INTRODUCTION TO

GLOBALIZATION
Volume I

INTRODUCTION TO GLOBALIZATION

GLOBALSCOPE PUBLICATIONS
University of California, Irvine • School of Social Sciences
Introducing **GLOBAL CONNECT @ UCI**

Global Connect @ UCI is an original educational partnership developed by the University of California, Irvine’s School of Social Sciences to enrich California’s secondary school curriculum in international studies. This is accomplished by translating current university-level concepts and knowledge into a curriculum that is age appropriate for high school students.

The global studies knowledge gap in our public schools is a critical problem that needs a flexible and immediate response. Students need lessons they can relate to as global citizens that will affect how they see themselves in the world. They must be capable of thinking in terms of worldwide issues to succeed in their respective careers and lives so that they may contribute to the general welfare of society. This cannot be achieved through textbook curriculum that is outdated by the time it is received by students. Teachers cannot abandon their classroom responsibilities to acquire current knowledge of the quickly changing international environment. Global conflicts and issues need to be brought to the students as current events – not as history.

The study of worldwide issues through Global Connect establishes an environment that creates responsible global citizens and leads to access for students to higher education. Global Connect builds a bridge to the world for our nation’s secondary students.

Global Connect dedicates its educational program and publications to addressing California’s History Social Studies curriculum framework and the National Curriculum Standards for Social Studies. This is being accomplished through the creation of an original year long course, “Globalization and International Relations”; implementation of the syllabus at select schools in Orange County; sponsorship of countywide teacher seminars; and the development of new on-line curriculum options for secondary educators statewide and beyond. Classroom lessons are innovative in structure and not only teach students factual information but serve as an ideal platform for analytical and reflective thinking about global issues.

For additional information, please visit our website at: [www.globalconnect.socsci.uci.edu](http://www.globalconnect.socsci.uci.edu)
Common Core Standards in the Social Sciences

The pursuit of Common Core Standards is redefining America’s educational priorities. One of the most central and elusive problems in addressing these standards is developing academically challenging and classroom effective curriculum that addresses the needs of our students in different subject areas. Global Connect @ UCI, a unique educational initiative based in the School of Social Sciences at the University of California, Irvine, has developed original curriculum and teaching strategies to introduce secondary students to 21st Century global issues and events through an interdisciplinary lens. The lens integrates the various disciplines within social science: anthropology, economics, geography, international studies, political science, and sociology.

This integration occurs through concepts, readings, and “problem sets” found in contemporary university classrooms. Our academically centered course of study has been adapted into age appropriate thematic presentations, dynamic interactive, and literacy building workshops that realize the Common Core objectives.

Global Connect specifically targets and meets the Common Core Standards by:

- Focusing on non-fiction, discipline based content through formal academic PowerPoint presentations, interactive workshops, and readings
- Emphasizing Evidence Based Writing Skills through the introduction of take-home assignments, and unit capstone projects, and formal academic forms of in-class writing
- Building a discipline-based vocabulary (a set of new terms are defined to complement each week’s academic theme)
- Expanding the students’ abilities to: Use quality academic sources, organize data, analyze, and cite & discuss
- Integrating contemporary use of technology for online research and general inquiry

The Global Connect course on “Globalization and International Relations” is already serving as a Common Core option for secondary educators and students in California’s Saddleback Valley Unified School District and Newport Mesa Unified School District. The partnership between UCI, SVUSD, and NMUSD is currently exploring new strategies for sharing and advancing this dynamic new course so that other districts can adopt this as a vehicle for acquiring college ready critical thinking abilities and organizational skills. These strategies include the creation of effective teacher training modules for each unit; an expanded online topic-specific video library of presentations by UCI faculty and graduate students; and the continued development of GlobalScope Curriculum Guides.
This year, as with prior years, the content has been revised and edited to address the most recent global occurrences/issues and to introduce new resources. For an in-depth overview of our Program, please visit our website at: www.globalconnect.soesci.uci.edu

Ellen Schlosser

Ellen Schlosser
Global Connect @ UCI
Founding Director
Curriculum Development Advisor

Note:
In 2011, the University of California recognized Global Connect’s course, “Globalization and International Relations,” as an approved A-G academic elective course for California’s secondary students. The California Council for the Social Sciences recognized the program as being a Common Core ready curriculum and featured the program in their journal, Sunburst: A Publication of the California Council for the Social Studies.
GUIDELINE TO GLOBALSCOPE

GlobalScope is an expanding library of in-print and online guides that mirror UCI School of Social Sciences’ contemporary research and teachings related to 21st Century issues and conditions of globalization. The primary motivation behind this publication is to provide secondary teachers with an accessible social science resource that will help create “global” windows in the classroom. Our guiding principle is that high school students need to understand the contemporary changes that are influencing their educational and personal opportunities, and ultimately, their lives and careers.

Explanation of GlobalScope format:

Unit Presentations vary in format. Each presentation is centered on a specific topic and reflects the style of the individual faculty, graduate, or undergraduate student presenter. Several of the authors have created PowerPoint presentations that can be used by the classroom teacher. An annotated version with additional information has been included in the Teacher Edition. Some presenters have also provided lesson outlines.

Workshop Scripts seek to recreate the lecture/discussion format used in college courses. We alternate the formal introduction of topics with special interactive workshops. These age-appropriate workshops have been designed and successfully presented in the classrooms (grades 8 – 12) by Global Connect undergraduate interns. These workshops have been designed in a script-like manner with sections assigned to the university undergraduate interns. The workshop material can easily be adapted for “single voice” use by the classroom teacher.

Literacy Building Readings and Assignments provide students with exercises that will require them to read non-fiction primary source documents. After reading and analyzing the materials, the students will be given written assignments to strengthen their expository writing abilities. Some current topical articles and charts have been reprinted and cited.

Global Perspectives: International Relations & Globalization Course Workbook is a two-part workbook to be used in conjunction with the thematic module presentations throughout the semester.
Part I: “A Sense of Place: Identifying Nations by Name and Location” includes weekly political map identification exercises that provide students with the ability to recognize the location of the globe’s nations. These weekly exercises will allow students to locate and name the nations of each continent and significant regions.

Part II: “People of Purpose: 21st Century Global Citizens (‘Real Heroes’)” will introduce students to real heroes whose actions have impacted the distinct geographic areas being studied. These introductions will be made through video interviews/feature stories and assigned readings. Students will be asked to analyze the problems, strategies, and solutions associated with each of the featured social entrepreneurs through writing exercises. Over the semester the assignments will transition students from completing simple fill-in review sheets to composing five paragraph expository essays. The writing assignments, depending on length, can be used as in-class worksheets or as take home assignments. Grading of these assignments is recommended.

Identification of Curriculum Standards:

Each workshop and presentation addresses an objective identified in the National Council for the Social Studies Curriculum Thematic Strands and/or the objectives set forth by the California State History/Social Science Standards & Framework. For your personal reference, we have included a copy of the National Council’s Thematic Strands in the Appendix.

Complimentary Disk: All of the primary GlobalScope materials presented in this curriculum guide are provided on a disk so that classroom teachers can independently present the PowerPoint presentations and reproduce the worksheet assignments.

All the original materials are for individual classroom use only and not to be reprinted without express permission from the School of Social Sciences, University of California, Irvine.

