: Understanding how carbon emissions and sequestration count into the ecological footprint; understanding some options for alternative energy (biomass, geothermal) • IB Environmental Systems and Societies: Measuring ecological footprint and understanding contributors; measuring biocapacity and understanding contributors; impact of overconsumption on ecosystems; methods for reducing consumption • IB Mathematics: Models for calculating biocapacity and ecological footprint • IB Design Technology: Design for alternative energy systems and sustainable use of resources • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay • IB Theory of Knowledge: What is sustainability and what is the proper balance between sustainability and economic development	**Intervention Strategies** In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Urban Environments/Environmental Sustainability***

Topic ***Environmental Issues of Cities – Stresses and Policy***

All of the issues relating to environmental degradation studied thus far – in the atmosphere, soil, water, and of biodiversity/ecosystems – can be influenced in ways that are specific to cities and have impacts that are specific to cities. In fact, the urban environment sometimes produces a higher rate of degradation and urban populations can be more severely affected. Consequently, growing attention has been focused on finding ways to reduce the causes and effects of environmental degradation in cities.

Pacing

Weeks 17-18 of Year One

Content Statement

1. ***Cities by their nature generate higher levels of heat than surrounding areas, which can threaten environmental degradation and reduce the quality of human life; governments and local nongovernmental agencies have sought ways to reduce this degradation.***

Learning Targets:

- I can describe the conditions created by "urban heat islands" and explain how these conditions are created.
- I can describe the dangers to humans and the environment posed by urban heat islands.
- I can evaluate measures available for mitigating the intensity of urban heat islands.
- I can evaluate measures available for mitigating the intensity of urban heat islands.
- I can explain additional causes of urban air pollution.
- I can describe the dangers to humans posed by urban air pollution.

Content Elaborations

Cities generate their own environmental problems and city dwellers suffer from existing environmental problems in ways that others do not. Because of the lack of vegetation and prevalence of dark materials, cities absorb and reradiate a lot of heat. This "urban heat island" poses dangers of heat-related illness to residents and passes on overheated runoff that can affect adjacent ecosystems. In some cities, measures like "green" or reflective surfaces have been promoted as a way to mitigate the urban heat island effect.

Pollution is another urban environmental problem. The discharge of particulate matter and chemicals from the burning of fossil fuels for transportation and power generation cause industrial and photochemical smog, which incites respiratory illness in humans. Noise pollution from transportation, construction, and climate control systems reduces sleep quality and raises blood pressure. Runoff from cities is often polluted by leaked petroleum products and chemical fertilizers used to promote lush green lawns in suburban areas. These can foul water supplies and harm freshwater species,

- I can explain the causes of urban water pollution.
- I can describe the dangers to humans posed by urban water pollution.
- I can evaluate measures available for reducing urban air and water pollution.
- I can explain the causes of soil degradation and loss of biodiversity arising from urban development.
- I can assess the impacts of soil degradation and loss of biodiversity arising from urban development.
- I can evaluate measures available for reducing soil degradation and loss of biodiversity from urban development.

as well as promote eutrophication of freshwater ponds and lakes.

Soil resources and ecosystems adjacent to cities are also threatened by urban expansion and sprawl. The popularity of "greenfield sites" on the periphery of the city for development brings more soil and ecosystems off-line, and the expansion of development and utility corridors carves up and degrades ecosystems until they can no longer support the species that once inhabited them. The loss of soil and ecosystems renders cities more vulnerable to flooding and pollution as the regulating qualities that soil and ecosystems provided disappear. Cities have thus turned to slow-growth regulation and have supported the rehabilitation of previously-developed but now abandoned "brownfield" sites" as targets for new development.

Content Vocabulary

- microclimate
- urban heat island intensity (UHII)
- surface cover
- heat capacity
- sky view factor (SVF)
- urban canyon
- anthropogenic heating
- particulate matter
- peak demand
- acid rain
- urban heat wave
- vulnerable populations
- green roofs/cool roofs
- cool pavements
- scrubbers
- particulate matter
- lead pollution
- photochemical smog
- tropospheric ozone
- noise pollution
- lung function
- asthma
- chronic bronchitis
- overburden
- infrastructure loading
- effluent
- runoff
- leaching/seepage
- emissions standards
- catalytic converter
- Air Quality Index
- waste management/minimization
- urban/suburban sprawl
- brownfield site/redevelopment
- greenfield site/preservation
- urban agriculture/forestry

Academic Vocabulary

- assess
- describe
- evaluate
- explain

Formative Assessments

Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or

Summative Assessments

Each unit summative assessment will consist of a series of written items that employ IB command terms, reflect IB expectations for rigor in expressing

three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target. Scores of 0-4 will represent: 4 = fulfillment of all commend terms with complete and accurate information; 3 = fulfillment of all command terms with some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt. Students may resubmit formative assessment assignments with revisions based on feedback and receive higher scores until the day that the unit summative assessment is administered.	mastery of content and concepts, and approximate (in point values and time allowed) the experience of taking the IB Geography SL Paper 1 and Paper 2 exams. When practical, authentic IB exam items from past IB Geography exams may be used, but it is not necessary. Summative assessments should be graded using markschemes that are similar to those used by IB examiners to grade IB Geography SL Paper 1 and Paper 2; these may be developed by the teacher using past markschemes as examples.
Resources • Nagle, G. & Cooke, B. Geography Course Companion. • University of Wisconsin, Atlas of the Biosphere http://www.sage.wisc.edu/atlas/maps.php?datasetid=8 • Gow, Tracy and Pidwirny, Michael. Photochemical Smog. http://dwb4.unl.edu/Chem/CHEM869J/CHEM869JLinks/royal.okanagan.bc.ca/mpidwirn/atmosphereandclimate/smog.html • Marshall, E. & Shortle, J. Urban development impacts on ecosystems. Chapter 7 in S. Goetz, J. Shortle, and J. Bergstrom (eds.), Land Use Problems and Conflicts: Causes, Consequences, and Solutions. • United Nations Department for Economic and Social Affairs. Water and Urbanization Media brief. http://www.un.org/waterforlifedecade/swm_cities_zaragoza_2010/pdf/03_water_and_urbanisation.pdf • United Nations Environmental Programme. Urban Air Pollution. http://www.unep.org/urban_environment/Issues/urban_air.asp • United States Department of Housing and Urban Development. Brownfields Frequently Asked Questions.	**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit.

http://portal.hud.gov:80/hudportal/HUD?src=/program_offices/comm_planning/economicdevelopment/programs/bedi/bfieldsfaq • United States Environmental Protection Agency. Engineering Controls on Brownfields Information Guide. www.epa.gov/brownfields/tools/ec_information_guide.pdf • United States Environmental Protection Agency. Heat Island Effect: Basic Information. http://www.epa.gov/heatisland/about/index.htm • United States Environmental Protection Agency. Water: Polluted Runoff – Urban Nonpoint Source Fact Sheet. http://water.epa.gov/polwaste/nps/urban_facts.cfm • United States Environmental Protection Agency. Smog – Who does it hurt? http://www.airnow.gov/index.cfm?action=smog.page1 • University of California-Davis. Photochemical Smog. http://chemwiki.ucdavis.edu/Physical_Chemistry/Kinetics/Case_Studies/Smog • University of California-Los Angeles Health Impact Assessment Clearinghouse. Noise Pollution. http://www.hiaguide.org/sectors-and-causal-pathways/pathways/noise-pollution • World Bank. Beyond Economic Growth: Meeting the Challenges of Global Development – Chapter X: Urbanization and Urban Air Pollution. http://www.worldbank.org/depweb/beyond/global/chapter10.html • World Health Organization. Guidelines for Community Noise. http://www.who.int/docstore/peh/noise/Comnoise-1.pdf	
Integrations • IB Chemistry: Understanding phenomena like the heat island effect, acid rain, industrial and photochemical smog, effluence and nutrient loading • IB Environmental Systems and Societies: How the relationship between the environment and humans is altered by the high density of cities; causes and consequences of environmental degradation related to urban areas; options to mitigate or reduce this degradation and its effects • IB Mathematics: Models to estimate light/noise pollution, electricity	**Intervention Strategies** In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review

consumption • IB Design Technology: How to redesign cities to reduce environmental degradation or mitigate/reduce its effects • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay	sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Internal Assessment: Geography Fieldwork Project***

Topic ***Fieldwork Project***

Fieldwork in geography involves developing a reasonable and relevant question for investigation (as well as a hypothesis about the answer to this question); designing and carrying out safe, reliable, and valid procedures for collecting data; and using appropriate techniques to represent and analyze that data. A valid conclusion to the fieldwork question is presented as part of a fieldwork project report that presents all relevant information in a logical format.

