

TEACHER'S GUIDE TO XPEDITION HALL

Introduction and Overview of Xpedition Hall:

Imagine discovering a museum where you can take a transcontinental train ride, view the Earth from outer space, and witness the eruption of a volcano. In fact, you have! Welcome to National Geographic's Xpedition Hall, a virtual museum filled with interactive exhibits designed to provoke reflection on how human beings shape and are shaped by the world in which we live.

Xpedition Hall is built around the National Geography Standards, a set of eighteen statements that describes the foundations of geographic literacy. (For more information, click "Standards" on the Xpeditions homepage.) The Hall contains one exhibit for each of the standards, and groups these exhibits into six galleries, which correspond to the standards' six underlying "elements":

- I. The World in Spatial Terms
- II. Places and Regions
- III. Physical Systems
- IV. Human Systems
- V. Environment and Society
- VI. The Uses of Geography

Moving Through Xpedition Hall:

Visitors enter Xpedition Hall by appearing to float down through a transparent dome toward the floor and click "Enter." This sets them in the middle of the hall, facing down a path towards gallery I, "The World in Spatial Terms." Clicking on the path brings them to an archway. They can then click onto paths to the right (path II) or left (path VI) which allows them to move in different directions within the hall. This can be repeated to face down any pathway. The simplest method, however, is to use the floorplan of the hall that appears on the screen to the right. Visitors can click one of the round circles around the central circle, and easily move to that location in the hall.

Moving the mouse into any gallery on the diagram makes the gallery light up. The name of that gallery appears in yellow just below the diagram, and a small red "X" appears in the lit yellow circle, showing the visitor's location. The first dot in every gallery lights up blue when a mouse is on it. Clicking on it to move there turns it yellow and it gets a red "X." The blue dot is just a location from which to stand and look at the gallery exhibits. Other dots within that gallery are the exhibits themselves. Starting from gallery I, and progressing to the right (or clockwise) through all six galleries, exhibits are labeled X1 through X18. The "X" stands for "Xpedition."

Xpedition Hall can be viewed using the QuickTime virtual reality capability of the site by clicking on the initials "QTVR," which appear on the screen. This lets visitors "stand" in the middle of the dome and look around them to see the layout of the building. You can also do this within the six galleries, which allows visitors to scan the area in which they are standing as if they were in the building or the galleries.

Besides being an interesting way of viewing the hall, virtual reality can be used creatively by teachers to involve a wide range of students. Assignments in mapping, for example, can be created by letting students explore the site using virtual reality and then assigning them to draw maps of the site or of individual galleries. Teachers involved with art can use virtual reality in discussing perspective. They can assign students to draw the same location after viewing it from the side using the virtual reality tool, but translate that into a view from above. Lessons in geography including directions and using a compass can also be developed. For instance, a class might assign one direction within the hall as North, and students would then write directions to different sites or draw maps, based on the points of a compass.

Exhibits and Activities:

The galleries and their related activities are organized according to the six elements of the National Geography Standards, as follows:

- **Gallery I** : The World In Spatial Terms
 - X1 Globe Projector: Uses maps and other geographic tools to explore information from a spatial point of view. Shows that different map projections distort or emphasize geographic features, and how maps can illustrate many kinds of information including physical geography and political organization.

- X2 Mental Mapper: Shows the use of mental maps to organize information in a spatial context. Illustrates how children and adults are different in the ways they organize information including the "mental maps" they make of locations and how to find their way to an objective.
- X3 World Viewer: Shows visitors six different kinds of information in spatial terms including population growth, surface temperature, language, hours of sunshine, biomass energy and religion. Helps visitors see worldwide patterns, how uses and resources impact each other.
- **Gallery II: Places and Regions**
 - X4 Locator Booth: Explores physical and human characteristics of places. Helps students understand the relationships between factors such as terrain, population, rainfall, animal life, language and culture by illustrating their distribution in the world.
 - X5 The Satellite Spyglass: Telescopes visitors' view of the Earth, dropping them in stages lower and lower from a point in outer space where they can see the entire globe, until they are just above the National Geographic Headquarters in Washington, D.C. Students learn that we can make sense of our complex world by dividing it into different regions of three types: formal, functional and perceptual.
 - X6 Culture Goggles: Demonstrates how culture affects our perceptions by illustrating how the city of Jerusalem appears through the eyes of people from three faiths: Jewish, Christian and Muslim.
- **Gallery III: Physical Systems**
 - X7 Big Island Pool: Demonstrates how the forces of water (hydrosphere), wind (atmosphere) and geology (lithosphere) mold and give shape to the Earth in which we live.
 - X8 Eco-Cycle: Surveys how different plants and animals survive in an Alpine Desert, Lava Field, Grassland, Open Forest, and a Rain Forest. This activity explores some of the ways life forms have adapted to fit into the local ecology.
- **Gallery IV: Human Systems**
 - X9 Migration Station: Promotes understanding of why people migrate, using a virtual train station. Includes maps showing migration patterns within Europe including Iceland, Russia, Italy, France, Germany and Great Britain.
 - X10 Xpeditions Express: Transports visitors in a railroad car from which they catch glimpses of cities from London to Istanbul. They see how different cultures shape the look and feel of cities and communities as these appear through the windows.
 - X11 Rail Traffic Controller: Traces railroad cargoes and destinations on a rail traffic control board. By tracking imports and exports, visitors can understand how countries become related through mutual dependence on raw materials and finished goods.
 - X12 Paris Scope: Carries visitors through the city in the Paris Metro, stopping at the stations of Bastille, Cite, Cluny and Etoile. Passengers see changes in the patterns of human settlement through time, and learn how these have shaped the Paris of today.
 - X13 The Advisory Board: Describes forces for cooperation and conflict among civilizations from 1916 to 1991, through the warnings of a Travel Advisory Board. Visitors witness the results of action from both cooperation and conflict, and how these have shaped the history of Europe.
- **Gallery V: Environment and Society**
 - X 14 The Garden: Explores modern day Japan, highlighting changes in housing, industry and transportation. Demonstrates how these changes have affected the land, water and wildlife of this island nation.