Website: All materials contained in GlobalScope will be posted on the Global Connect @ UCI website: www.globalconnect.socsci.uci.edu
GLOBAL CONNECT COURSE SYLLABUS 2017-2018

SEMESTER I: GLOBALIZATION

Volume I: Introduction to Globalization
- Globalization & the Global Citizen
- Introduction to Globalization
- Our Earth
- Climate Change
- Water: A Global Crisis
- Food Scarcity
- Appreciating Cultural Diversity
- Immigration
- Inequality

Volume II: Project of Change
- Introduction to Sustainable Development Goals
- Creating an Original Project of Change
- Hunger and Poverty
- Good Health and Well-Being
- Quality Education
- Gender Equality
- Peace, Justice, and Strong Institutions

→ Capstone Project: Creation of Original NGOs

Volume III: Comparing the Wealth of Nations
- Defining Economic Roots of Globalization
- Defining Wealth
- Comparing the Wealth of Nations
- Multinational Corporations

→ Capstone Project: Comparing Nation-States

SEMESTER II: INTERNATIONAL RELATIONS

Volume IV: Introduction to International Relations
- Introduction to Nation-States
- Infrastructure
- Exploring Foreign Policy
- European Union
- Human Rights
- Fragile States
- Syria: The Story of a Fragile State

→ Capstone Project: International Reporter's Notebook
Volume V: Hot Topics & Hot Spots

- Global Challenges: Redefining Borders
- A Close-Up on ISIS
- The Refugee Crisis
- Nuclear Proliferation
- Cybersecurity
- New Nationalism

Volume VII: Generation Z – On the Path to Global Citizenship

- Generation Z
- Social Media
- Social Movements
- Global Citizen

→ Capstone Project: On the Path to Global Citizenship
The “Introduction to Globalization” is the initial GlobalScope Curriculum Guide used to engage the students in the year-long course. Through this unit, students will be introduced to the nature and significance of globalization in the 21st century through an academic sampler of different topics.

The topics focus on, but are not limited to, addressing the following key questions:

- **What is meant by the phrase “Global Citizen?”**
- **How do we define globalization in geographic terms?**
- **What are the cultural ties that connect the global population of 7 billion people?**
- **What 21st century environmental challenges do we need to address in order to protect and provide for the growing global population?**
- **How do the forces of “push” and “pull” define contemporary migration patterns across borders?**
- **Which methods are used to measure economic conditions within a given nation and between different nations?**

Through this introductory unit of study, students will experience the unique teaching-learning format that will be used throughout the course. Weekly academic themes are introduced through research-based PowerPoint presentations, followed up by two days of interactive workshops, and take-home “critical thinking” assignments to be completed independently by each student.

**Ellen Schlosser**

*Ellen Schlosser*
*Global Connect @ UCI*
*Founding Director*
*Curriculum Development Advisor*
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Bill Maurer, Dean of Social Sciences
Caesar D. Sereseres, Professor of Political Science
Mark Petracca, Associate Dean of Undergraduate Studies
Dave Leinen, Assistant Dean, Administration, Planning, and Resources

NEWPORT-MESA UNIFIED SCHOOL DISTRICT

NEWPORT HARBOR HIGH SCHOOL

Principal Sean Boulton
Host Teacher: Jennifer Thompson

EARLY COLLEGE HIGH SCHOOL

Principal David Martinez
Host Teachers: Sandy Kipfstuhl

ENSIGN INTERMEDIATE SCHOOL

Principal Mike Sciacca
Host Teachers: Sarah Tucker

TEWINKLE MIDDLE SCHOOL

Principal Kira Hurst
Host Teachers: Jackie Washington & Misty Smith

SADDLEBACK VALLEY UNIFIED SCHOOL DISTRICT

LAGUNA HILLS HIGH SCHOOL

Principal Bill Hinds
Host Teachers: Yoleisy Avila, Carri Geiger, Kirk Brown, Steven Schrenzel
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# Introduction to Globalization

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Lecture: Immigration

Migration by Aliza Asad
https://www.youtube.com/watch?v=YaLeao6RSQ&feature=youtu.be

Workshop: Immigration: Sending and Receiving Nations

Puerto Rico debt crisis drives exodus to U.S.
https://www.youtube.com/watch?v=RT2yIzZg3Ns

Now devastated': 5 yrs after Libyan revolution
https://www.youtube.com/watch?v=RBiAnL_ACDs

The Nepal Earthquake Aftermath in 360° Virtual Reality - Nepal Quake Project
- RYOT VR
https://www.youtube.com/watch?v=5tasUGQ1898

Somalian Refugees Flee Fighting, Famine in Ethiopian Camps
https://www.youtube.com/watch?v=WAtqjcS4p2c

Slideshow: Fleeing Somalia’s Drought

Workshop: Inequality in America: The Role of the Middle Class

Unit IX

China’s Burgeoning Middle Class Educated, Eager to Spend
http://www.youtube.com/watch?v=pFghoFRHtuw
Summary of the Teaching Modules on “The Global Citizen”

- Understand the Meaning of “Global Citizen”
- Understand Your Responsibilities as a “Global Citizen”
- Understand Major Global Issues
- Understand Your Education and Future Into the 21st Century through 2050

The Global Citizen of the 21st Century

- “Global Citizen” of the 21st century must ask the following questions:
  - What unique responsibilities do I have as a member of the most powerful and wealthiest nation in the world?
  - Why should I know what is happening globally, care about it, and perhaps make a difference by making the world a better place?
  - What educational goals must I set for myself to live a productive and secure life in the 21st century?

Questions to Consider Preparing for Your Future

- Beyond your formal education you must be aware, knowledgeable, and involved as a global citizen
- What kind of education do you need for your future?
- What kind of skills do you need to take advantage of job opportunities during your lifetime?
- How can you plan for a lifetime of opportunities that will take you to the year 2050—the first half of the 21st century?

A Timeline for the Future

1. The year you were born _____ Your age today _____
2. The year you will graduate from high school _____
   Your age when you graduate from high school _____
3. After four years of college what year will you graduate? _____
   What will your age be when you graduate? _____
4. If you plan to go to Law or Medical School, or seek an advanced degree like a Master’s or Doctorate (Ph.D.) add 3-5 years to your graduation year.
5. Add 30 years to the year that you complete all your education after high school _____
   After 30 years of work experience what year will it be? _____
   What will be your age after 30 years of work experience? _____
6. How old are your grandparents today? _____

Where are you?

The United States of America

You are here
1. The United States represents what percent of the world’s total population?
   - 35% _____
   - 1% _____
   - 4% _____
   - 20% _____

2. The United States represents what percent of the total landmass of the world?
   - 15% _____
   - 33% _____
   - 49% _____
   - 7% _____

3. The United States produces and consumes what percentage of the world’s energy production and manufactured goods?
   - 5% _____
   - 50% _____
   - 25% _____
   - 15% _____

4. The total yearly immigration (over 1 million people enter the U.S. as permanent immigrants) to the United States is:
   - 50% of all the world’s legal immigration ______
   - 25% of all the world’s legal immigration ______
   - 10% of all the world’s legal immigration ______
   - Equal to all the world’s legal immigration ______

5. Match the approximate minimum hourly wages of workers making the same shirt in different countries:
   - a. $1.00 an hour _____ China
   - b. $7.25 an hour _____ Dominican Republic
   - c. $0.50 an hour _____ United States
   - d. $0.15 an hour _____ Philippines

Where in the world are we located?

Why Care About the Rest of the World?

Do Americans have a greater responsibility to solve global issues?

Core Questions

- What is Globalization?
- How does it affect the United States? California? My community? Me in particular?
- Why does it matter that we understand the processes and consequences of globalization?
Defining Globalization in the Social Sciences

- “As a result of technological and social change, human activities across regions and continents are increasingly being linked together.”
- “A state of the world involving networks of interdependence at multicontinental distances...linked through flows of capital and goods, information and ideas, and people.”
- The significance of today’s globalization is not its newness but that it reflects a sharp decline in the costs of global communication and transportation.

Source: Robert O. Keohane, Dialog 10, Spring, 2002

Understanding Globalization: Three Basic Concepts

Connections  Competition  Cooperation

The World in 2016

The Global Agenda

World Economy

Terrorism

Immigration

The Economist

How to manage the migrant crisis

and keep Europe from being invaded by migrants.
Poverty
Towards the end of poverty

Global Environment
Clear thinking on climate change

Global Communications and Technology
Why computers will never be safe

Middle East
The fall of Aleppo
Turkey’s slide into dictatorship

North Korea
Handle with extreme care

Brexit
Divided we fall
Citizens Making A Difference
Eco-Soap Bank in Cambodia

- Samir Lakhani - Founder of Eco-Soap Bank
- Average daily wage in rural Cambodia: $1.50
- Hygiene products:
  - lack of affordability
  - low demand = lack of access
- Recycles hotel soap
- “Diarrheal diseases alone account for one in five deaths of Cambodian children age 5 and younger, largely due to poor hygiene practices.”