Pacing

Summer between Year One and Year Two; Weeks 1-4 of Year Two

Content Statement

1. ***Fieldwork in geography follows the scientific method in asking a question, posing a hypothesis, collecting reliable and valid data, conducting research, making a reasoned analysis, and reporting results in a systematic and academically honest way.***

Learning Targets:

- I can create a fieldwork question and suggest possible answers in the form of hypotheses.
- I can describe the geographic context of the fieldwork project and justify the choice of sites.
- I can explain the method of investigation used for the fieldwork project and carry out the investigation according to proper procedures.
- I can construct graphs, charts, and maps to represent the data collected in the fieldwork investigation.
- I can analyze the data collected using appropriate techniques and references to the fieldwork question and geographic context, as well as

Content Elaborations

Students begin a fieldwork project by identifying a broad subject for investigation; this must be a subject addressed in the course. They then propose a well-defined fieldwork question that will drive their investigation and give it focus. They may develop hypotheses that seek to predict an answer to the fieldwork question.

They then select sites for sampling and devise a set of sampling and data collection procedures or methods. These are carried out with attention to safety, reliability, and validity. Once the data are collected, students examine it by organizing and representing it using a variety of techniques, including graphs, charts, mathematical/statistical analysis, and especially maps.

From these representations of the collected data, students make an analysis in an effort to find an answer to the fieldwork question that is supported by the data. This answer may or may not support the students' original hypothesis; it must be justifiable using the collected data as represented, and it must take

IB Geography SL

the data collected and illustrative material. • I can state a conclusion that is consistent with the analysis of collected data. • I can explain anomalies in the data. • I can evaluate the investigation and suggest ways to improve or expand it. • I can identify all sources consulted in the course of the investigation using an acceptable citation format.	into account and address anomalies in that data. From this analysis, the students make and report a conclusion. Finally, students reflect on the methods/procedures that they followed during the course of their investigation and consider ways to improve or expand it. All of this must be written into a fieldwork project report that meets criteria established by the International Baccalaureate Organization and is free of any act of academic malpractice. All consulted sources must be cited in a consistent manner using an accepted format.
Content Vocabulary • fieldwork question • geographic context • locational map • method • procedure • data • graph • chart • data mapping • GIS • conclusion	**Academic Vocabulary** • analyze • construct • describe • evaluate • explain • identify • justify • state • suggest
Formative Assessments Formative assessment is ongoing during the Fieldwork Project. The project and research question itself should be developed in collaboration among the instructor and students, with the instructor providing ongoing feedback to the development process. Students' techniques and consistency in the collection and interpretation of data should be continually subject to scrutiny by the instructor, who should provide immediate, specific, and helpful feedback. The analysis and representation of data is assessed in one draft of the final report, per IB regulations, but it is suggested that both peers and the instructor provide feedback on this draft, using the assessment rubric provided by the IB Organization.	**Summative Assessments** The summative assessment for this unit is the final report on the fieldwork project, which includes sections on the research question, geographic context of the project, method of investigation, presentation and analysis of data, and a conclusion. The IB Organization provides an assessment rubric for all sections.
Resources • Nagle, G. & Cooke, B. Geography Course Companion. • Field Studies Council http://www.geography-fieldwork.org/ • International Baccalaureate Organization. Online Curriculum Center	**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their

IB Geography SL

Forum: Geography • Royal Geographical Society http://www.rgs.org/OurWork/Our+Work.htm	education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit. Students who wish a greater challenge in the Fieldwork Project specifically may attempt to integrate a broader range of data, choose a more complex fieldwork question, or even conduct a separate project from the rest of the class.
Integrations • IB Chemistry: Understanding chemical processes in observed phenomena • IB Environmental Systems and Societies: Opportunity to investigate phenomena, processes, and concepts studied in context of the IB Environmental Systems and Societies course • IB Mathematics: Statistical analysis; correlation coefficients, standard deviations, etc. • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay • IB Theory of Knowledge: Consideration of knowledge issues surrounding how hypotheses are created and how data is gathered, interpreted, analyzed, and presented; constructivist model of knowledge	**Intervention Strategies** Because the design and data collection for the Fieldwork Project may be conducted as a whole-class exercise, there is ample opportunity for collaborative strategies and one-to-one instruction. Additionally, while IB regulations prevent the instructor from providing additional assistance or feedback in the writing of the final report (other than providing feedback on the one draft), peer review is not prohibited by IB regulations. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Populations in Transition***

Topic ***Populations in Transition***

Pacing

Weeks 5-8 of Year Two

Content Statement	**Content Elaborations**
1. ***Population dynamics differ from region to region based upon physical conditions and economic development.*** **Learning Targets:** • I can explain population trends and patterns in births, natural increase, mortality, fertility, and life expectancy in contrasting regions of the world. • I can analyze population pyramids and construct population pyramids using collected data. • I can explain population momentum and the demographic transition of preindustrial, industrial, and postindustrial societies, and explain their impact on population projections. 2. ***The concentration of dependent individuals within a population can have significant impact on the quality of human life; governments enact policies to manage dependency.*** **Learning Targets:** • I can explain dependency and aging ratios and examine the impacts of youthful and aging populations. • I can evaluate examples of pro-natalist and anti-natalist policies.	Population trends vary by region and largely follow economic development. More economically developed countries usually have stable or even slightly shrinking populations characterized by low birth rates and high life expectancy; less economically developed countries tend to have high birthrates and low life expectancy. This reflects the demographic transition from a preindustrial society where agricultural economies reward having more children, to industrial and postindustrial economies which do not. Typically the populations of more economically developed countries are therefore evenly distributed among age groups or are aging, and in less economically developed countries they are youthful. These are represented by "stacked" and "broad-based" population pyramids, respectively. Aging and youthful populations can pose problems, since the very old and very young tend to depend on everyone else for support. To correct for aging or youthful populations, some governments adopt policies designed to incentivize or de-incentivize fertility. Governments may also promote or restrict migration, both within their territory and to/from other countries. Typically individuals and families choose to migrate in order to find better social, cultural, economic, or political conditions. In some cases migrations are forced by governments whose planning requires the clearing of some areas and the augmentation of available

IB Geography SL

3. The causes of both internal and external migration are personal, cultural, political, and economic; benefits and struggles accrue to both migrants and their original and target countries.

Learning Targets:

- I can discuss the causes of migrations, both forced and voluntary.
- I can evaluate internal and international migrations in terms of their geographic impacts at their origins and destinations.
- I can examine gender inequalities in culture, status, education, birth ratios, health, employment, empowerment, life expectancy, family size, migration, legal rights, and land tenure.

labor elsewhere. The loss of migrants may reduce burdens for the country of origin, but may also represent a lost resource; the converse is true of destination countries. Cultural influences may therefore also be lost or gained, and the question of assimilation versus identity retention looms large for migrants and their new communities.

Populations may also see divisions between males and females, and depending upon the country or region being examined, these inequalities are more or less pronounced. In general, women fare better in more economically developed countries and are faced with greater inequalities in less economically developed, more traditional societies.

Content Vocabulary

- demographics
- exponential/geometric growth (vs. arithmetic growth)
- annual growth rate
- crude birth rate (CBR)
- crude death rate (CDR)
- general fertility rate (GFR)
- age-specific birth rate (ASBR)
- standardized birth rate (SBR)
- total fertility rate (TFR)
- infant mortality rate (IMR)
- child mortality rate (CMR)
- life expectancy (E_o)
- population structure/population composition
- population pyramid
- triangular graph
- doubling time
- population momentum
- population projection
- demographic transition (agricultural, industrial, postindustrial)
- Malthusian view of population
- Boserup theory
- Durkheim theory
- neo-Malthusian view
- Limits to Growth model
- carrying capacity
- optimum population
- overpopulation
- underpopulation
- aging ratio
- dependency ratio
- older dependency ratio
- family planning
- pro-natalist policies
- anti-natalist policies
- migration/emigration/immigration
- remittances
- inverse distance law
- intervening opportunities
- push-pull factors
- “brain drain”
- economic migrant
- migrant worker
- refugee
- asylum seeker

Academic Vocabulary

- analyze
- compare
- construct
- contrast
- discuss
- evaluate
- examine
- explain

IB Geography SL

resources • anti-Malthusian view • illegal immigration • internally displaced persons	
Formative Assessments Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target. Scores of 0-4 will represent: 4 = fulfillment of all commend terms with complete and accurate information; 3 = fulfillment of all command terms with some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt. Students may resubmit formative assessment assignments with revisions based on feedback and receive higher scores until the day that the unit summative assessment is administered.	**Summative Assessments** Each unit summative assessment will consist of a series of written items that employ IB command terms, reflect IB expectations for rigor in expressing mastery of content and concepts, and approximate (in point values and time allowed) the experience of taking the IB Geography SL Paper 1 and Paper 2 exams. When practical, authentic IB exam items from past IB Geography exams may be used, but it is not necessary. Summative assessments should be graded using markschemes that are similar to those used by IB examiners to grade IB Geography SL Paper 1 and Paper 2; these may be developed by the teacher using past markschemes as examples.
Resources • Nagle, G. & Cooke, B. Geography Course Companion. • CIA World Factbook http://www.cia.gov/library/publications/the-world-factbook/ • United States Census Bureau International Programs http://www.census.gov/population/international/data/ • University of Wisconsin, Atlas of the Biosphere – Human Impact Maps http://www.sage.wisc.edu/atlas/maps.php?catnum=1&type=Human%20Impacts • European Environmental Agency World Population Projections http://www.eea.europa.eu/data-and-maps/figures/world-population-projections-iiasa-probabilistic	**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit.