- X 15 Living Landscapes: Illustrates natural disasters including earthquakes, tsunamis, volcanic explosions, mudslides and forest fires. Visitors learn about these events, how they affect human communities, and discover that living anywhere involves some risks.
- X 16 Sushi Bar: Tempts visitors with samples at a sushi bar, so they can see how resources from many regions are focused on local needs. Sampling Ebi (shrimp), Ika (squid) and Tako (octopus), students learn that even as it holds onto its traditional culture, Japan is in the midst of great change and depends on resources from all over the world.
- **Gallery VI: The Uses of Geography**
 - X 17 The Dig: Promotes an understanding of how humans have evolved by showing the way a skeleton gives up secrets from the past. Shows how skeletal remains tell us about how our ancestors adapted to the regions in which they lived.
 - X 18 Uplink Outpost: Downloads e-mail from Dr. George Stuart, the National Geographic's Chairman of the Committee for Research and Exploration. Visitors become involved by sharing with the Director their ideas about how to respond creatively to the rapid pace of change in our world.

Postcards, Assessment and Feedback:

When they finish all the activities in a gallery, students are automatically given a picture postcard of the Xpedition Hall activity just completed. They can write a message on it and instantly send it as email from the site. Besides being fun to do, this feature can also be used as an innovative and effective way of evaluating students and getting feedback from them. Like many other features found in Xpedition Hall, it can be of help in involving students of many different learning modalities.

For example, when they finish a site, students can be asked to address a postcard to their teacher, describing what they have done. They can review the sites they have visited, and may be asked to use the card to describe either what they have learned, or what they liked best. The teacher can collect these cards. As a measure of the student's work, and reaction to the different sites, they can form a basis for assessing student performance and involvement.

Beyond an assessment tool, the postcards can be used in other ways to involve all students who visit the site.

- The cards themselves can be printed out by the students and gathered into a travel book, illustrated with drawings and maps (which can be downloaded from the Atlas section of the Xpeditions website), and made into a journal.
- Artistic students can attach their postcards to posters, which they create by drawing or making collages using magazine pictures.
- Students in music classes can use the cards as a basis for making up travel songs, which could be shared with their classes as a way of reporting their work in Xpeditions.
- Students who enjoy working in three dimensions could build models of some of the things they write about in their postcards, even recreating some of the machines.
- Some students will find that the site poses large questions about human beings and our relationship to the world we live in, which they can address through the postcards.
- Those who enjoy working in groups and who learn best by exchanging ideas with others can put on a skit in which several students simulate a railroad car trip. Different students can play the parts of conductor, tourist, businessperson, environmentalist and child as they travel through a scene taken from the Xpeditions Express, in yet another way of demonstrating and sharing what they have learned.

In these ways the postcard activity can be used to bring closure to work in Xpedition Hall, as well as giving teachers the basis for evaluating student performance across a wide range of learning styles.

Suggestions for Using the Site:

- **Open Exploration:**

The first time students use Xpedition Hall they should have at least 15 minutes to explore it freely. Having a base of informal exploration is a good foundation on which to build further, more formal work at the site. This informal play excites curiosity, and makes them eager to return and find out more. Students should be encouraged to play with the exhibits and talk with classmates about what they are finding. Some may discover things others will miss. The hall is designed to be hands-on and to appeal to kinesthetic learners as well as those who learn through traditional academic activities. Visitors who are able to make intuitive leaps, are curious to explore what might be around the corner, have a lot of energy, and who have active imaginations will be able to make excellent use of this site. Those qualities are advantages in finding out what Xpedition Hall has to offer. If students can range freely, they may find ways to explore the site which are best suited to their own learning strengths.