Globalization and the American Workforce

- “We are living in a knowledge-based economy that requires a highly skilled educated, flexible workforce. Requires workers who continually upgrade their skills over the course of their careers, so they can adapt and evolve with changing industries.”

Elaine Chao
Former U.S. Secretary of Labor

Questions to Consider
Preparing for Your Future

- Beyond your formal education you must be aware, knowledgeable, and involved as a global citizen
- What kind of education do you need for your future?
- What kind of skills do you need to take advantage of job opportunities during your lifetime?
- How can you plan for a lifetime of opportunities that will take you to the year 2050—the first half of the 21st century?

Globalization, Health of the Global Community, and You

- Evolution of 21st Century Education and Career Innovations
- Balancing Self-Interest with Service to Others
- Options on Making the World a Better Place
- You and the Year 2050 – How will you get there and what will you do?
Key Terms

1. **Global Interdependency**: Nations and societies are not only interconnected but also interdependent, socially, economically, politically, and environmentally.

2. **Private Life of the Citizen**: The private aspect of the individual pertains to one’s primary needs—education, health, work, family.

3. **The “New California”**: California ranks in the top five of global economies. Over half of the population is non-Anglo: Latinos, Asians, Afro-Americans make up over half of California’s population. It is the most “globalized” and “internationalized” state in America today.

4. **The Global Citizen**: The global citizen sees him or herself as part of a global community understanding that one’s community and nation are intertwined with global conditions and events, recognizing the need for all citizens to contribute to global solutions to problems.

5. **The Nation-State**: An area (territory) defined by specific borders and inhabited by people who mostly share a common culture. It is a combination of a nation (ethnic community) and a state (political entity).

6. **The International Business Sector**: There are thousands of international businesses, headquartered in over 100 countries that drive the global economy. These business enterprises bring together capital, technology, production, labor, and transportation to move goods and services all around the world.

7. **International Organizations and Regimes**: There are several hundred global and regional organizations and regimes that exist in multiple countries, such as United Nations, General Agreement on Trade and Tariffs, NAFTA, and the European Community.

8. **Non-Governmental Organizations (NGOs)**: Any non-profit, voluntary citizens’ group which is organized on a local, national, or international level that are not affiliated with government. NGOs perform a variety of service and humanitarian functions.

9. **Values of Global Equity and Social Justice**: The fairness in the distribution of global wealth and the search for a preferred outcome that would produce social justice among the 200 existing nation-states.
1. The year you were born: __________
   Your age today: __________

2. The year you will graduate from high school: __________
   Your age when you graduate from high school: __________

3. After four years of college what year will you graduate? __________
   What will your age be when you graduate? __________

4. If you plan to go to law or medical school, or seek an advanced degree like a Master’s or Doctorate (Ph.D.) add 3-5 years to your graduation year: _______
   How old would you be at graduation? __________

5. Add 30 years to the year that you complete all your post high school education: __________
   After 30 years of work experience, what year will it be? __________
   What will be your age after 30 years of work experience? __________

Related Questions:

What kind of education do you need for your future? What kind of skills do you need to take advantage of job opportunities during your life time? How can you plan for a lifetime of opportunities that will take you to the year 2050 – the first half of the 21st century?

Remember that beyond your formal education, you must be aware, knowledgeable, and involved as a global citizen.
The Global Citizen Quiz

1. The United States represents what percent of the world’s total population?
   - 35%
   - 1%
   - 4%
   - 20%

2. The United States represents what percent of the total landmass of the world?
   - 15%
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   - 50%
   - 25%
   - 15%

4. The total yearly legal immigration (over 1 million people enter the U.S. as permanent immigrants) to the United States is:
   ○ 50% of all the world’s legal immigrants
   ○ 25% of all the world’s legal immigrants
   ○ 10% of all the world’s legal immigrants
   ○ Equal to all the legal immigrants entering the world’s 200 nations

5. Match the approximate minimum hourly wage of a worker making the same shirt in different countries:
   a) $1.00 an hour ___d___ China
   b) $7.25 an hour ___a___ Dominican Republic
   c) $0.50 an hour ___b___ United States
   d) $0.15 an hour ___c___ Philippines

6. Identify two reasons why we should care about what happens beyond the shores and national borders of the United States.
Workshop: The Global Family
Related PowerPoint: Globalization & The Global Citizen

◆ Objective(s):
  • To allow students to discover multiple ways to view the world population using a variety of graphs, charts, and statistics

◆ Outline:
  I. [Day 1] The Global Family (10 minutes)
  II. Skill Set Challenge (30 minutes)
  III. [Day 2] State of the Atlas (40 minutes)

◆ Materials:
  • Video: 100 People (3:40)
    http://100people.org/wp/the-100-people-project-an-introduction/
  • Article: 100 People: A World Portrait
  • Worksheet: Understanding the “Global Family”
  • General World Statistics
  • Worksheet: State of the Atlas packet
    ○ Distribution of Wealth/Inequality
    ○ Quality of Life
    ○ Diversity of Cities/Urbanization
    ○ Life Expectancy/Education
  • Color Statistic Packets from the State of the World Atlas

◆ Key to Script:
  • *Italicized words indicate role/action.*
  • **Bolded sentences are questions to be posed to class.**
  • Normal print indicates words to be spoken aloud.
Workshop Script:

Part I: The Global Family [Day 1]

Site Supervisor:
- How can you represent seven billion people through a village of 100 people?
  - Through numerical representation, we can shrink the world’s population to a village of 100 people. Imagining seven billion people is an impossible task, but imagining 100 people is much easier. Using these 100 people, we can easily represent the ratios that statistics provide us.
- Show “100 People” video.
- Read “100 People: A World Portrait”.
  - What statistics stand out to you? Is anything surprising?

Part II: Skills Set Challenge

Intern A:
- There are many different ways to represent data on graphs. In order to illustrate the different types, let’s gather some information.
- What type of music do you listen to?
- Have the class vote on which genre they prefer. For this exercise, limit music choices to only one genre per student.
- There are three basic types of graphs: the pie, bar, and line.
- Explain all three types of graphs. Ask for volunteers to come and create pie and bar graphs of the data collected.
- Have students complete “Understanding the Global Family” worksheet using the information from the world statistics packet.

Part III: State of the Atlas [Day 2]

Intern B:
- We will be using all the information we learned today to answer the assigned “State of the Atlas” worksheets.
- Divide the class into four groups. Each team is responsible for one topic. Distribute statistic packets from the “State of the World Atlas”.
- Allow students to work in teams.
- After worksheets are completed, have students share their findings with the class. Each student is responsible for filling out the remaining 30 questions.
If we could shrink the Earth’s population to a village of precisely 100 people, with all existing human ratios remaining the same, it would look like this:

50 would be female, 50 would be male.

26 would be children.
There would be 74 adults, 8 of whom would be 65 and older.

There would be: 60 Asians, 15 Africans, 14 people from the Americas, and 11 Europeans.

There would be 33 Christians, 22 Muslims, 14 Hindus, 7 Buddhists, 12 people who practice other religions, and 12 people who would not be aligned with a religion.

12 would speak Chinese, 5 would speak Spanish, 5 would speak English, 3 would speak Arabic, 3 would speak Hindi, 3 would speak Bengali, 3 would speak Portuguese, 2 would speak Russian, 2 would speak Japanese, and 62 would speak other languages.

83 would be able to read and write; 17 would not.

7 would have a college degree.

77 people would have a place to shelter them from the wind and the rain, but 23 would not.