• Malthus, Thomas. An Essay on the Principles of Population http://socserv2.socsci.mcmaster.ca/~econ/ugcm/3113/malthus/popu.txt • Turner, B. L., and Fischer-Kowalski, Marina. "Easter Boserup: An interdisciplinary visionary relevant for sustainability." http://www.pnas.org/content/107/51/21963.full • University of Chicago, Summary of Durkheim's "The Division of Labor in Society." http://durkheim.uchicago.edu/Summaries/dl.html#Anchor-The-47857 • Club of Rome, Limits to Growth: 40 Years http://www.clubofrome.org/?p=326 • Population Matters, Carrying Capacity http://www.populationmatters.org/wp-content/uploads/D20Carryingcapacity.pdf • CCTV, Effect of China's Family Planning Policy http://www.youtube.com/watch?v=Si0cWNb5rMY • World Economic Forum, Global Gender Gap Report 2013 http://www.weforum.org/reports/global-gender-gap-report-2013 • United Nations Economic and Social Council, Glossary: "Refugee" http://www.unesco.org/most/migration/glossary_refugee.htm • DW English, People and Politics: Germany, a Country of Immigration http://www.youtube.com/watch?v=vdiPPYWHcZ0 and http://www.youtube.com/watch?v=3pLNM2ZOEdk • RT English, Follow the Money http://www.youtube.com/watch?v=xErVG0PSxuc • RT English, Cultural Divide http://www.youtube.com/watch?v=V-8MwCHTiFU • The Economist, Migration and Remittances http://www.youtube.com/watch?v=hcoOENLfpUI • The Economist, The Largest Migration in History: China's Migrant Workers http://youtube.com/watch?v=KNXg-kYk-LU	

IB Geography SL

Integrations	Intervention Strategies
• IB Economics: Understanding labor markets and international currency markets • IB History: Historical context for the demographic transition from premodern to modern/industrialized to postmodern/postindustrial society • IB Environmental Systems and Societies: Understanding the relationship between available resources and the capacity of the earth to sustain human population growth • IB Mathematics: Statistics/statistical analysis • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay • IB Theory of Knowledge: Question of what constitutes a refugee	In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Disparities in Wealth and Development***

Topic ***Disparities in Wealth and Development***

Pacing

Weeks 9-12 of Year Two

Content Statement

1. ***Levels of wealth and development both between and within countries are seen to contribute to differences in the quality of human life.***

   Learning Targets:
   - I can define indices of infant mortality, education, nutrition, income, marginalization, and the Human Development Index (HDI), and explain the value of these indices in measuring disparities across the globe.
   - I can explain disparities and inequities that occur within countries resulting from ethnicity, residence, parental education, income, employment (formal and informal), and land ownership.
   - I can identify and explain the changing patterns and trends of regional and global disparities of life expectancy, education, and income.

2. ***Governments and intergovernmental authorities have sought to enact policies to reduce disparities in wealth and development; some have succeeded, while in some places nongovernmental initiatives appear to be more successful.***

   Learning Targets:
   - I can examine the progress made in meeting the Millennium Development Goals (MDGs) in poverty reduction, education, and health.
   - I can discuss the different ways in which disparities can be reduced with

Content Elaborations

Wealth and development are traditionally measured based upon factors that go beyond income to include standards of living. Generally speaking, better measures include access to adequate food, safe water and sanitation, medical care, and education. Within countries, these are more or less available to individuals and families in relation to their incomes and other forms of capital, including cultural capital. In some cases ethnic or racial background proves to be a de jure or de facto gatekeeper to a better quality of life.

Worldwide, large disparities exist between more economically developed countries, where income security, educational opportunities, and health care infrastructure are well-established, and less economically developed countries, where the resources do not exist to provide these. Developmentalist Theory holds that all societies pass through the same phases in development, and that more developed countries can assist less developed countries by providing resources needed to advance to the next step. Dependency Theory on the other hand holds that more developed countries rely on less developed countries remaining less developed so they will have to continue to sell resources to the more developed countries. Trade-based development advocates hold that through global free trade, resources, labor, and capital will flow to where they are needed to increase development and standards of living everywhere.

an emphasis on trade and market access, debt relief, aid, and remittances. • I can evaluate the effectiveness of strategies designed to reduce disparities.	In an effort to reduce these international disparities, the United Nations established Millennium Development Goals in all three areas. Member states and intergovernmental organizations like the World Bank and International Monetary Fund have, accordingly, established strategies to assist developing countries in stabilizing their currencies and constructing infrastructure. Some of these strategies, especially those that promote market access, are seen to succeed, though critics point to the loss of local traditional economies as a cost. Other approaches, including direct aid, have experienced surprising failures. As a result, acts that originate closer to the individual level, such as support of microfinance institutions and expatriates who make remittances to their families, have been increasingly popular and successful.
Content Vocabulary • gross national income (GNI) • purchasing power parity (PPP) • Human Development Index (HDI) • gender-related development index (GRDI) • gender empowerment measure (GEM) • education index • more economically developed country (MEDC) • less economically developed country (LEDC) • newly industrializing country (NIC) • Asian Tigers • malnutrition • starvation • deficiency disease • kwashiorkor • marasmus • obesity • land tenure • dependency theory • world systems analysis • Rostow Model • mercantilism/neomercantilism • trade-based development • comparative advantage • regional specialization • international division of labor • free trade vs. protectionism • tariffs • quotas • subsidies • trading blocs • export processing zone (EPZ) • free trade zone (FTZ) • World Trade Organization (WTO) • fair/ethnical trade • top-down development • direct foreign aid • World Bank • International Monetary Fund (IMF) • structural adjustment program (SAP) • stabilization measures • adjustment measures • debt service	**Academic Vocabulary** • define • discuss • evaluate • examine • explain • identify

IB Geography SL

• core – periphery - semi-periphery • income inequality • Gini coefficient • U.N. Millennium Development Goals (MDGs) • modernization/developmentalist theory • Heavily Indebted Poor Countries (HIPC) initiative • bottom-up development • microfinance • remittances	
Formative Assessments Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target. Scores of 0-4 will represent: 4 = fulfillment of all commend terms with complete and accurate information; 3 = fulfillment of all command terms with some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt. Students may resubmit formative assessment assignments with revisions based on feedback and receive higher scores until the day that the unit summative assessment is administered.	**Summative Assessments** Each unit summative assessment will consist of a series of written items that employ IB command terms, reflect IB expectations for rigor in expressing mastery of content and concepts, and approximate (in point values and time allowed) the experience of taking the IB Geography SL Paper 1 and Paper 2 exams. When practical, authentic IB exam items from past IB Geography exams may be used, but it is not necessary. Summative assessments should be graded using markschemes that are similar to those used by IB examiners to grade IB Geography SL Paper 1 and Paper 2; these may be developed by the teacher using past markschemes as examples.
Resources • Nagle, G. & Cooke, B. Geography Course Companion. • University of Wisconsin, Atlas of the Biosphere http://www.sage.wisc.edu/atlas/maps.php?datasetid=8 • United Nations Development Programme, Human Development Report http://hdr.undp.org/en and http://hdr.undp.org/en/countries • Barnett, Thomas P. M. The Pentagon's New Map	**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond

• Davidson, Adam, "Why Are Some Countries Rich and Others Poor?" http://www.npr.org/blogs/money/2012/03/16/148680705/why-are-some-countries-rich-and-others-poor • PBS, Race 2012: Ethnic Group versus Racial Group http://www.youtube.com/watch?v=Ue0lb4hug-8 • AfricaKnowledgeZone, Kenya: Ethnicity and Equality http://www.youtube.com/watch?v=bn156dKLa78 • "Quebec: A Nation" Episode 28: Quiet Revolution and the FLQ http://www.youtube.com/watch?v=PihGpM9-yi4 • Canadian Broadcasting Company, 1995 election night Quebec Referendum coverage http://www.youtube.com/watch?v=zXY7BMRmyxo • International Monetary Fund, The March of the Cities http://www.imf.org/external/pubs/ft/fandd/2007/09/picture.htm • Journeyman Pictures, "The Filipino Women Turning Rags Into High Fashion" http://www.youtube.com/watch?v=dEh-0TIuu2A • Journeyman Pictures: "Are Rio's New Walls Protecting the Environment or the Government?" http://www.youtube.com/watch?v=YgTID623U9I • McCloud, Kevin, "Slumming It" http://www.youtube.com/watch?v=1-yjpvzGKZQ • United Nations, Slum Survivors http://www.youtube.com/watch?v=cfW_r_4stqs • Vocativ, "The World's Tallest Slum: Caracas' Notorious Tower of David" http://www.youtube.com/watch?v=vlp9jlQUW0k • The Economist, Education and Inequality: School Years http://www.economist.com/mode/12672414 • Neuwirth, Robert, TED: The Power of the Informal Economy http://www.youtube.com/watch?v=ONM4JupBz_E • UNICEF, Working Paper: Beyond the Bottom Billion http://www.unicef.org/socialpolicy/files/Global_Inequality.pdf • United Nations, Millennium Development Goals Official Site	the minimum required by IB) to allow for additional days to indulge that expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit.

http://www.un.org/millenniumgoals/

- Pete McCormack and Tim Hardy, Hope in the Time of AIDS http://www.youtube.com/watch?v=mogTwwepces
- Rostow, Walt, The Stages of Economic Growth, Chapter Two https://www.mtholyoke.edu/acad/intrel/ipe/rostow.htm
- Ferraro, Vincent, Dependency Theory: An Introduction https://www.myholyoke.edu/acad/intrel/depend/htm
- FairTrade International, "What is Fair Trade?" http://www.fairtrade.net/what-is-fairtrade.html
- FairTrade International, "Fair Trade – The Story" http://www.youtube.com/watch?v=NhQJrz-aDfI
- Ethletic, The Ethletic Fair Trade Football Story http://www.youtube.com/watch?v=ZM5-FbKeSw
- Moyo, Dambisa. Dead Aid: Why Aid Is Not Working and How There Is Another Way for Africa
- Foreign Policy, "The List: The World's Most Powerful Development NGOs" http://www.foreignpolicy.com/articles/2008/06/30/the_list_the_worlds_most_powerful_development_ngos
- PovertyCure, "Microfinance 101" http://www.youtube.com/watch?v=_LK4XMF2u8Y (skip last one minute or so)
- World Bank, Despite Crisis, Remittances Robust http://www.youtube.com/watch?v=YHKbG7Js-64
- Wikistrat, "The World according to Tom Barnett – 2011 Brief" Parts 2-5 http://www.youtube.com/watch?v=fC4PsrOeOqE
- Center for Global Development, Commitment to Development Index http://www.cgdev.org/initiative/commitment-development-index/index

IB Geography SL

Integrations	Intervention Strategies
• IB Economics: Understanding the dynamics of global trade including concepts like comparative advantage and regional specialization; parallels IB Economics unit on Development Economics • IB History: Understanding the historical context of development assistance and for dependency theorists' critique of development as a form of colonialism/neocolonialism or mercantilism/neomercantilism • IB Environmental Systems and Societies: Understanding the relationship between available resources and opportunities for economic development • IB Mathematics: Statistics and statistical analysis • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay • IB Theory of Knowledge: Opportunities to address the ethical considerations of various theories of development and forms of development aid	In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Urban Environments***

Topic ***Urban Populations and Land Use***

Pacing

Weeks 13-16 of Year Two

Content Statement

1. ***Urbanization is the concentration of populations in cities; often these populations move to the peripheries of cities in response to urban stresses.***

   Learning Targets:
   - I can define urbanization and explain the variation in global growth rates and patterns.
   - I can explain centripetal and centrifugal movements.
   - I can explain the contribution of natural change to patterns of population density within urban areas.
   - I can explain the global increase in the number and location of megacities (population over 10 million).

2. ***Cities are not uniform in terms of wealth, social status, or economic function; these form internal structures.***

   Learning Targets:
   - I can explain the location of residential areas in relation to wealth, ethnicity, and family status.
   - I can examine patterns of urban poverty and deprivation.
   - I can examine the causes and effects of the movement of socioeconomic groups since the 1980s.
   - I can explain the spatial pattern of economic activity, the zoning of

Content Elaborations

Urbanization, the shift of population from rural areas to cities, began in industrialized countries over 200 years ago, but has shifted into high gear in less economically developed countries during the last 2-3 decades. Access to jobs has always been the driving force that attracted people to cities, and this has led to the explosion of megacities, especially in the developing world. Meanwhile, the inhospitable physical and social conditions of many large industrial cities caused populations to move outward toward the periphery, before a resurgence of urban renewal and gentrification brought residents back to the center city.

Within cities, a complex structure of residential, administrative, commercial, and industrial uses emerges and evolves. Residential areas are typically highly segregated based upon wealth, with some wealthy communities actually gating themselves off from the general population, or removing to the suburbs. The most impoverished residents live in slums either in the center city, long since abandoned by wealthier residents because of its inhospitable conditions, or in shantytowns on the peripheries of the city. Ethnic clustering also contributes to this pattern of segregation.

urban and suburban functions, and the internal structure of the central business district (CBD).

- I can describe the informal sector, its characteristics and location in urban areas.
- I can examine the causes and effects of the movement of retailing, service, and manufacturing activities to new locations, including brownfield sites.

Content Vocabulary

- urbanization
- river valley civilizations
- break of bulk point
- port
- head of navigation/fall line
- industrialization
- primate city
- megacity
- megalopolis
- core-periphery relationship
- hinterland
- urban hierarchy
- hamlet
- village
- town
- city
- metropolitan statistical area
- centripetal movements
- rural push factors
- urban pull factors
- multiplier effect
- basic vs. nonbasic sector
- centrifugal movements
- urban sprawl
- suburb/suburbanization
- exurb
- "edge" city
- re-urbanization/urban renewal
- brownfield sites
- gentrification
- residential segregation
- racial segregation
- racial steering/redlining
- restrictive covenant
- "White Flight"
- economic polarization
- urban poverty/deprivation
- cycle of deprivation
- gated community vs. ghetto
- ethnic clusters
- family life cycle
- census tract
- central business district (CBD)
- Burgess Concentric Zone Model
- Hoyt's Sector Model
- Harris and Ullman's Multiple Nuclei Model
- agglomeration
- deglomeration
- convenience/lower-order vs. comparison/higher-order goods
- range/threshold of a good
- regional patterns in city structure
- zoning
- formal vs. informal sector

Academic Vocabulary

- define
- describe
- examine
- explain

IB Geography SL

Formative Assessments

Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target.

Scores of 0-4 will represent: 4 = fulfillment of all commend terms with complete and accurate information; 3 = fulfillment of all command terms with some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt.

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Summative Assessments

Each unit summative assessment will consist of a series of written items that employ IB command terms, reflect IB expectations for rigor in expressing mastery of content and concepts, and approximate (in point values and time allowed) the experience of taking the IB Geography SL Paper 1 and Paper 2 exams. When practical, authentic IB exam items from past IB Geography exams may be used, but it is not necessary. Summative assessments should be graded using markschemes that are similar to those used by IB examiners to grade IB Geography SL Paper 1 and Paper 2; these may be developed by the teacher using past markschemes as examples.