- **Age Ranges and Settings:**

The activities in Xpedition Hall are designed to be flexible, interesting and open ended. In the real world, all travelers and explorers, whether young or old, and with different backgrounds, learning strengths, interests, abilities and experience, learn about the world with great success. In the same way, visitors to Xpedition Hall learn from the site in different, but valuable ways. Xpedition Hall may be used in formal and informal classrooms as well as home-based learning settings. The Blue Ribbon Links and Family Xpedition sections of the Xpeditions website, as well as other National Geographic resources and content resources through MarcoPolo, can be used to enhance and complement the activities in Xpedition Hall.

Meeting Varied Student Needs:

Xpedition Hall is a flexible, productive environment for engaging a wide range of students. Age is no obstacle to successfully using the site, as students from elementary school through high school can find activities which will engage them. Older students will get different benefits from the site than younger ones, but each will learn and experience the activities at their own level.

Because the activities are open-ended and part of a virtual museum, not just a document, the site can be used by students with different learning styles. Listed below are some projects stemming from the Xpedition activities which would appeal to the wide range of learning modalities found among students. They are suggestive of the possibilities available to an individual student working at home, as well as to a large class working in a school with a teacher.

- "Man on the street" interviews in which students play different characters traveling through a country
- Debates between industrialists and conservationists over development of natural resources
- Building and displaying scale models of actual "machines" found at Xpeditions, such as the Culture Goggles or the Rail Traffic Controller
- Student-produced videos in which students role play people from different cultures being questioned by visitors or tourists, to uncover differences in attitude and perspective
- Large display maps showing a make-believe route of travel through Europe or some other continent
- Songs made up, written down and performed about some of the Xpeditions activities
- Skits in which students pretend to be some of the Xpeditions machines, and other students use them
- Building and displaying collages of pictures from magazines, illustrating the clash or overlap of cultures
- Collecting and displaying newspaper articles which illustrate international trade and mutual dependence between nations

Home Learning:

Home-based learners, whether working individually or in groups, will find Xpeditions to be a valuable resource. Because the hall is built around the National Geography Standards, home based learners have the assurance that Xpeditions activities have been carefully designed to support high standards.

Being a virtual hall, the site offers an opportunity to explore freely as well as become involved in structured projects. Experience gained in using Xpedition Hall can be used when visiting actual museums. Students could develop a plan for how they will use the site, and put the plan into practice using Xpeditions. They might keep a record of sites visited and what interests them most. They could draw some of what they see, make models, conduct further research, access maps (through the Atlas section of the Xpeditions website), or even make notes about the construction of the building. These activities can serve as a model for visiting a local art or natural history museum. A student would then be able to construct the same kind of record, and do similar activities using an actual, rather than a virtual, building. Comparing and contrasting the two experiences, virtual and actual, might be the culmination of the project.

Other ways of using Xpedition Hall suggested for all students naturally apply to home-based learners. Some of those projects, such as skits, plays, interviews, or music, might require a larger group. They can be used as an opportunity for individual or small group home-based learners to work with other groups, if so desired. This in itself would be an opportunity for students with interpersonal skills to use them, or for those who lack them, to practice and observe others. For all the students involved, their work in Xpeditions would be the unifying experience.

Lesson Plans

Unit 1: Making It Comfortable: Exploring Global Interdependence

Gallery: The World in Spatial Terms

Level: Middle School (6-9)

Addresses the Following National Standards:

- Standard 1: How to Use Maps and Other Geographic Representations, Tools, and Technologies to Acquire, Process, and Report Information From a Spatial Perspective
- Standard 2: How to Use Mental Maps to Organize Information About People, Places, and Environments in a Spatial Context
- Standard 3: How to Analyze the Spatial Organization of People, Places, and Environments on Earth's Surface

Lesson Overview:

In this lesson plan, students will develop their understanding of some of the critical factors that are involved in creating a successfully interdependent global community. To do this, students take the virtual tour through Gallery #1, Exhibit "The World in Spatial Terms," to look through the World Viewer and speculate about the possible connections among the factors presented. They are then asked to gather the specific information about a region of one continent in order to evaluate the factors for that region, and determine a list of possible needs it might have that another continental region of the world might offer. Students then make a presentation which includes concerns, considerations, offerings, and needs of their selected continent to share their understanding of global interdependence.

Objectives:

- Students will explore the elements of independence and interdependence.
- Students will use skills to gather information, infer possible outcomes and do research.
- Students will make an oral presentation with supportive evidence (visual and expository) to demonstrate their knowledge and understanding of the lesson.