51 would be urban dwellers; 49 would be rural dwellers.

48 would live on less than $2 USD per day.

1 would be dying of starvation.

15 would be undernourished.

21 would be overweight.

87 would have access to safe drinking water.

13 people would have no clean, safe water to drink.

1 would be infected with HIV/AIDS.

78 would have electricity; 22 would not.

65 would have improved sanitation.

16 would have no toilets.

19 would have unimproved toilets.

75 would be cell phone users.

30 would be active internet users.

22 would own or share a computer.

For more information, visit:
http://www.100people.org/statistics_100stats.php?section=statistics
Understanding the “Global Family”

1. What is the total population of the world?  
   7,400,786,496 people

2. How many people are alive between the ages of birth to 9 years?  
   1,269,653,945 people

3. How many people are alive who are 90 years of age or older?  
   18,633,881 people

4. How many people live on the continent of Africa?  
   1,215 million people

5. How many people live on the continent of Asia?  
   4,406 million people

6. Name the 3 nations that have the largest populations:
   1. China
   2. India
   3. United States

7. Name the 5 nations that have the greatest population density:
   1. Monaco
   2. Macao
   3. Singapore
   4. Hong Kong
   5. Gibraltar

Bonus question: How is density determined?  
Density is determined by dividing the population by the area of the location.

8. Will the world population in 2050 be larger or smaller than today’s population? Explain: The population will be larger. While population change in birth/death rates is declining, there are still more people in the world than in the past.

9. What is the change in population in 2040 compared to the present year?  
   About 1.5 billion

10. Name the capital cities for each of the nations listed below:
   a. China  Beijing
   b. India  Delhi
   c. Russia  Moscow
   d. Pakistan  Islamabad
   e. Iran  Tehran
General World Statistics

As of 2017, the world population of all ages stood at 7,400,786,496 people, male population stood at approximately 3,727,929,210 and female population is approximately 3,672,857,286.

In addition to growth rates, another way to look at population growth is to consider annual changes in the total population. The annual increase in world population peaked at about 87 million in the late 1980s. The peak occurred then, even though annual growth rates were past their peak in the late 1960s, because the world population was higher in the 1980s than in the 1960s.

It's getting crowded here.

A hundred years ago, in the beginning of the 20th century the entire world population was less than 2 billion people. Today the current world population has exceeded 7 billion (7,400,786,496).

The world's population is growing by about 200,000 people a day, but death and birth rates have declined over the past several decades (World Bank).

<table>
<thead>
<tr>
<th>World Population by Continents (in millions)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>7,400</td>
</tr>
<tr>
<td>Africa</td>
<td>1,215</td>
</tr>
<tr>
<td>The Americas and the Caribbean</td>
<td>992</td>
</tr>
<tr>
<td>Asia</td>
<td>4,406</td>
</tr>
<tr>
<td>Europe</td>
<td>747</td>
</tr>
<tr>
<td>Oceania</td>
<td>38</td>
</tr>
</tbody>
</table>
# The World Population: Statistics by Age & Sex

<table>
<thead>
<tr>
<th>Age</th>
<th>Both Sexes</th>
<th>Male</th>
<th>Female</th>
<th>Sex Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>7,400,786,496</td>
<td>3,727,929,210</td>
<td>3,672,857,286</td>
<td>101.5</td>
</tr>
<tr>
<td>1</td>
<td>130,060,033</td>
<td>67,148,452</td>
<td>62,911,581</td>
<td>106.7</td>
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<tr>
<td>2</td>
<td>128,920,648</td>
<td>66,603,623</td>
<td>62,317,025</td>
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<td>3</td>
<td>127,885,937</td>
<td>66,098,788</td>
<td>61,787,149</td>
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<tr>
<td>4</td>
<td>127,074,952</td>
<td>65,711,186</td>
<td>61,363,766</td>
<td>107.1</td>
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<tr>
<td>5</td>
<td>126,293,460</td>
<td>65,333,507</td>
<td>60,959,953</td>
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<tr>
<td>6</td>
<td>125,401,047</td>
<td>64,895,184</td>
<td>60,505,863</td>
<td>107.3</td>
</tr>
<tr>
<td>7</td>
<td>124,669,597</td>
<td>64,521,780</td>
<td>60,147,817</td>
<td>107.3</td>
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<tr>
<td>8</td>
<td>124,113,006</td>
<td>64,243,339</td>
<td>59,869,667</td>
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<tr>
<td>9</td>
<td>123,496,594</td>
<td>63,942,197</td>
<td>59,554,397</td>
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<tr>
<td>10</td>
<td>122,349,076</td>
<td>63,357,444</td>
<td>58,991,632</td>
<td>107.4</td>
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<tr>
<td>90</td>
<td>4,446,557</td>
<td>1,450,114</td>
<td>2,996,443</td>
<td>48.4</td>
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<tr>
<td>91</td>
<td>3,571,470</td>
<td>1,112,918</td>
<td>2,458,552</td>
<td>45.3</td>
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<tr>
<td>92</td>
<td>2,842,335</td>
<td>845,052</td>
<td>1,997,283</td>
<td>42.3</td>
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<tr>
<td>93</td>
<td>2,173,918</td>
<td>617,841</td>
<td>1,556,077</td>
<td>39.7</td>
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<tr>
<td>94</td>
<td>1,637,242</td>
<td>444,060</td>
<td>1,193,182</td>
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<tr>
<td>95</td>
<td>1,230,948</td>
<td>319,908</td>
<td>911,040</td>
<td>35.1</td>
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<tr>
<td>96</td>
<td>910,527</td>
<td>225,680</td>
<td>684,847</td>
<td>33.0</td>
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<tr>
<td>97</td>
<td>634,190</td>
<td>149,566</td>
<td>484,624</td>
<td>30.9</td>
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<tr>
<td>98</td>
<td>398,943</td>
<td>89,916</td>
<td>309,027</td>
<td>29.1</td>
</tr>
<tr>
<td>99</td>
<td>266,718</td>
<td>57,286</td>
<td>209,432</td>
<td>27.4</td>
</tr>
</tbody>
</table>

For more information, visit:
https://www.census.gov/population/international/data/idb/worldpop.php
## Countries by Population Density

<table>
<thead>
<tr>
<th>Country</th>
<th>Population/sq. km</th>
<th>Capital City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monaco</td>
<td>25,969.08</td>
<td>Monaco</td>
</tr>
<tr>
<td>Macao SAR, China</td>
<td>20,821.60</td>
<td>Macao</td>
</tr>
<tr>
<td>Singapore</td>
<td>8,155.50</td>
<td>Singapore</td>
</tr>
<tr>
<td>Hong Kong SAR, China</td>
<td>7,014.20</td>
<td>Hong Kong</td>
</tr>
<tr>
<td>Gibraltar</td>
<td>3,457.10</td>
<td>Gibraltar</td>
</tr>
<tr>
<td>Bahrain</td>
<td>1963.90</td>
<td>Manama</td>
</tr>
<tr>
<td>Holy See</td>
<td>1800.00</td>
<td>--</td>
</tr>
<tr>
<td>Maldives</td>
<td>1454.4</td>
<td>Malé</td>
</tr>
<tr>
<td>Malta</td>
<td>1346.4</td>
<td>Valetta</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>1265.0</td>
<td>Dhaka</td>
</tr>
<tr>
<td>Bermuda</td>
<td>1227.0</td>
<td>Hamilton</td>
</tr>
<tr>
<td>Sint Maarten (Dutch part)</td>
<td>1180.0</td>
<td>Philipsburg</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>870.1</td>
<td>--</td>
</tr>
<tr>
<td>State of Palestine</td>
<td>817.4</td>
<td>West Bank and Gaza Strip</td>
</tr>
<tr>
<td>Mayotte</td>
<td>674.8</td>
<td>Mamoudzou</td>
</tr>
<tr>
<td>Taiwan, Province of China</td>
<td>667.2</td>
<td>Zhongxing New Village</td>
</tr>
<tr>
<td>Barbados</td>
<td>664.5</td>
<td>Bridgetown</td>
</tr>
<tr>
<td>Mauritius</td>
<td>623.2</td>
<td>Port Louis</td>
</tr>
<tr>
<td>Lebanon</td>
<td>594.6</td>
<td>Beirut</td>
</tr>
<tr>
<td>Aruba</td>
<td>584.8</td>
<td>Oranjestad</td>
</tr>
<tr>
<td>Nauru</td>
<td>568.0</td>
<td>Yaren District</td>
</tr>
<tr>
<td>San Marino</td>
<td>556.7</td>
<td>San Marino (city)</td>
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<tr>
<td>Republic of Korea</td>
<td>524.3</td>
<td>Seoul</td>
</tr>
<tr>
<td>Netherlands</td>
<td>505.2</td>
<td>Amsterdam</td>
</tr>
<tr>
<td>Rwanda</td>
<td>494.9</td>
<td>Kigali</td>
</tr>
</tbody>
</table>