Resources

- Nagle, G. & Cooke, B. Geography Course Companion.
- Lloyd, Peter and Dicken, Peter. Location in Space: A Theoretical Approach to Economic Geography
- United Nations International Children's Emergency Fund, An Urban World http://www.unicef.org/sowc2012/urbanmap/
- LaLiberte, Laura, "Centripetal and Centrifugal Forces" http://www.lauraliberte.com/wp-content/uploads/docs/CCforces.pdf
- Levy, Diane et al., "In the Face of Gentrification: Case Studies of Local Efforts to Mitigate Displacement" http://www.urban.org/UploadedPDF/411294_gentrification.pdf
- Hopkinson, Natalie, "Are Gentrified Cities Too Greedy?" http://www.theroot.com/articles/culture/2012/08/gentrification_in_dc_and_new_orleans_a_tale_of_two_cities.html

Enrichment Strategies

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- WOSU, Columbus Neighborhoods: German Village http://www.youtube.com/watch?v=hrRgPFbEAkg and The Short North http://www.youtube.com/watch?v=dn9UNZFc2_A
- The Urban Institute, Metrotrends: Demographics http://datatools.metrotrends.org/charts/metrodata/Dashboard/v2/landing.cfm
- University of Michigan Population Studies Center, Residential Segregation: What It Is and How We Measure It http://enceladus.isr.umich.edu/race/seg.html
- Boustan, Leah Platt, Racial Residential Segregation in American Cities http://enceladus.isr.umich.edu/race/seg.html
- Turner, Margery Austin and Fortuny, Karina, Segregation and Low-Income Working Families http://www.urban.org/uploadedpdf/411845_residential_segregation_liwf.pdf
- University of Texas, Ethnic Geography http://www.utexas.edu/depts/grg/sanders/GRG305/PowerPoint/Ethnic%20Geography%20-%20Part%201.pdf
- Kolvin, I. et al, "A Longitudinal Study of Deprivation: Life Cycle Changes in One Generation - Implications for the Next Generation," http://www.kolvinpsych.net/sites/default/files/pdf/a-longitundinal-study-of-deprevation_0.pdf
- Hofstra University, The Burgess Urban Land Use Model, http://people.hofstra.edu/geotrans/eng/ch6en/conc6en/burgess.html and Sector and Nuclei Urban Land Use Representations http://people.hofstra.edu/geotrans/eng/ch6en/conc6en/sectornuclei.html
- Petroff, John, Urban Economics http://www.peoi.org/Courses/Coursestu/mic/fram12.html
- Useful Community Development, Understanding Land Use Zoning http://www.useful-community-development.org/land-use-zoning.html

IB Geography SL

Integrations	Intervention Strategies
• IB Economics: Understanding land/housing markets; how demand for a good is affected by transportation costs; flows of products and consumer spending • IB History: Historical context for emergence and evolution of cities, rapid urbanization, and the impact of global trade on the growth of cities • IB Mathematics: Modeling economic influences on urban structures; statistics and statistical analysis • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay • IB Theory of Knowledge: Debating causes of segregation	In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

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Strand ***Urban Stress and the Sustainable City***

Topic ***Urban Populations and Land Use***

Pacing

Weeks 17-20 of Year Two

Content Statement

1. ***The density of populations in cities combines with limited resources to create urban stresses; these can be alleviated by proper management of resource inputs and waste outputs.***

Learning Targets:

- I can examine symptoms of urban stress, including congestion, overcrowding and noise, depletion of green space, waste overburden, poor quality housing, social deprivation, crime, and inequality.
- I can describe the city as a system in terms of inputs (energy, water, people, materials, products, food) and outputs (solid, atmospheric, and liquid waste, noise, people).
- I can distinguish between a sustainable circular system where inputs are reduced and outputs are recycled and an unsustainable, open/linear city system with uncontrolled inputs and outputs.
- I can refer to at least two city case studies to discuss the concepts of sustainable city management and the urban ecological footprint.
- I can evaluate one case study of each of the following: (a) a socially sustainable housing strategy, (b) an environmentally sustainable pollution management strategy, (c) a strategy to control rapid city growth resulting from in-migration.

Content Elaborations

Cities experience large and growing concentrations of human activity but possess limited resources to meet the demands posed by that activity. Spatial stress is witnessed in overcrowding and the loss of green space; infrastructure stress manifests itself in traffic congestion, housing shortages, and pollution; economic stress results in poverty and crime; social stress can be seen in alienation and mutual mistrust and suspicion.

Some of these stresses could be reduced through planning and policy-making that starts with the premise of the city as a system that requires inputs and produces outputs. Planning for a sustainable city involves finding ways to reduce resource consumption so that inputs do not overwhelm existing infrastructure. It also involves minimizing outputs through reuse and recycling of resources, again to protect infrastructure, but also to prevent environmental hazards that result from uncontrolled releases of pollutants. Urban systems can, when uncontrolled, absorb disproportional amounts of resources and generate dangerous levels of waste and pollution.

Cities that have embraced the goal of sustainability have done so by enacting policies that help reduce their ecological footprint. These include the provision of cleaner forms of transportation, especially public transportation, and the enactment of building codes and use of materials that reduce the urban heat island effect. Successful sustainable cities have provided streetside recycling

IB Geography SL

	programs and have sought to reduce traffic congestion and industrial emissions to reduce the creation of industrial and photochemical smog. Population growth and the supply of housing, too, have drawn the attention of policymakers, who use zoning practices and tax policy and partner with private organizations to ensure that population growth happens at a pace that can be matched by the expansion of safe housing.
Content Vocabulary • bypass • housing shortage/tenure • low-income/poverty housing • slums/squatter settlements/ shantytown • peri-urban areas • urban violence/crime • inputs/outputs/throughputs • sustainable city • greenfield sites/green belt • "slow/no-growth" strategies	**Academic Vocabulary** • describe • discuss • distinguish • evaluate • examine
Formative Assessments Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target. Scores of 0-4 will represent: 4 = fulfillment of all commend terms with complete and accurate information; 3 = fulfillment of all command terms with some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt. Students may resubmit formative assessment assignments with revisions based on feedback and receive higher scores until the day that the unit summative assessment is administered.	**Summative Assessments** Each unit summative assessment will consist of a series of written items that employ IB command terms, reflect IB expectations for rigor in expressing mastery of content and concepts, and approximate (in point values and time allowed) the experience of taking the IB Geography SL Paper 1 and Paper 2 exams. When practical, authentic IB exam items from past IB Geography exams may be used, but it is not necessary. Summative assessments should be graded using markschemes that are similar to those used by IB examiners to grade IB Geography SL Paper 1 and Paper 2; these may be developed by the teacher using past markschemes as examples.

IB Geography SL

Resources

- Nagle, G. & Cooke, B. Geography Course Companion.
- European Environment Agency, Urban Stress - the Problem http://www.eea.europa.eu/publications/92-826-5409-5/page037new.html
- United Nations, Sustainable Cities http://www.un.org/en/sustainablefuture/cities.shtml
- World Bank, Sustainable Cities http://blogs.worldbank.org/sustainablecities/
- World Bank Institute, Urban Development http://wbi.worldbank.org/wbi/about/topics/urban
- Smart Growth Network, Principles of Smart Growth http://www.smartgrowth.org/why.php
- PBS Video, e2: Transport (DVD) and Going to Green series (DVD)

Enrichment Strategies

Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit.

Integrations

- IB Economics: Understanding land/housing markets
- IB Environmental Systems and Societies: Understanding the relationship between environmental stress and the social stresses that urban dwellers experience
- IB Mathematics: Statistics and statistical analysis
- IB Design Technology: Designing/innovating structures for sustainable cities
- Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service"
- IB Extended Essay: Possible topics for the Extended Essay
- IB Theory of Knowledge: Defining sustainability

Intervention Strategies

In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Risk Assessment and Response***

Topic ***Characteristics of Hazards and Disasters***

Pacing

Weeks 21-24 of Year Two

Content Statement

1. ***Nearly every community is threatened by natural and human-induced hazards that are as diverse as the conditions that create them. When hazard events or disasters occur, they may cause wide ranges of damage to the environment, property, and human well-being.***

Learning Targets:

- I can explain the characteristics and spatial distribution of the following hazards: earthquakes, volcanoes, hurricanes, droughts, human-induced hazards.
- I can distinguish between types of hazards in terms of their spatial extent, predictability, frequency, magnitude, duration, speed of onset, and effects.
- I can distinguish between a hazard event and a disaster and explain why this distinction is not always completely objective.
- I can describe the methods used to quantify the spatial extent and intensity of disasters.
- I can explain the causes and impacts of any one disaster resulting from a natural hazard.
- I can explain the causes and impacts of any one recent human-induced hazard event or disaster.

Content Elaborations

Hazards exist as a result of natural and man-made factors. The characteristics and spatial distribution of natural hazards are determined entirely by the physical systems that produce them; these are present only where natural conditions allow. Human-induced hazards, however, though often a product of industrial processes, can threaten communities well beyond the highly industrialized or urban areas where they originate. Each type of hazard, and even distinct incidences of the same type of hazard, have their own distinguishing characteristics, making each unique, requiring unique understandings of the threat posed and potential responses.

Hazards represent potential danger to communities; a hazard event represents the realization of that threat. When a hazard event grows to cause such devastating or widespread destruction that a community cannot manage the response on its own, it is viewed as a disaster that requires a coordinated response and external resources.