Guiding Questions:

- How do population growth, language, biomass, surface temperature, hours of sunshine and religion influence one region's need and ability to become interdependent with other regions?
- What are some of the concerns and considerations that must be taken into account as a region seeks to become more interdependent with other regions?

Discussion:

To tap into what students already know and stimulate thought around this lesson, ask students about their thoughts on how language and religion might affect a region's ability to work with other regions to meet their needs. Do the same regarding hours of sunshine, amount of forest cover and population growth.

Next, have students enter Xpedition Hall and click on Gallery #1, and find the World Viewer. Once this has been done, have students proceed by clicking onto the world viewer and take the virtual tour to become familiar with each of the six topics that are addressed in this exhibit. Discuss how the various factors affect the needs of a territory if it is to support groups of people and their desire to have a thriving community.

Task:

Student groups will be working toward the creation of a classroom presentation that will include visual and written materials to share with their classmates about a continental region's elements of independence and interdependence.

Student groups will first speculate about the various concerns that a region might need to consider in becoming interdependent. Once these speculations have been recorded about the assets and potential of a region, students then gather information about a region's actual imports and exports, standard of living, concerns of the region and aspects that indicate that its thriving both economically and environmentally. Students will collect this data about their region by using nationalgeographic.com and Xpedition's Blue Ribbon Links at:

<http://www.nationalgeographic.com/resources/ngo/education/xpeditions/main.html>

The final presentations should include their speculations and their reasoning, and then create a realistic picture of their selected region that reflects the data collected.

Activities:

- Once students have taken the tour through the World Viewer exhibit and completed the postcard, have them return to the beginning of the exhibit in order to take note of the information regarding their chosen continental region as they navigate through each of the six categories. They should collect data about their region's "Population Growth, Language, Biomass, Surface Temperature, Hours of Sunshine, and Religion."
- Once they have their data collected, ask each group to speculate about the concerns and needs of their region. Students are to note the possible assets of their region—factors that may be helpful in sustaining the region's growth, industry and environment. Students could also infer the possible problems that could arise in the region because of any growth of population or industry. Finally, have students speculate upon what types of goods their region may have an abundance of that can be exported or traded in order to enter into an interdependent global marketplace. Students should keep this record and their hypotheses in order to compare their speculations with actual findings.
- To make the comparisons, students will collect data about their region by using nationalgeographic.com and Xpedition's Blue Ribbon Links at:
<http://www.nationalgeographic.com/resources/ngo/education/xpeditions/main.html>

Students will gather information and document a continent's resources, its actual exports, actual imports, standard of living information, and any other data that will help them to create a realistic picture of their selected region.

Evaluation:

In the final stage, the student groups will create class presentations that will address each step of their learning process—their speculations, the data collected and their final analysis of the current status, concerns, and considerations necessary for developing a healthy global future. The presentations and information therein can be evaluated based upon the clarity and depth of the student speculations and the quality of supportive or refuted evidence gathered through our websites.

Possible Extensions:

- Working as a class, students create a global map with arrows showing continental interdependence based on the information gathered.
- Students compare their continental interdependence map with political maps available through nationalgeographic.com and Xpeditions, noting sociological factors influencing interdependence such as political leadership, economics, alliances and history.
- Students use National Geographic News (<http://www.ngnews.com/>) to gather information about intercontinental relationships. Compare and contrast with the original continental interdependence map. Note conflicts and problems that may arise in the future, and possible methods of preventing additional conflicts by understanding global interdependence.

Additional resources:

http://www.un.org/Pubs/CyberSchoolBus/infonation/e_infonation.html

<http://www.nationalgeographic.com/resources/ngo/education/xpeditions/main.html>

<http://www.odci.gov/cia/publications/factbook/>

Unit 2: The Best Mystery Spot in South America

Gallery: Places and Region

Grade Level: Middle School (5-9)

Addresses the following National Geographic Standards:

- Standard 4: The Physical and Human Characteristics of Places
- Standard 5: That People Create Regions to Interpret Earth's Complexity
- Standard 6: How Culture and Experience Influence People's Perceptions of Places and Regions

Lesson Overview:

In this lesson, students will learn about the formal, functional and perceptual characteristics that define a region by using the Satellite Spyglass, and then prepare a brochure based on a place selected in the Locator Booth to highlight these aspects and demonstrate their understanding. Through this lesson, students learn to view a geographical location in terms of its physical terrain. Students will also be exposed to key concepts in language arts, such as identifying an audience, expository writing and literary style.

Objectives:

- Students will understand the concepts: formal, functional and perceptual characteristics of a region.
- Students will synthesize their knowledge and demonstrate understanding of concepts through creative and expository writing.

Guiding Questions:

- What are the formal, functional and perceptual characteristics that define and characterize a place?
- How are these characteristics marketed to an audience in order to draw the interest of people from around the world?