For more information, visit: [https://esa.un.org/unpd/wpp/](https://esa.un.org/unpd/wpp/)
# Top 20 Most Populous Nations

<table>
<thead>
<tr>
<th>Nation</th>
<th>Population (in millions)</th>
<th>Capital City</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>1,388.2</td>
<td>Beijing</td>
</tr>
<tr>
<td>India</td>
<td>1,342.8</td>
<td>Delhi</td>
</tr>
<tr>
<td>United States</td>
<td>326.4</td>
<td>Washington D.C.</td>
</tr>
<tr>
<td>Indonesia</td>
<td>263.5</td>
<td>Jakarta</td>
</tr>
<tr>
<td>Brazil</td>
<td>211.2</td>
<td>Brasilia</td>
</tr>
<tr>
<td>Pakistan</td>
<td>196.7</td>
<td>Islamabad</td>
</tr>
<tr>
<td>Nigeria</td>
<td>191.8</td>
<td>Abuja</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>164.8</td>
<td>Dhaka</td>
</tr>
<tr>
<td>Russia</td>
<td>143.3</td>
<td>Moscow</td>
</tr>
<tr>
<td>Mexico</td>
<td>130.2</td>
<td>Mexico City</td>
</tr>
<tr>
<td>Japan</td>
<td>126.0</td>
<td>Tokyo</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>104.3</td>
<td>Addis Adaba</td>
</tr>
<tr>
<td>Philippines</td>
<td>103.7</td>
<td>Manila</td>
</tr>
<tr>
<td>Vietnam</td>
<td>95.4</td>
<td>Hanoi</td>
</tr>
<tr>
<td>Egypt</td>
<td>95.2</td>
<td>Cairo</td>
</tr>
<tr>
<td>Democratic Republic of the Congo</td>
<td>82.2</td>
<td>Kinshasa</td>
</tr>
<tr>
<td>Iran</td>
<td>80.9</td>
<td>Tehran</td>
</tr>
<tr>
<td>Germany</td>
<td>80.6</td>
<td>Berlin</td>
</tr>
<tr>
<td>Turkey</td>
<td>80.4</td>
<td>Ankara</td>
</tr>
<tr>
<td>Thailand</td>
<td>68.2</td>
<td>Bangkok</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>65.5</td>
<td>London</td>
</tr>
<tr>
<td>France</td>
<td>64.9</td>
<td>Paris</td>
</tr>
<tr>
<td>Italy</td>
<td>59.7</td>
<td>Rome</td>
</tr>
</tbody>
</table>

For more information, visit: http://www.worldometers.info/world-population/population-by-country/
Team 1: Inequality

Refer to the *State of the World Atlas*, pages 40-41 to answer the following questions:

1. In 2011, how many billionaires were there in the U.S.?
   - 412 billionaires

2. Worldwide, how many people live on less than $2 a day?
   - 2.6 billion

3. Which continent demonstrates the greatest inequality of wealth?
   - South America

4. What percentage of global economic output is owned by less than one tenth of a percent of the world’s population?
   - 16%

5. What percentage of the Russian population lives on less than $2 a day?
   - 25% or fewer

6. What does the Gini Index measure?
   - The Gini Index measures the degree to which the distribution of wealth within a country is different from a perfectly equal distribution.

7. What country had the most billionaires in 2008? In 2011?
   - The United States, for both 2008 and 2011

8. What country had the fewest number of billionaires in 2008? In 2011?
   - Taiwan in 2008, and Spain in 2011

9. From 2008 to 2011, which countries had an increase in the number of billionaires? Which countries experienced a decrease?
   - Increase: Taiwan, Japan, Brazil, Turkey, India, Russia, China, and Hong Kong
   - Decrease: United States, Germany, United Kingdom, Canada, and Spain

10. Using information from the question above, do you see a trend? If so, explain.
    - The countries in which the number of billionaires increased are developing countries, and the numbers of billionaires in developed countries are decreasing. It can be explained by the increasing wealth of developing countries due to outsourcing, or the worsening distribution of wealth in developing countries.
Team 2: Quality of Life

Refer to the *State of the World Atlas*, pages 42-43 to answer the following questions:

1. Name 6 countries in which the people enjoy a very high quality of life.
   *Answers may include: Australia, New Zealand, United States, Canada, Denmark, Norway, Ireland, UK, France, Italy, Greece, Spain, Germany, Japan, South Korea*

2. What does the U.N.’s Human Development Index (HDI) measure?
   *The HDI measures the life expectancy and educational level of populations within a country, and its national income per capita.*

3. What is one reason the quality of life may be low for a country?
   *Answers may include: poor political leadership, lack of investment in education and health care infrastructure*

4. Name 6 countries with the lowest quality of life.
   *Answers may include: Haiti, Guinea, Niger, Chad, Nigeria, Kenya, Pakistan, Yemen, Nepal, Bangladesh, Papua New Guinea, and East Timor.*

5. To what can a country attribute its growth?
   *It can attribute its growth to the booming economy.*

6. Which are the happiest continents?
   *North America and Australia*

7. What is the relationship between countries with the highest quality of life and carbon emissions?
   *Countries with the highest quality of life are also among the top ten emitters of carbon.*

8. Name 5 countries that have the highest scores in their “daily experience of life”.
   *Answers may include: Canada, Mexico, Brazil, Argentina, China, Australia, Norway, Sweden, Iceland, Finland, Paraguay, Uruguay, Columbia, Venezuela, Ecuador, Jamaica, Niger, Mali, Namibia, Zambia, Malawi, Tanzania, Kenya, Indonesia, and Ireland.*

9. Name a country with a high “daily experience of life” score but are below 25% in “the happiness league”.
   *Answers may include: China, Uzbekistan, Mali, Niger, Namibia, Zambia, Tanzania, Kenya, Niger, Indonesia, Malaysia, Thailand, and Cambodia.*
Team 3: Urbanization

Refer to the State of the World Atlas, pages 32-33 to answer the following questions:

1. Why is new urbanization largely concentrated in developing countries?
   Big cities are magnets for people seeking livelihoods when they can no longer sustain themselves in the countryside.

2. What percentage of the world’s population lives in cities?
   51%

3. Name five cities with over ten million inhabitants.
   Answers may include: New York City, Los Angeles, Mexico City, Rio de Janeiro, Buenos Aires, London, Paris, Cairo, Moscow, Istanbul, Tehran, Karachi, Delhi, Mumbai, Kolkata, Beijing, Shanghai, Tokyo, Osaka-Kobe, Manila, Jakarta, São Paolo, Lagos

4. Name three countries in which 90% or more of the population live in cities.
   Answers may include: Venezuela, Puerto Rico, Argentina, Uruguay, United Kingdom, Belgium, Kuwait, Israel, Qatar, Singapore, Hong Kong

5. What is one reason most major cities in Europe are static or declining in size?
   Improved transport and communication are reducing the economic benefit of concentrating large numbers of people in a few places.