Both physical and economic data, as well as human suffering, describe the intensity of a disaster. Physically intense disasters that strike more economically developed communities tend to cause greater economic damage, but the infrastructure that is in place for responses tends to reduce the human suffering. Meanwhile, when less economically developed communities are

IB Geography SL

• I can examine the ways in which the intensity and impacts of disasters vary in space and have changed over time.	faced with disaster, property damage is minimal, but the lack of infrastructure for a response causes high levels of human suffering.
Content Vocabulary • hazard • hazard event • disaster • cyclone/anticyclone • hurricane/typhoon • tropical depression/tropical storm • eye/eye wall • storm surge • tornado • funnel cloud • Tornado Alley • plate tectonics • volcano • Plinian eruption • ashfall • lithics/bombs • eruption column/collapse column • surge cloud • pyroclastic surge • earthquake • focus/epicenter • Ring of Fire • tsunami • drought • human-induced hazard • spatial/areal extent • frequency • regularity/temporal spacing • spatial concentration • magnitude • Saffir-Simpson Scale • Fujita Scale • Richter Scale • duration • speed of onset • effects • direct • indirect • predictability	**Academic Vocabulary** • describe • distinguish • examine • explain
Formative Assessments Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target. Scores of 0-4 will represent: 4 = fulfillment of all commend terms with complete and accurate information; 3 = fulfillment of all command terms with	**Summative Assessments** Each unit summative assessment will consist of a series of written items that employ IB command terms, reflect IB expectations for rigor in expressing mastery of content and concepts, and approximate (in point values and time allowed) the experience of taking the IB Geography SL Paper 1 and Paper 2 exams. When practical, authentic IB exam items from past IB Geography exams may be used, but it is not necessary. Summative assessments should be graded using markschemes that are similar to those used by IB examiners to grade IB Geography SL Paper 1 and Paper 2; these may be developed by the teacher using past markschemes as examples.

some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt. Students may resubmit formative assessment assignments with revisions based on feedback and receive higher scores until the day that the unit summative assessment is administered.	
Resources • Nagle, G. & Cooke, B. Geography Course Companion. • National Geographic Society, Hurricanes http://environment.nationalgeographic.com/environment/natural-disasters/hurricane-profile/ • Brinkley, Douglas. The Great Deluge: Hurricane Katrina, New Orleans, and the Mississippi Gulf Coast • The Weather Channel, Superstorm Sandy http://www.weather.com/weather/hurricanecentral/storms/2012/SANDY • BBC News, Typhoon Haiyan, http://www.bbc.co.uk/news/world-24901032 • CNN.com, Japan Earthquake-Tsunami Fast Facts, http://www.cnn.com/2013/07/17/world/asia/japan-earthquake---tsunami-fast-facts/index.html • PBS Frontline, Inside Japan's Nuclear Meltdown (DVD) • Discovery, How Stuff Works: How Japan's Nuclear Crisis Works: http://science.howstuffworks.com/japan-nuclear-crisis.htm • PBS Frontline, The Spill (DVD) • Time.com, 100 Days of the BP Spill, http://content.time.com/time/interactive/0,31813,2006455,00.html	**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit.

IB Geography SL

Integrations	Intervention Strategies
• IB History: Understanding the historical context for major disasters • IB Environmental Systems and Societies: Understanding the natural/environmental dimension of hazards, hazard events, and disasters, as well as their impact on human activities; understanding the relationship between human activities and environmental hazards • IB Mathematics: Statistics and statistical analysis • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay	In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Risk Assessment and Response***

Topic ***Vulnerability, Risk, Adjustments and Responses***

Pacing

Weeks 25-28 of Year Two
(In IB courses, weeks 29-36 of Year Two are reserved for Mock IB exams, exam review, and conduct of IB exams)

Content Statement

1. ***Because people see opportunities in locating in places threatened by hazards, they render themselves vulnerable; the level of vulnerability and risk is influenced by wealth, infrastructure, and measures taken in preparation for a hazard event or disaster.***

   Learning Targets:
   - I can explain the reasons why people live in hazardous areas.
   - I can discuss vulnerability as a function of demographic and socioeconomic factors, and of a community's preparedness and ability to deal with a hazard event when it occurs.
   - I can explain the reasons for some sectors of a population being more vulnerable than others.
   - I can examine the relationships between the degree of risk posed by a hazard and the probability of a hazard event occurring, the predicted losses, and a community's preparedness for it.

2. ***The difficulty in predicting hazard events and disasters often causes individuals and communities to underestimate the risk that they face, often with devastating consequences.***

Content Elaborations

There are few locations in the world that are without the threat of natural or human-induced hazards. When individuals and communities choose to locate themselves in a place that is threatened, they do so taking into account the likelihood of the hazard to manifest itself in a hazard event/disaster and the prospective amount of damage they would suffer.

As noted above, vulnerability to natural and human-induced disasters is very much influenced by the level of economic development and the resources available for a response. Even within economically-developed communities, however, persons in poverty are often more vulnerable to disaster because they lack the resources required to escape and recover – everything from their own transportation to insurance.

When communities perceive that a hazard event or disaster is likely, and especially if they perceive that devastating losses are likely, the risk of harmful consequences is actually reduced because the community makes adequate preparations, from long-term, such as requiring earthquake-proof construction techniques, to short-term, such as ordering evaluations. Too often, however, both individuals and communities tend to underestimate the risk because of false alarms in the past, a desire not to disturb their normal activities, a false

Learning Targets:

- I can explain the reasons why individuals and communities often underestimate the probability of hazard events occurring.
- I can discuss the factors that determine an individual's perception of the risk posed by hazards.
- I can examine the methods used to make estimates of the probability of hazard events occurring and of their potential impact on lives and property.
- I can discuss these methods by examining case studies relating to two different hazard types.
- I can discuss the usefulness of assessing risk before deciding the strategies of adjustment and response to a hazard.

3. ***Most communities attempt to reduce vulnerability and risk by instituting policies to prevent damage and creating plans and systems designed to respond effectively when hazard events and disasters happen. These focus on preventing human suffering, reducing property damage, and recovering normal activity as soon as possible.***

Learning Targets:

- I can describe attempts that have been made to reduce vulnerability by spreading the risk and by land-use planning.
- I can describe strategies designed to limit the damage from potential hazard events and disasters. I can describe the range of responses, at the community, national, and international levels, during and after a hazard event or disaster.
- I can distinguish between rescue, rehabilitation, and reconstruction responses, and explain how these responses are affected by community perceptions.
- I can examine the factors that affected the choice of adjustments before, and responses to, actual hazard events or disasters.
- I can discuss the importance of reassessing risk and reexamining vulnerability following any major hazard event or disaster.

sense of security posed by seemingly normal conditions, and sheer wishful thinking.

Risk assessment is made that much more difficult because natural hazard events often result from factors that are not fully understood or are so multiple in their causes that it is hard to predict their coming together. Broad warnings of the likelihood of a hazard event can put individuals and communities on alert, but the actual event is hard to "pin down" spatially or temporally, and while warnings of potential are useful, conditions may reach the warning threshold so often that they begin to lose their effect on threatened populations. While early warning is essential to reducing risk, repeated early warnings that prove "false" can actually reduce alertness and increase risk.

Risk can be reduced through the creation of preventative systems, such as building and zoning codes, the imposition of evacuations and curfews, and the establishment of response systems. Response systems may involve local resources, national resources, and even international resources, depending upon the extent and severity of the damage. These responses begin with the rescue of persons affected by a hazard event or disaster (within minutes, hours, days, or weeks), usually followed by the recovery of those who perished (within days and weeks), the rehabilitation of structures and systems not damaged beyond repair (with hours, days, weeks, and months), and finally the reconstruction of those that were (within months and years). During this process, a reassessment of the systems designed to prevent damage and respond is made in order to improve system responses to future hazard events or disasters.