Discussion:

Ask students to bring in any tourist brochures that they may have around their home and begin this lesson by discussing what similarities each of the brochures have in common. Students should note that there is usually a picture of the terrain, some information about "getting around" or "getting to" the area and some catchy phrase to help the tourist make a mental link to something about the area that they want them to remember. Ask students to compare the brochures to identify which places would be interesting to just visit, which would be places to work and which places look like places they'd like to vacation. This will help students to begin to understand the body of this lesson.

Task:

Announce to students that they will be creating a brochure about a "place," using the formal, functional and perceptual categories to persuade an audience to come visit the area either for work, entertainment, tourism, or livelihood. Their task is to create a brochure to market their place to an audience. Using the Satellite Spyglass they will learn about three key ways in which geographers go about describing an area: formal, functional and perceptual. They will then be asked to go to the Locator Booth to select an area to market in their brochure, gather information from our Blue Ribbon Links to add pertinent information, and then present their brochure for class display.

Activities:

- Students enter into the Places and Regions gallery in Xpedition Hall. Using the **Satellite Spyglass** exhibit, students will explore the concepts: formal, functional and perceptual as they are applied to the geographic characteristics that define a region.

- Students are then asked to read through each of the “zoom-in” segments about the ways in which land is utilized, including the following: transportation, communication and other economic and cultural activities.
- Upon completing the tour and sending out the postcard, have students move into work groups to do their brochure creations. Once they are into groups, have them enter the **Locator Booth** to begin an exciting activity that will integrate the information they have just learned.
- Have students first explore the exhibit and eventually send the postcard. Once this is done, they are ready to go back to a particular area of interest to choose one of the “mystery spots,” identify the location, and gather information about the location using our Blue Ribbon Links.
- As students gather information about their “spot,” have them place the information into their appropriate categories: formal, functional and perceptual. It is recommended that a form be created for this purpose to facilitate the student’s organizing skills.
- Once students have gathered their information, they are to construct a tourism brochure of their South American “spot.” The student brochures will offer a minimum of three sections, each one describing the key concepts of this site: formal, functional and perceptual, but you may determine that other categories may be desired. Additional information, including maps, data, information and pictures may be used to enhance their brochures.

Evaluation:

Through their brochures, students should be able to demonstrate an understanding of the three key concepts in an organized and clear format, and provide a useful interpretation of their South American “mystery spot.” Student interpretations or analysis of what is important for their brochure and its meaningfulness for their purposes and audience is an important criteria of this lesson.

Lesson Extension:

Students can cover up the place name on their tourism brochure and share with other students to see if they can identify the Mystery Spot and the intended audience the brochure is addressing.

Additional Resources:

Map Machine: <http://plasma.nationalgeographic.com/mapmachine/plates.html>

Unit 3: The Fish that Told the Story

Gallery: Physical Systems

Grade Level: Middle School (6-9)

Addresses the following National Standards:

- Standard 7: The Physical Processes that Shape the Patterns of Earth's Surface
- Standard 8: The Characteristics and Spatial Distribution of Ecosystems on Earth's Surface

Lesson Overview:

This lesson provides students with a “problem-based” exercise that enables them to explore the interaction of plants and animals with their physical environment. The lesson emphasizes the results of changes in that environment and the consequent impact on the atmosphere, lithosphere and hydrosphere. It supports the scientific method, while reinforcing the principles of geography. Students are presented with a set of mysterious events. They are asked to identify the underlying cause that links and explains these events, to hypothesize about the cause, gather information and support their conclusions using information and definitions found in the Physical Systems gallery and related National Geographic sites.

Objectives:

- Students will explore the interaction between the lithosphere, atmosphere and hydrosphere.
- Students will apply problem solving and research skills.

Guiding Questions:

- What is the link between the lithosphere, atmosphere and hydrosphere of our planet?
- In what ways is the Earth dynamic?
- How do volcanoes affect each of these spheres in both positive and negative ways?

Discussion:

Open this lesson by discussing the concept of a “dynamic Earth” and how meteorologists and geologists might keep up with the changes. Ask students why it is important for people to know when there is a natural change in the atmosphere, lithosphere or hydrosphere.

If your students are ready, provide them with a basic description of Plate Tectonics, which can be found at <http://volcano.und.edu/learning.html>. Explain that the Earth is made of moving “plates” that intersect and float, sometimes bumping one another causing earthquakes to happen. Also, you may want to describe how the currents of wind and water influence every living thing on the surface. Discuss the interactive and dynamic nature of our world in order to lay a good foundation for the activity below.