6. How many megacities were there in 2010?
   21

7. By how much did the urban dwelling population increase between 1990 and 2010?
   By 1.2 billion more people

8. In 2010, how many of largest cities were in the United States? Identify.
   One: New York City

9. From the data supplied, which cities were listed as the top 10 in both 1950 and 2010?
   New York City, Kolkata, Shanghai, and Tokyo.

10. Approximately how many people live in megacities?
    321,000,000
Team 4: Life Expectancy/Education

Refer to the *State of the World Atlas*, pages 24-25 and 30-31 to answer the following questions:

1. What is the world average life expectancy?
   68 years

2. What are two main factors influencing average life expectancy?
   Levels of health and public sanitation.

3. What is the relationship between wealth and life expectancy?
   The more wealth one has, the longer one lives.

4. Which continent has the lowest average life expectancy?
   Africa

5. What is the mathematical difference between the highest life expectancy of a baby born in Japan and a baby born in Afghanistan in 2009?
   83 - 49 = 34 years

6. What is the percent of adult illiteracy? What proportion of them are women?
   Adult Illiteracy: 20%
   Women: 2/3

7. True or False: In Sub-Saharan Africa, enrollment in education continues to increase from primary, secondary, and tertiary.
   False

8. Why is literacy so important?
   Literacy is a functional need for modern societies, a basic tool for individual advancement, a personal source of knowledge, and access to the world and satisfaction.

9. What countries contain 90% or more young people enrolled in tertiary education?
   Greece, Cuba, Finland and South Korea

10. What continents have the highest difference in youth literacy from 1990 to 2009?
    Southern Asia
INTRODUCTION TO GLOBALIZATION

Unit IV: Climate Change
**OUTLINE**

- What is Climate?
- What is Climate Change?
  - Natural, human-induced
  - Physical explanation (GH effect)
- Causes of Anthropogenic Climate Change
  - Sources of Greenhouse Gases
- Effects of Climate Change (Environmental, Societal, etc)
- International Environmental Policy
- US Environmental Policy
- What can you do?

**KEY WORDS**

- Climate
- Climate Change
- Anthropogenic
- Greenhouse Gases
- Greenhouse Effect
- Emissions
- Solar Radiation
- Feedback loop

**WHAT IS CLIMATE CHANGE?**

- Climate versus Weather
  - Short term patterns of atmospheric conditions
  - Average weather over longer periods of time periods
- Climate change
  - Implies a shift in the patterns of weather
  - Observed historically in cycles of ice ages and warm periods

**THE GREENHOUSE EFFECT**

**SOURCES OF GREENHOUSE GASES**

- Industrial Revolution (Started in 1850s)
- Replaced manual labor with machines
- Used fossil fuels for production of tools, textiles
- Increased concentrations of fossil fuels in the atmosphere
**Sources of Greenhouse Gases**

- Electricity production
- Burning fossil fuels (coal and natural gas)
- Transportation
- Burning fossil fuels for cars, ships, trains, planes
- Industry
- Fossil fuels for energy and production of goods
- Commercial and Residential
  - Heating and cooling, production of waste
- Agriculture
  - Cows, agriculture soils, rice

**Effects of Climate Change**

- Temperature
  - Heat waves
- Water distribution
  - Water scarcity (drought)
  - Extreme precipitation (flooding)
  - Sea level rise (melting ice caps)
- Ecological ramifications
  - Forest ranges
  - Ocean acidification

**Shift in Temperature Distribution**

**Changes in Precipitation Events**
**MELTING ICE CAPS**

**ECOLOGICAL PROBLEMS**

**EFFECTS OF CLIMATE CHANGE ON SOCIETY**
- Physical events
  - Heat waves
  - Magnified air pollution
  - Physical weather disasters
- Resource conflicts
- Water availability
- Displacement
- Public health

**PHYSICAL EFFECTS**

**WATER SCARCITY**

**DISPLACEMENT**
United Nations Development Program

2030 Agenda for Sustainable Development

Goal 13: Climate Action

“Strengthen resilience to climate-related hazards...”

“Integrate measures into national policies...”

United Nations Framework Convention on Climate Change

EPA

Carbon pollution standards

Clean energy standards

Renewable energy industry

Preparing for climate change impacts

Land loss, environmental economic losses
EMISSIONS BY COUNTRY, PER CAPITA

WHAT CAN YOU DO?

- Awareness
  - Education about daily activities that contribute to climate change

- Action
  - At home, at school, in transportation

- Advocacy
  - Spread knowledge on the topic!

  - School infrastructure

REFERENCES

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- http://forces.si.edu/atmosphere/02_04_07.html
Key Terms

1. **Climate**: Patterns of weather in a particular region over a long period of time.

2. **Weather**: The temperature, wind, humidity, and other outside conditions at a particular time and place.

3. **Climate Change**: A long-term change in the global climate, generally defined as an increase in the average atmospheric temperature.

4. **Greenhouse Gases**: A number of gases (e.g. carbon dioxide, methane, fluorocarbons, etc.) which absorb infrared radiation, trap heat in the atmosphere, and radiate heat in all directions.

5. **Greenhouse Effect**: Warming of the atmosphere and Earth due to trapped solar radiation caused by an increase in greenhouse gases.

6. **Solar Radiation**: The many forms of light and energy that are emitted by the sun (e.g. ultraviolet light, visible light, and infrared radiation).

7. **Industrial Revolution**: The period from about 1760-1830 in which production of goods and services transitioned from primarily hand-made products to machines powered by forms of energy such as steam and water.

8. **Fossil Fuels**: A form of energy which comes from organic material formed in the earth from dead plants or animals (e.g. oil, coal, and natural gas).

9. **Ocean Acidification**: Reduction in the pH of the ocean over an extended period of time which has caused the ocean to become more acidic.

10. **Ecological**: Relating to the relation of living organisms to one another and to their environment.

11. **Environmental Protection Agency (EPA)**: An agency of the U.S. government created to protect human health and the environment by writing/enforcing environmental regulations.

12. **Emissions**: Chemicals in gases emitted by cars and factories that are harmful to air quality.

13. **Anthropogenic**: Resulting from the influence of human beings.

14. **Feedback Loop**: A circuit in which output from a system is returned to the input in order to continue the cycle.
Workshop:
Climate Change Around the Globe
Related PowerPoint: Climate Change

➡️ Objective(s):
- To assess the causes and effects of climate change
- To examine the negative consequences of climate change on humans and wildlife habitats
- To explore ways in which we can help prevent climate change and reduce our carbon footprint

➡️ Outline:
I. [Day 1] Climate Change: Before and After (15 minutes)
II. Melting Glaciers Station (15 minutes)
III. Deforestation Station (15 minutes)
IV. [Day 2] Desertification Station (15 minutes)
V. Ocean Acidification Station (15 minutes)
VI. Combatting Climate Change (15 minutes)

➡️ Materials:
- Before and After Pictures
- Climate Change: Before and After PowerPoint
- Video: Photo Evidence: Glacier National Park is Melting Away: https://www.youtube.com/watch?v=ur4I8tYnxP4 (3:13)
- Melting Glaciers Discussion Questions
- Melting Glaciers Crossword Puzzle
- Picture Story: Deforestation in Brazil: http://apps.npr.org/lookatthis/posts/brazil/
- Deforestation Discussion Questions
- Desertification Key Terms
- Kahoot! Quiz: Desertification
● Video: High Hopes: The Future of Dungeness Crab: https://www.youtube.com/watch?v=pIOf_fg_i5I (5:36)
● Ocean Acidification Discussion Questions
● Video: Climate Change: What Can We Do? https://www.youtube.com/watch?v=1gFRHVYjsP0 (2:10)
● Today’s Meet Discussion Room: https://todaysmeet.com/GlobalConnectUCI

☞ Key to Script:

● Italicized words indicate role/action.
● Bolded sentences are questions to be posed to class.
● Normal print indicates words to be spoken aloud.
Workshop Script:

Part I: Climate Change: Before and After [Day 1]

Site Supervisor:
- Today we are going to discuss climate change and how it affects different regions. In front of you there are 8 pictures. Four of them show regions before they were affected, and four of them show the same regions after they were affected. Let’s take a minute to match the before and after pictures.
  - Put on the “Climate Change: Before and After PowerPoint” presentation.