Content Vocabulary

- predictability
- vulnerability
- rehabilitation
- reconstruction

Academic Vocabulary

- describe
- discuss

IB Geography SL

• vulnerable populations • risk • risk perception • risk management • spreading the risk • rescue	• acceptance • fatalism • modify the hazard • modify the vulnerability • land-use planning	• distinguish • examine • explain
Formative Assessments Formative assessments will consist of short assignments that address each learning target as it is completed, or perhaps groups of no more than two or three closely-related learning targets at a time. They should employ IB command terms, and feedback should include information about the extent to which each command term has been fulfilled as well as information related to the completion of the learning target. Scores of 0-4 will represent: 4 = fulfillment of all commend terms with complete and accurate information; 3 = fulfillment of all command terms with some gaps or errors in information; 2 = at least one command term is not fulfilled or there are significant gaps or errors in information; 1 = at least one command term is not fulfilled and there are significant gaps or errors in information; 0 = no attempt. Students may resubmit formative assessment assignments with revisions based on feedback and receive higher scores until the day that the unit summative assessment is administered.		**Summative Assessments** Each unit summative assessment will consist of a series of written items that employ IB command terms, reflect IB expectations for rigor in expressing mastery of content and concepts, and approximate (in point values and time allowed) the experience of taking the IB Geography SL Paper 1 and Paper 2 exams. When practical, authentic IB exam items from past IB Geography exams may be used, but it is not necessary. Summative assessments should be graded using markschemes that are similar to those used by IB examiners to grade IB Geography SL Paper 1 and Paper 2; these may be developed by the teacher using past markschemes as examples.
Resources • Nagle, G. & Cooke, B. Geography Course Companion. • Nick, Gilbert A. et al, Emergency Preparedness for Vulnerable Populations: People with Special Health Care Needs, http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2646456/ • Brinkley, Douglas. The Great Deluge: Hurricane Katrina, New Orleans, and the Mississippi Gulf Coast		**Enrichment Strategies** Due to the nature of the IB Geography curriculum, it is difficult to envision an approach to enrichment. The course is taught with the expectation that its content and standards for performance are equivalent to those of a first-year college survey course, and students who choose to enroll in this course do so in anticipation that the course, in and of itself, is an enrichment of their education in history. Opportunities for enrichment lay in students' choices to expand specific inquiries in each unit and in the instructors' freedom and flexibility (given the additional instructional hours built into this course beyond the minimum required by IB) to allow for additional days to indulge that

• The Weather Channel, Superstorm Sandy http://www.weather.com/weather/hurricanecentral/storms/2012/SANDY • BBC News, Typhoon Haiyan, http://www.bbc.co.uk/news/world-24901032 • PBS Frontline, Inside Japan's Nuclear Meltdown (DVD) • Discovery, How Stuff Works: How Japan's Nuclear Crisis Works: http://science.howstuffworks.com/japan-nuclear-crisis.htm • PBS Frontline, The Spill (DVD) • Time.com, 100 Days of the BP Spill, http://content.time.com/time/interactive/0,31813,2006455,00.html	expanded inquiry. IB Diploma Programme students may also choose to focus their Extended Essay on one of the topics from any unit.
Integrations • IB Economics: Understanding markets and how they influence individuals' and communities' responses to hazards, hazard events, and disasters • IB History: Understanding how communities' histories influence their responses to hazards, hazard events, and disasters • IB Environmental Systems and Societies: Understanding the relationship between human activities and environmental hazards • IB Mathematics: Statistics and statistical analysis of risk; modeling for prediction • IB Computer Science: Modeling risk • IB Design Technology: Designing/innovating structures that are more hazard/disaster-resistant • Creativity-Action-Service: Opportunities for awareness-raising or advocacy as "service" • IB Extended Essay: Possible topics for the Extended Essay • IB Theory of Knowledge: Understanding how individuals and communities perceive hazards and the risk they pose, and how they respond to hazard events/disasters	**Intervention Strategies** In IB courses, linking the daily instructional effort to the long-term goal of success on IB Geography SL Paper 1 and Paper 2 is probably the most important intervention needed. It is therefore important to: (1) develop daily skills that will allow them to summarize and organize the information they will need to be successful on exams; (2) teach them to develop a systematic approach to exam preparation; (3) provide extra assistance with exam preparation in the form of student- or teacher-led study groups/review sessions. For students who struggle to read, it is advised that instructional time (when practical) and/or "outside-the-classroom" time (when necessary) be used to piece together the meanings of difficult academic, statistical, or policy-related texts. IB Diploma Programme students are strongly advised to maximize their use of "IB Advisory" period to seek individualized support from their IB teachers.

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Risk Assessment and Response***

Topic ***Personal Financial Literacy/Building Wealth: Saving and Investing***

(This unit is appended to all IB Group 3: Individuals and Societies courses to facilitate students' completion of the IB Diploma Programme; it fulfills the State of Ohio's requirement that all students receive instruction in Personal Financial Management as a condition of graduation. The standards completed herein are developed directly from those included by the Ohio Board of Education as part of the Economics and Financial Literacy syllabus adopted as part of Ohio's College- and Career-Ready Academic Content Standards.)

Pacing

Week 37
(Meeting during both the period designated for IB Geography and the period designated for Theory of Knowledge since Theory of Knowledge will be complete by Week 34)

Content Statement

1. ***Wealth is built through the process of creating a budget, building savings, and learning to invest.***

Learning Targets:

- I can explain the 3 basic reasons for saving money.
- I can identify and explain the benefits of having an emergency fund.
- I can explain how compound interest works.
- I can explain the benefits of 3-6 months expenses saved.
- I can explain the need to diversify my investments and the interaction with risk.
- I can explain the need for discipline in building wealth.
- I can explain risk tolerance with my investments.
- I can define the following investment types: basic savings/checking, money market, CDs, bonds, stock, mutual funds, real estate, and commodities.
- I can evaluate risk in relation to time horizon and age.

Content Elaborations

Building wealth is a very important concept for all Americans. The focus here is how to accurately build a budget and plan for unexpected expenses, while also allocating money for the future. Techniques and strategies are used to deal with financial security, retirement savings, investment accounts, personal risk tolerance, college savings, and overall planning for emergencies as well as future wants.

Concepts such as emergency fund and planning for uncertain times are addressed in this unit. Investment options include, but are not limited to, passbook savings, CDs, money market, stocks, mutual funds, 401(k) corporate match, 403(b), 529, Roth IRA, and other investment vehicles.

The concept of simple interest vs. compound interest is also examined. Current incentives or programs will be discussed. Market timing vs. dollar cost averaging and short term vs. long term investments will be covered.

- I can explain pre/post tax investments – benefits and limitations.
- I can explain the following investment options: 401(k), 403(b), 529, Traditional IRA, Roth IRA.
- I can explain a 401(k) match.
- I can explain Social Security and private pensions.
- I can explain the value and need for a budget.

Content Vocabulary

- compound interest
- emergency fund
- interest rate
- money market
- Murphy's law
- bonds
- CD
- diversification dividend
- investments
- growth stock mutual fund
- liquidity
- mutual fund
- portfolio
- risk tolerance
- savings account
- single stock
- speculative
- track record
- 401(k)
- 403(b)
- 529
- IRA
- pre-paid tuition
- rollover
- Roth IRA
- timeframe
- pre/post tax investment
- financial discipline

Academic Vocabulary

- analyze
- apply
- compare/contrast
- define
- describe
- discuss
- evaluate
- examine
- explain
- list

Formative Assessments

- Pre-tests (graded but not recorded)
- Entrance slip: written response to prompt based on learning target to be covered in previous lesson (to ensure comprehension before moving on) or the upcoming lesson (to assess prior knowledge)
- "Thumbs-up, thumbs down" by students to indicate their sense of understanding
- Pose questions to individual students ongoing during course of lesson
- Whole class discussion of lesson with maximum participation; monitor for student understanding
- Seek quick individual student responses on white boards
- Seek quick choral responses from the whole group of students
- "Think, Pair, Share": students work in small groups to complete a

Summative Assessments

- Traditional unit test

prompt then report findings to class • Exit slip: short "bell-ringer" written quizzes (may include multiple choice, short answer, etc.) at the end of the period • Exit slip: responses to prompts at the end of the period • Written homework tasks based upon learning targets, with option to make corrections based on feedback • Quiz (graded but not recorded) • SLO pre-assessment	
Resources • Econ Alive!: The Power to Choose, by Teacher's Curriculum Institute	**Enrichment Strategies** Every unit has a current event presentation requirement. Each current event must apply to the current unit of focus. Students will also analyze news topics and current economic news both domestically and internationally. Financial planners will speak during this unit.
Integrations • IB Mathematics: Charts and diagram reading – analysis of data examples and models	**Intervention Strategies** In addition to IEP and 504 requirements: • Review sessions prior to unit test • One-on-one instruction and small group before, after school and during prep periods • Preferential seating • Extended deadlines where appropriate • IAT referral

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Risk Assessment and Response***

Topic ***Personal Financial Literacy – Credit and Debt***

(This unit is appended to all IB Group 3: Individuals and Societies courses to facilitate students' completion of the IB Diploma Programme; it fulfills the State of Ohio's requirement that all students receive instruction in Personal Financial Management as a condition of graduation. The standards completed herein are developed directly from those included by the Ohio Board of Education as part of the Economics and Financial Literacy syllabus adopted as part of Ohio's College- and Career-Ready Academic Content Standards.)

Pacing

Week 38
(Meeting during both the period designated for IB Geography and the period designated for Theory of Knowledge since Theory of Knowledge will be complete by Week 34)

Content Statement

1. ***Credit and loans when used wisely and responsibly can be beneficial in providing financial opportunities and establishing future credit worthiness but also pose dangers of mismanagement and debt.***

Learning Targets:

- I can list the various dangers of debt.
- I can list at least three myths of debt.
- I can discuss at least four different types of loans for consumers.
- I can explain how banks work and make money.
- I can contrast the differences between a credit and debit card.
- I can explain the value, importance, and desire for a good FICO score.
- I can identify good practices to enhance my FICO score.
- I can identify bad consumer practices that decrease my FICO score.
- I can identify the three major credit reporting agencies.
- I can identify various signs of identity theft.
- I can list steps in combating identify theft.