Unit 4: As You Were Saying to the United Nations

Gallery: Human Systems, Xpedition Hall

Level: Middle School

Addresses the following National Geography Standards:

- Standard 9: The characteristics, distribution and migration of human population on Earth's surface
- Standard 10: The characteristics, distribution and complexity of Earth's cultural mosaics
- Standard 11: The patterns and networks of economic interdependence on Earth's surface
- Standard 12: The processes, patterns and functions of human settlement
- Standard 13: How the forces of cooperation and conflict among people influence the division and control of Earth's surface

Lesson Overview:

From many parts of the world, from the Middle East to Eastern Europe to Northern Ireland, banner headlines warn of the possibility of war. Some of these strong disagreements have the potential of dragging other nations into the problem, and there is always fear of another world war. Problems like these are not caused by simple misunderstandings or single events. Instead, they are based on conflicts which include major historical differences.

Using information at the Human Systems gallery of Xpedition Hall, students will explore, discuss and become familiar with economic, cultural, geographical and historical forces that influence cooperation and conflict among nations. This exploration will include discussion of the ways people influence and are influenced by the geographical areas in which they live, the ways people are distributed in their living patterns, the different social forces which cause interdependence among nations, and how that interdependence influences the ways people strive to control the areas in which they live. Students may also use information and resources in other parts of the National Geographic website.

Objectives:

- Access and gain familiarity with Xpedition Hall, including the resources and information in it and how it is organized.
- Be able to discuss interdependence exists between nations.
- Discuss and explain some of the complexities of population migration.
- Discuss factors uniting and dividing nations and populations within a country, giving examples.
- Write and orally deliver a 5-10 minute speech explaining some of the forces causing cooperation and conflict within a nation and between different nations.

Guiding Questions:

- What kinds of activities take place between countries that cause them to depend upon each other?
- In what ways might differences in culture cause difficulties between countries?
- What cultural differences might actually be a way for different countries to begin understanding each other, and building peace and cooperation?

Discussion:

The teacher should discuss with students what affects the way countries relate to each other. Have them list, while you record on the board, different kinds of influences. These will include trade, language, natural resources, religion, and history.

Ask students to think how within individual countries, populations are varied and have them give examples. Are there examples of how people came to settle in a place in which other people were already living? What kinds of conflicts might occur?

Ask students if they know a word that indicates the movement of groups of people from one region to another: migration. What are some of the reasons for migration and what is the result of this migration in how nations relate to each other?

Task:

The teacher provides the following scenario:

Each student is to imagine that they are an ambassador to the United Nations and an expert in international relations. Several European countries come for help. Recent changes in population in Europe are creating tension as countries struggle to adjust to people with different backgrounds migrating into them. Given Europe's history of wars, there is fear that they are heading for conflict. They are asking for help in understanding why there is such tension, and ways to develop greater cooperation both within each country and between the countries.

Students are to team up in groups of four, with even numbers of boys and girls on each team if possible. They are to write a speech and choose a team member to deliver it, orally, to the General Assembly. The class as a whole will play the role of the Assembly. In the speech they should attempt to explain what forces they see acting for and against cooperation to help the countries understand the problem they are facing. They should suggest ways the nations can take advantage of the things they have in common, as ways they can avoid conflict and promote cooperation and peace for their mutual benefit.

Activities:

As they gather information for their speech, students will visit all five sections of Gallery IV, Human Systems, learning some particular facts and gaining an understanding of the complexity of relationships between countries and populations. Remind them that information in one section might actually be used to answer questions from another.

- Students should go first to the Advisory Board activity in the Human Systems gallery in Xpedition Hall and read the Travel Advisory waiting for them. They should then go to the city of Vukovar in 1991. What happened here when a conflict grew into a war?
- At Migration Station, students should explore countries to which people immigrate, as well as those from which they migrate. What are some reasons people move?
- Boarding the Xpeditions Express, ask students to look at some of the different cultures across Europe. What contrasts do they see when they view London and Istanbul? What are some reasons these cultures might clash or might get along with each other?
- In the Rail Traffic Controller site, ask students to come up with reasons for cooperation between countries such as Germany and France. Do they know of reasons why these countries might not get along? They can also find information about this by going to the Advisory Board and accessing data from 1916.
- The Paris Scope allows students to travel through time. To understand the culture of a country, such as France, it is important to understand how its culture developed. Students can explore that by traveling back in time in Paris to see how it evolved. What influence have changes in architecture had on Paris? How have building projects through the ages affected life in the city?

Evaluation:

At the end of each speech, ask the other teams to briefly evaluate the speech they have heard in terms of content, presentation and how convincing it was. The teacher should participate in this evaluation.

Additional Resources:

In order to understand the role of the United Nations, students may access the [United Nations CyberSchoolBus Resource Source](http://www.un.org/CyberSchoolBus/menureso.htm) at <http://www.un.org/CyberSchoolBus/menureso.htm> and go for a tour at http://www.un.org/CyberSchoolBus/untour/index_i4.htm. They can also explore

the site for information about countries, which will be helpful in finding reasons for conflict or cooperation.