Intern A:
- Let’s see how you did.
- Ask students to show the before and after pictures, and have them explain what is happening in each set of pictures (i.e. desertification, deforestation, etc.)
- What are some of the negative consequences of these environmental changes?
- Use the “Climate Change: Before and After” PowerPoint to display before and after photos. Define each term and give statistics about each.

Intern B:
- Now that we know these terms, let’s take an in-depth look into each environmental issue.
- Break students into 4 groups and explain stations to students. Students will remain at each station for 15 minutes while they review each environmental issue and engage in discussions, quizzes, and other activities to help further their knowledge about the topic. Remind them to keep their work from each station. Day 1 will involve 2 stations and Day 2 will involve the final 2 stations. One intern will be posted at each station and will lead them through each of the tasks.

Part II: Melting Glaciers Station

Intern C:
- This station is about the melting glaciers. We know that even the smallest increase in temperatures can lead to melting glaciers and rising sea levels.
- Let’s first watch a video about the consequences of the melting glaciers in the Arctic.
- Play video “Photo Evidence: Glacier National Park is Melting Away” (3:13)
- After the video, use the “Melting Glaciers Discussion Questions” to lead a discussion about what the students learned from the video.
- Great! Now that we’re all experts on the melting glaciers, let’s use what we know to fill in a crossword puzzle.
- Pass out the “Melting Glaciers Crossword Puzzle”. When they are finished, review and discuss each of the answers.
Part III: Deforestation Station

Intern D:
- This station is about deforestation. Deforestation affects thousands of animals as well as people. Let’s look at a story from Brazil where deforestation helped a troubled economy, but hurt many people and habitats in the process.
- Click through the “Picture Story” and create a narrative about deforestation in Brazil. It may help to read the story out loud, or to ask one of the students to do so.
- Let’s talk about what we saw in this story.
- Use the “Deforestation Discussion Questions” sheet to lead a discussion about deforestation in Brazil.

Part IV: Desertification Station [Day 2]

Intern A:
- This station is about desertification. Let’s popcorn read a short article about desertification in Senegal.
- Distribute “The People Whose Land is Turning to Dust”. Have the students popcorn read the article.
- After you are finished reading the article, review some of the key terms if the kids have questions. Use the “Desertification Key Terms” sheet for reference.
- So what is desertification and how is it affecting the people in Senegal?
- Discuss the article with the students and clarify any questions they might have.
- Now we’re going to take a quick quiz to see what we learned about desertification.
- Use the “Kahoot! Quiz”. Instruct the students to take out their phones and go to Kahoot.it and put in the game pin. The pin will change for every quiz.

Part V: Ocean Acidification Station

Intern B:
- This station is about ocean acidification. Before we discuss ocean acidification, let’s watch a short video about how it affects both humans and ocean life.
- Play “High Hopes: The Future of Dungeness Crab” video.
- Now that we know a little more about ocean acidification, let’s talk about what exactly it is and how it affects us.
- Use the “Ocean Acidification Discussion Questions” to lead a discussion about ocean acidification. Note: not all of the answers to the discussion questions can be found in the video; some of them will have to be brainstormed by the kids.
Part VI: Combatting Climate Change

Intern C:
- Does anyone have any questions about what we’ve learned the last few days?
- Clarify any remaining questions that the students may have about the melting glaciers, deforestation, desertification, and ocean acidification.
- Now that we know some of the causes of these problems, what do you think we can do to help tackle climate change and reduce your carbon footprint?
- Brainstorm ways to help slow down the rate of climate change.
- Those are all really great ideas. Let’s watch a video that may give us some other solutions that we didn’t think of here.
- Play video: “Climate Change: What Can We Do?”

Intern D:
- As we’ve seen, there are many ways in which we can prevent the damaging effects of climate change. We know that climate change doesn’t just affect one region, it affects the entire world. Because of this, it isn’t just one country’s job to lower emissions or stop logging, it’s the responsibility of each and every one of us.
- Have students visit online discussion room at https://todaysmeet.com/GlobalConnectUCI
- Now that we’re all online, write a small message about what actions you will take in your daily life to reduce your carbon footprint.
1. Atmospheric contributions to climate change:
   - Variations in the sun’s energy reaching Earth
   - Changes in the reflectivity of Earth's atmosphere and surface
   - Changes in the greenhouse effect, which affects the amount of heat retained by Earth’s atmosphere

2. Human activities that contribute to climate change:
   - Deforestation which releases CO2 and reduces its uptake by plants
   - Desertification caused by agricultural activities in vulnerable ecosystems, natural gas distribution, and landfills
   - Changes in cropland, pastures and forests (arable lands)

Glaciers: a slowly moving mass of ice originating from an accumulation of snow

MELTING GLACIERS

- Sea levels worldwide have been rising at a rate of 3.5 millimeters per year since the early 1990s
  - The trend is linked to global warming
  - It puts thousands of coastal cities and whole islands at risk of being claimed by the ocean
- By 2100, about half of all the world's glaciers will be gone unless prevention strategies are implemented
BOM FUTURO NATIONAL FOREST, BRAZIL

WHAT IS DEFORESTATION?

Deforestation: the permanent destruction of forest in order to make the land available for other uses.

DEFORESTATION

- Some 46-58 thousand square miles of forest are lost each year
  - That's equivalent to 48 football fields every minute!
- Between 1990 and 2015, the world lost 129 million hectares of forest
  - An area the size of South Africa
- Deforestation leads to loss of habitat for millions of species, climate change, soil erosion, desertification, fewer crops, flooding, and increased greenhouse gases in the atmosphere
  - 70% of the Earth’s land animals and plants live in forests

ZIMBABWE

WHAT IS DESERTIFICATION?

Desertification: the process by which fertile land becomes desert, typically as a result of drought, deforestation, or inappropriate agriculture

DEsertification

- Land degradation affects 1.5 billion people globally
- Due to drought and desertification, each year 12 million hectares are lost where 20 million tons of grain could have been grown
- Some 50 million people may be displaced within the next 10 years as a result of desertification
**FLORIDA KEYS, FLORIDA**

1980  

2010

**WHAT IS OCEAN ACIDIFICATION?**

**Ocean Acidification**: the ongoing decrease in the pH of the Earth’s oceans, caused by the uptake of carbon dioxide (CO₂) from the atmosphere

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**OCEAN ACIDIFICATION**

- The oceans are currently absorbing about **one quarter** of the CO₂ emitted to the atmosphere annually and are becoming more acidic
  - This leads to concerns about impacts on marine ecosystems
- Over the last 250 years the oceans have absorbed **560 billion tons** of CO₂
  - This leads to increasing acidity of surface waters by 30%
  - The current observed rate of change is roughly **50 times faster** than known historical change.

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**LET’S BREAK INTO GROUPS AND LOOK AT THESE CHANGES CLOSE UP...**
Melting Glaciers Discussion Questions

1. What is happening to the glaciers?

   All the glaciers are shrinking.

2. How are glacier changes measured?

   Glaciers are measured using repeat photography where a photographer took a picture in the past and was re-photographed in present time in the same location. Precision global positioning systems measure changes in the ice through time.

3. What is happening to the temperature at Glacier National Park?

   It is warming at two to three times the rate of the global average rise in air temperatures.

4. What other effects does higher temperature have on the environment?

   The increased air temperatures are decreasing snowpack in the glaciers and increasing disturbance events such as wildfires.

5. How does this change in the temperature affect the animals in the region?

   The snowpack affects animals’ food sources. The food changes can influence their ability to thrive.