Content Elaborations

Credit and debt is a very important unit that addresses a real need in American society. Personal loans, credit cards, debit cards, college loans, mortgages, auto loans, and payday lenders are all key concepts addressed in this unit. Minimum payments, along with loan terms, will be discussed. The concepts of equity and being "upside down" in an asset that depreciates in value will be addressed. Current economic trends or examples will be used on a daily basis. Analysis of bubbles and consumer debt on the overall health of the economy will offer perspective as it relates to personal choices and behaviors.

Credit worthiness and practices that encourage such are addressed here. FICO score and the three credit reporting bureaus are examined, along with formulas for higher credit scores. Techniques and tools for managing debt, while encouraging as little borrowing as possible, are covered. Identity theft and privacy protections are also covered in this unit. Emphasis is given to the rise of white collar crime and the explosive nature of identity theft and electronic hacking.

IB Geography SL

Content Vocabulary

- mortgage
- ARM/fixed
- principle/interest
- home equity
- consumer loan
- installment loan
- appraisal
- lease
- grace period
- foreclosure
- depreciation
- financing
- buyer's remorse
- impulse purchase
- same as cash
- debt snowball
- annual fee
- depreciation
- loan term
- opportunity costs

Academic Vocabulary

- analyze
- apply
- compare/contrast
- define
- describe
- discuss
- evaluate
- explain
- examine
- list

Formative Assessments

- Pre-tests (graded but not recorded)
- Entrance slip: written response to prompt based on learning target to be covered in previous lesson (to ensure comprehension before moving on) or the upcoming lesson (to assess prior knowledge)
- "Thumbs-up, thumbs down" by students to indicate their sense of understanding
- Pose questions to individual students ongoing during course of lesson
- Whole class discussion of lesson with maximum participation; monitor for student understanding
- Seek quick individual student responses on white boards
- Seek quick choral responses from the whole group of students
- "Think, Pair, Share": students work in small groups to complete a prompt then report findings to class
- Exit slip: short "bell-ringer" written quizzes (may include multiple choice, short answer, etc.) at the end of the period
- Exit slip: responses to prompts at the end of the period
- Written homework tasks based upon learning targets, with option to make corrections based on feedback
- Quiz (graded but not recorded)
- SLO pre-assessment

Summative Assessments

- Traditional unit test

IB Geography SL

Resources	Enrichment Strategies
• Econ Alive!: The Power to Choose, by Teacher's Curriculum Institute	Every unit has a current event presentation requirement. Each current event must apply to the current unit of focus. Students will also analyze news topics and current economic news both domestically and internationally. Financial planners will speak during this unit.
Integrations	**Intervention Strategies**
• IB Mathematics: Charts and diagram reading – analysis of data examples and models	In addition to IEP and 504 requirements: • Review sessions prior to unit test • One-on-one instruction and small group before, after school and during prep periods • Preferential seating • Extended deadlines where appropriate • IAT referral

IB Geography SL

Theme

Geography is among the most misunderstood of the social studies. While knowing the locations of human and physical features of the earth (e.g., political boundaries, cities, rivers, iron ore deposits) is essential to geography, this is only the beginning, and unless students learn how to use this information to gain insights on the human condition, their experience will be meaningless, and in fact, they will not be "doing" geography. "Doing" geography requires students to develop a **spatial perspective** – that is, they must learn to analyze phenomena with attention to how where it happens influences how it happens (or even if it happens) and vice versa: how something that happens in a certain place influences that place. It also requires students to adopt an **ecological perspective** in which they analyze phenomena with attention to the interaction between humans and the environment – how each influences the other. Learning and mastering a whole "toolbox" of **geographic skills**, mostly focused on collecting and interpreting data, and then assembling and presenting it in a manner that supports students' logical conclusions, is also essential to "doing" geography.

Strand ***Risk Assessment and Response***

Topic ***Personal Financial Literacy – Risk Management, Insurance, Taxes***

(This unit is appended to all IB Group 3: Individuals and Societies courses to facilitate students' completion of the IB Diploma Programme; it fulfills the State of Ohio's requirement that all students receive instruction in Personal Financial Management as a condition of graduation. The standards completed herein are developed directly from those included by the Ohio Board of Education as part of the Economics and Financial Literacy syllabus adopted as part of Ohio's College- and Career-Ready Academic Content Standards.)

Pacing

Week 39
(Meeting during both the period designated for IB Geography and the period designated for Theory of Knowledge since Theory of Knowledge will be complete by Week 34)

Content Statement

1. ***Insurance is the transferring of risk to a third party. Individuals may protect their personal assets and wealth through the process of acquiring various insurance products.***

Learning Targets:

- I can explain and describe all critical parts of an Auto Insurance Policy.
- I can explain and describe all critical parts of a Homeowners and Renters Insurance Policy.
- I can explain the differences between Term and Whole Life Insurance products.
- I can evaluate the need for life insurance and life insurance as an investment vehicle.
- I can explain how a Health Insurance Policy is acquired and used.
- I can describe the difference between Disability Insurance and Long Term Care Insurance.

Content Elaborations

This unit will examine why insurance is needed at various levels and types. Examination of homeowners and renters, auto, health, disability, and different types of life insurance. Concepts of over-insured and under-insured will be covered and detailed. Key terms and concepts such as premium, coverage, liability, and deductible will be thoroughly addressed. Behaviors and life practices will be the focus on how to reduce risk and possibly insurance coverage too. The role and care for dependents will be addressed as it relates to insurance policies in the market place.

Taxes are also a focus in this unit. Students will learn how to interpret their paycheck and evaluate their earnings and overall deductions. Examination of sample W-2, W-4, and 1040 forms will be completed. Government expenditures and revenues will also be examined here, along with the current imbalance of our budget deficit.

IB Geography SL

2. *Individuals are subject to taxation by federal, state, and local agencies. Individuals can assess and manage the impact of taxes by understanding earnings statements, the W-4, W-2, and 1040 forms.*

Learning Targets:

- I can explain the details and purpose of the Federal Income Tax.
- I can explain the details of State and Local Income, Property, Sales Taxes.
- I can explain how tax dollars are spent and spending priorities.
- I can explain withholding and the W-4, as well as information in the W-2.
- I can describe "doing your taxes" and National Tax Day.

Content Vocabulary

- deductible
- automobile claim
- personal liability
- umbrella policy
- replacement cost
- comprehensive
- collision
- uninsured motorist
- underinsured motorist
- claim insurance
- premium
- VIN
- long term care insurance
- renters insurance
- co-pay
- level term
- HSA
- mortgage insurance
- term insurance
- whole life insurance
- beneficiary
- tax withholding
- National Tax Day
- W-4
- W-2
- FICA
- payroll deduction
- Social Security
- Medicare
- Medicaid

Academic Vocabulary

- analyze
- apply
- compare/contrast
- define
- describe
- discuss
- evaluate
- explain
- examine
- list

Formative Assessments

- Pre-tests (graded but not recorded)
- Entrance slip: written response to prompt based on learning target to be covered in previous lesson (to ensure comprehension before moving on) or the upcoming lesson (to assess prior knowledge)
- "Thumbs-up, thumbs down" by students to indicate their sense of understanding

Summative Assessments

- Traditional unit test

• Pose questions to individual students ongoing during course of lesson • Whole class discussion of lesson with maximum participation; monitor for student understanding • Seek quick individual student responses on white boards • Seek quick choral responses from the whole group of students • "Think, Pair, Share": students work in small groups to complete a prompt then report findings to class • Exit slip: short "bell-ringer" written quizzes (may include multiple choice, short answer, etc.) at the end of the period • Exit slip: responses to prompts at the end of the period • Written homework tasks based upon learning targets, with option to make corrections based on feedback • Quiz (graded but not recorded) • SLO pre-assessment	
Resources • Econ Alive!: The Power to Choose, by Teacher's Curriculum Institute	**Enrichment Strategies** Every unit has a current event presentation requirement. Each current event must apply to the current unit of focus. Students will also analyze news topics and current economic news both domestically and internationally. Financial planners will speak during this unit.
Integrations • IB Mathematics: Charts and diagram reading – analysis of data examples and models	**Intervention Strategies** In addition to IEP and 504 requirements: • Review sessions prior to unit test • One-on-one instruction and small group before, after school and during prep periods • Preferential seating • Extended deadlines where appropriate • IAT referral