Students can view The Earth From Space at <http://earth.jsc.nasa.gov/> to see different views of the world illustrating geographical locations and to feel the close connection and need for cooperation between countries. This site allows students to view cities, general geographical locations, and access views using a variety of other criteria.

Unit 5: Balancing the World

Gallery: Environment and Society

Level: Middle School

Addresses the following National Geography Standards:

- Standard 14: How human actions modify the physical environment
- Standard 15: How physical systems affect human systems
- Standard 16: The changes that occur in the meaning, use, distribution and importance of resources

Lesson Overview:

Although it sometimes seems that the resources of the world are infinite, they are not. Imbalances in how we use resources can have immediate effects on our food supply, on plants and animals, on the air we breathe and the water we drink. Even our housing and transportation depends on finding how to balance the ways we meet our needs.

Using the Sushi Bar and The Garden in Gallery VI, Environment and Society, students explore what happens when demand by consumers rises, creating pressures on available resources. Using interesting, interactive “tools,” students come to realize that our job of balancing uses to protect our own way of life, as well as the rest of the planet, requires understanding some interesting concepts.

Objectives:

- Explore different sections of the Environment and Society gallery of Xpedition Hall, reflecting on the many unforeseen impacts that our needs have on the resources of the world
- Be able to describe a “chain of use,” beginning with a product we consume, and following it through several stages, back to its origin as a natural resource
- Understand some of the complexity of pressure on limited resources
- Invent a game which uses an enjoyable, competitive format to explore the idea of balanced use as well as the idea of everybody having to win in order for anybody to win

Guiding Questions:

- What are some of the differences between the idea of owning as much of a resource as possible, and the idea of using a resource in ways that it can be renewed?
- What are some examples of how physical systems have affected the way people live?

Discussion:

Students and teachers should discuss the idea of what gives something value. Why are some things worth more than others? Introduce the idea of demand, in which, when something is desired, its value goes up. Ask students if they can think of things in their own lives where that happens. Ask them if there are examples they know about which show this happening, or the reverse happening, when a value goes down as demand lessens.

Sometimes, when we do things we think are a good idea, what we do has an unintended consequence. Ask students if they know what that might mean. Ask for illustrations, and then give the example of someone wanting to produce shoes so people don't go barefoot, but pollution from the shoe factory poisoning the water of a river and killing fish. Ask students to discuss how they think people can balance these kinds of things. Can they give other examples?

Task:

- Discuss with students what resources are and develop a list such as air, water, fish, cattle, clothing, rail transportation, electric power, and so on. Remember, a resource does not have to be a natural resource, only something that is needed or in demand.

- Divide students into groups of four, and assign each group to be custodians of two resources, drawn by lot. Each group must “control” at least one important resource, so take some time to balance them out.
- Have each team of students design a game in which one rule of the game is that every group must have access to at least four kinds of resources even though each team initially controls only two resources. A team can agree to give another team access by simply agreeing, and they don’t lose access themselves. Students may introduce other rules and other actions into the game, such as war, trade, alliances, deals, and conservation.
- The goal of the game is for each group to get access or ownership of at least four resources. That is, the goal is for everybody to win. From when they begin playing, the whole class has twenty minutes for each group to get access to at least four resources. For every five minutes over that, one resource, determined by chance, disappears from the room and nobody can bring it back.

Activities:

In preparation for the game, students will visit the three areas of the Environment and Society Gallery. In doing so, they will gain a better understanding of how pressure impacts natural resources. They will begin understanding what a resource is, how human activity can have both intended and non-intended consequences, and how amazingly interdependent we have become in the world. They will be presented with examples of how this happens, and how disasters can be both the natural disasters we commonly think of, as well as man-made disasters, with the same kinds of consequences.

- Students go to Gallery V, Environment and Society, and enter Exhibit #14, The Garden. They should explore the six parts of this site, learning about the different impacts on resources that are shown. What is a resource? Is it only a natural resource, or are there other kinds? What makes something a resource? Why has the country of Japan been chosen to be the focus of this part of the gallery?
- At Exhibit #15, Living Landscapes, students can see several types of natural events which have major impacts, and which can cause terrible suffering and loss of life. How do students feel about these events, and is this different from a man-made event, such as an accidental pollution spill?
- In the Sushi Bar, the class gets to “sample” several different kinds of sushi, while learning something about it, but also seeing that having sushi requires a lot of widespread trade and commerce. Why is Maguro so expensive? Can students think of other examples that work the same way?

Evaluation:

The teacher should review key concepts from the work. This can be done by giving a short “definitions” written test, or it can be done orally in discussion with the whole class. Be sure to include terms such as resources, environment, society, chain of use, unintended consequences, and others which may have come up during the class.