For more information, visit:
https://www.youtube.com/watch?v=ur4I8tYnxP4
Melting Glaciers Crossword Puzzle

Directions: Complete the crossword puzzle by filling in the blanks to the sentences below.

Across
5. Glacier National Park is an excellent natural laboratory to examine the effects of _______ _______.

Down
1. There are estimated to be about 150 _______ here, however today we only have 25.
2. These increased air temperatures are decreasing the snowpack in the glaciers in the high country and increasing disturbance events like _________.
3. This area is warming at two to three times the rate of the global average rise and air _________.
4. These aquatic insects might be the first species to go _______ due to the effects of global climate change.
Deforestation Discussion Questions

1. Where are the majority of the Earth’s rainforests located?

   The majority of the rainforest is located in the Amazon, and a majority of the Amazon is in Brazil.

2. How much of Brazil’s rainforest is destroyed?

   A fifth of Brazil’s rain forest is gone completely.

3. How does deforestation contribute to Brazil’s drought?

   Less trees equals less evaporation which equals less rain.

4. How does deforestation help Brazil’s economy?

   Brazil’s economy was built on the destruction of the rainforest. More than two-thirds of Brazil’s deforested land is used for cattle ranching. Lumber is also being used as tropical hardwood.

5. What are the people in Brazil doing to help the forest?

   Vigilante environmentalists are trying to guard the forest.

6. What is Brazil’s government doing to stop deforestation?

   They are observing via satellite for illegal forest degradation, fires, and excessive logging. They give penalties.

7. What is the world doing?

   Nations from across the world met at the U.N. Climate Change Conference in 2015 and negotiated the Paris Agreement, a global agreement on the reduction of climate change.

For more information, visit:
http://apps.npr.org/lookatthis/posts/brazil/
Desertification: The people whose land is turning to dust

The UN predicts over 50 million people will be forced to leave their homes by 2020 because their land has turned to desert. This is already happening in Senegal, writes Laeila Adjovi.

Published: November 12, 2015

Cattle herder Khalidou Badara took me up a hill in Louga, northern Senegal, to describe to me how his area has changed.

"When I was a child, I did not even dare to walk up to here because the vegetation was so dense.

"But these past few years, the wind and sand have been taking over.

"There are almost no more trees, and the grass does not grow anymore, and so each year, we have to go further and further away to find grazing for our cattle."

His life has become more complicated because of desertification.

He's not the only one. The UN says land degradation affects 1.5 billion people globally.

Desertification is the persistent degradation of dry land ecosystems by human activities and by climate change.

It translates into scarcer rains and decreasing soil quality, which leads to less grazing for livestock and lower crop yield.

Lost land

Each year, UN figures say, 12 million hectares of land are lost. That's land where 20 million tonnes of grain could have been grown.

People living off the land feel they have no choice but to migrate.

In another part of Louga - the village of Pendayayake - I met Cheikhou Lo.

He had sown hectares of peanuts and beans in the hope of selling them.

But lack of rain and soil erosion mean the peanuts and beans have not ripened.

His failed harvest is only good to feed animals.

"Years ago, there was more rain and we were able to produce more," he told me.

"We could live on the crops until the next rainy season. Now, with that drought, we can't work.

"If we had boreholes and sufficient means, we could grow vegetables, plant trees, and we could stay here".

"But if not, many have to leave and go elsewhere to be able to survive."

Forced to leave

His 27-year-old nephew Amadou Souare added that in the village there is only one borehole and not enough means to dig another one.

"Here we live off the land," he said.

"And if that does not work, we are in so much trouble."

Many young people from the village have left. Cheikou Lo's own children, now adults, went to find jobs in Dakar.

Some have travelled to Gabon, others are planning to go to Europe or Brazil.
"We would rather they stayed here to develop the village but with no jobs and no means, how can we ask them to stay?" he asked.

**A wall of trees**

One project is trying to slow the effects of desertification.

The Great Green Wall initiative aims to create a barrier of vegetation in vulnerable areas across the continent, from Senegal to Djibouti.

The organisation says hundreds of thousands of trees have already been planted in the region.

In Senegal, the wall is intended to make a 545km (338 mile) long curtain of vegetation.

The organisation also makes fodder banks for herders, vegetable gardens to prevent malnutrition and teaches children how to protect the environment.

The idea is to meet minimal living conditions so people can survive.

After all, El Hadj Goudiaby from the national agency of the Great Green Wall explained, the trees will only have an impact in 10-15 years' time.

"Can people here really wait that long? No."

**Pushed by the desert**

Month by month, people continue to leave. A few hours away, Dakar, the capital city, offers hope of a better life.

Malik Souare grew up in Pendayayake.

Unable to live off the land, he decided to move to Dakar, and found a job as a driver.

But now, he dreams of going even further away.

"You know, everyone wants to get ahead. So I would prefer to leave. Go to England maybe. That is the place where my hopes are now," he said.

For more and more rural communities at the mercy of the environment, migration appears to be the only choice.

According to the UN, over 50 million people could move from the desertified areas of sub-Saharan Africa towards North Africa and Europe by 2020.

Pushed by the desert and pulled by opportunity, more and more people like Mr Souare will picture their future abroad.

*For more information, visit:*

Key Terms

1. **UN**: The United Nations is an intergovernmental organization to promote international peace, security, and development.

2. **Vegetation**: Plants that cover a particular area.

3. **Desertification**: Persistent degradation of dry land ecosystems by human activities and by climate change.

4. **Land Degradation**: Deterioration in the quality of land caused usually by excessive or inappropriate exploitation.

5. **Ecosystem**: All the living things, from plants and animals to microscopic organisms, that share an environment.

6. **Hectare**: A unit of area in the metric system that is equal to 10,000 square meters or 2.47 acres.

7. **Soil Erosion**: Wearing away of topsoil, the top layer of soil that is the most fertile.

8. **Borehole**: A deep, narrow hole made in the ground, especially to locate water or oil.
Desertification Kahoot! Quiz

1. What is desertification?
   a. A city in Arizona
   b. Permanent destruction of forests
   c. The process by which fertile land becomes desert
   d. New legislation politicians are proposing

2. Where does desertification occur?
   a. Tundra Ecosystems
   b. Freshwater Écosystèmes
   c. Marine Ecosystems
   d. Dry Land Ecosystems

3. What does desertification lead to?
   a. Less rain
   b. Decreasing soil quality
   c. Lower crop yield
   d. All of the above

4. How many people are being affected globally by land degradation?
   a. 2 billion
   b. 1.5 billion
   c. 3 billion
   d. 1 million

5. How many hectares of land are being lost per year?
   a. 10 million hectares
   b. 7 million hectares
   c. 12 million hectares
   d. 1 billion hectares

6. What region is desertification most prevalent?
   a. Sub-Saharan Africa
   b. East Asia
   c. Europe
   d. Latina America
Ocean Acidification Discussion Questions

1. What is ocean acidification?
   Ocean acidification refers to a reduction in the pH of the ocean over an extended period of time.

2. What causes ocean acidification?
   The ocean is acidifying as it absorbs carbon dioxide from the atmosphere.

3. Why is crab so important to both the ecosystem and fisheries?
   Dungeness crab is one of the most valuable commercial fisheries on the West Coast of the United States. Crab is ecologically important because the larvae are prey for many fish species.

4. What happens to crab in conditions with high CO2?
   They have lower survival in conditions with high CO2.

5. How does ocean acidification affect the entire ocean ecosystem?
   The increase in acidity damages the basic building blocks of life needed by oysters, clams, corals, and other animals to make their shells and skeletons.

6. How does it affect the people?
   The fishing industry is losing millions of dollars each year due to ocean acidification. It threatens the food security of billions of people worldwide who depend on marine fisheries as the primary source of protein.

For more information, visit:
http://www.oceanconservancy.org/our-work/ocean-acidification/
We hope you enjoyed this preview of *Introduction to Globalization*.

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