Additional Resources:

In the Blue Ribbon Links, students can explore the site called Climatic Extremes and Weather Events, at <http://www.ncdc.noaa.gov/ol/climate/severeweather/extremes.html>. In this site they can explore all kinds of actual weather related disasters. They can ask themselves the question,

In another Blue Ribbon link, The American Fact Finder at <http://www.census.gov/>, students can explore population distribution. What is the relationship of population to pressure on resources? Can students give examples of this?

Unit 6: Digging into the Past

Gallery: The Uses of Geography

Level: Middle School

Addresses the following National Geography Standards:

- Standard 17: How to apply geography to interpret the past
- Standard 18: How to apply geography to interpret the present and plan for the future

Lesson Overview:

For a long time, archeologists have been fascinated with digging up the remains of ancient people. They do this in order to learn more about what those long ago people did: the art they made, the weapons they built, the clothes they wore and the design of their buildings. However, the bones of those ancestors of ours can also tell us a lot about the people themselves. By measuring the size and shape of these remains, we can learn how those ancestors were adapted to their environment, and can even make some guesses about how they lived by the size of the skulls which held their brains.

Accessing “The Dig” exhibit, this lesson explores how humans have adapted to their environmental setting over time. It asks students to consider that one of humanity’s major adaptations is a large brain which has in turn allowed us to control and modify the environment. The lesson further asks students to think about technological advances, population changes, and trends in physical traits such as height, weight and longevity which may impact the evolutionary process and our future survival.

Objectives:

- Understand the link between physical evolutionary adaptations and the creation and control of technology.
- Understand how technological advances can impact the direction of future evolution by insulating people from their environment.
- Use data to find out about evolutionary trends in human physical development and extrapolate into the future.

Guiding Questions:

- When we find leg bones in a dig which show adaptations for traveling long distances, what might that say about the area in which that individual lived, and about their life style?
- When they are uncovered in a dig, why are tools such an important discovery, and what kinds of things might we learn about ancient people by examining their tools?
- As humans are able to exert more and more control over their environment, what changes are taking place in the world, and what new challenges does humanity face?

Discussion:

The class should talk about different characteristics that might be found in examining human bones from a dig. Students should discuss how the environment in which people live can have a long-term effect on the actual shape and size of a population’s body type.

Students should also discuss what kinds of things people do which other animals generally do not do, such as use tools. What does this allow them to do to their environments, and environments in general? What effects can this ability have on the life in the area, including the people themselves?

Tasks:

Students should be directed to tour “The Dig” and read all the selections. They should pay particular attention to sections on the cranium and the femur so they understand the connection between physical adaptations that help survival, and the development of technology. They should think about our ability to make tools, which puts us in a different relationship to our environment than other animals, which usually can’t make tools. Just as our ability to control and modify our environment

through weapons, tools and technology may have influence our development in the past, students should think what other developments may take place in the future due to further advances.

Students are to discuss how people might look in the future. Discussion should include speculation about future advances in technology that might affect the way we live, how long we live, and what we do. Students are then given the task of drawing a picture of what they imagine people might come to look like in the distant future. They can speculate about inventions that might make life different and even less limited by the natural environment.

Activities:

After visiting the different sections of Gallery VI, students should think carefully about the future and what people might look like. Since the people we uncover in digs do not look the same way we do now, will people in the future also change from the way we are? Students should be instructed to do the following:

- Name, describe and draw pictures of three imaginary inventions of the future that might be developed. Talk about what part of the body might be affected by, or might in turn affect, the design of these inventions.
- Think about the long-term effects on human development because of these inventions. Describe and then draw what future humans might look like after many generations of people have lived, using these tools. For example, if personal transportation is developed to the point that it can be used not only for long distances, but inside of homes and building, what might be the effect on people's bodies? How might they evolve? Think of what the other inventions might be, and their effect on what people look like.
- Describe ways in which buildings and cities might change if these tools are used, and if people's bodies come to look differently. Would there be any influences on the evolution of people's brains?

Evaluation:

When the descriptions and drawings are completed and hung on the classroom walls, each student should briefly present his or her "vision" of a future human to the rest of the class. The class should be allowed to "vote" on the projects, allowing points for creativity, clarity of presentation, and ability to explain the relationship between the invention and its possible effect on human development.

Additional Resources:

Go to the Features section of the National Geographic Website at <http://magma.nationalgeographic.com/2000/culture/lost/index.cfm>. Read about three cultures which have vanished. Think about the possible result of not being able to adapt to changes in the environment, whether those are physical or social. Not only as individual civilizations but as humans, are we guaranteed to be able to adapt to or control our environment, or could something happen which would cause us to become extinct the way other civilizations or even other species have? Describe and imaginary scenario in which this might happen.