Ch 7 People and Nature
People and Nature

• Essential Question:

• How do people adapt to or, modify their environment?
Geography 8 The student understands how people, places, and environments are connected and interdependent.

- **Geography 8(A)** Compare ways that humans depend on, adapt to, and modify the physical environment, including the influences of culture and technology.

- **Geography 8(B)** Describe the interaction between humans and the physical environment and analyze the consequences of extreme weather and other natural disasters such as El Niño, floods, tsunamis, and volcanoes.

- **Geography 8(C)** Evaluate the economic and political relationships between settlements and the environment, including sustainable development and renewable/non-renewable resources.

Social Studies Skills 23(B) Use case studies and GIS to identify contemporary challenges and to answer real-world questions.
 Humans depend on, adapt to, and modify their physical environment

Humans must respond to conditions of extreme weather or natural disasters

Examples of such weather or disasters are:

- Floods, volcanoes, tsunamis, earthquakes
- GIS (Graphic Information Systems) Can help humans respond to these disasters.

People use renewable resources, to conserve non-renewable resources

Humans must pursue sustainable development to protect the environment
Human Environment Interaction

- HEI – what humans do to the earth and what the earth does to humans
- Humans have the ability to drastically and rapidly modify or change the environment in which they live
- Animals do not have this ability, or are very limited
- **How humans are affected by the Environment**
  - Humans, like animals must adapt to the climate, physical landforms, vegetation and the natural resources available where they live
  - Humans can adapt to harsh climate conditions, but they cannot change the climate
  - People can choose to live in extreme climates or, seek more favorable places in which to settle
  - The environment affects their choices of **foods**, shelter, clothing, and general way of life
Human adapting to their environment
APPLYING WHAT YOU HAVE LEARNED

★ What are some of the ways in which the physical environment affects people’s lifestyles?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

★ Give one example of how your activities are influenced by your environment.

________________________________________________________________________

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________________________________________________________________________
Complete the chart below. Indicate at least one of the positive and one of the negative effects of each of these human modifications to the environment:

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How Humans are affected by the Environment

- **Bodies of water:**
  - Freshwater is vital to all civilizations. All major civilizations settled near river valleys. EX: Egypt and Nile River

- **Landforms:**
  - People usually settle near coastlines, plains and flat fertile valleys
    - Easier to farm and build homes
    - People avoid living in swamps, deserts or mountain areas
    - Some groups do live in harsh environments

- **Climate:**
  - Affects the way people dress, the length of the farming season, the crops which may be grown and, the types of animals which may be raised there.

- **Plant and animal life:** the type of vegetation and animals which live in area greatly influence human lifestyles and economic activities
  - People make use of local plants and animals as a source of food, clothing and building materials
Early Humans
How Humans are affected by the Environment

- **How plant and animal life affect humans**
  - Grassland peoples – groups who live in grassland areas don’t get enough rain to raise crops so they domesticate animals for food and shelter.

- **Seismic activities:**
  - Refers to the probability and frequency of earthquakes and volcanic activity of an area
  - People adapt how they build homes and buildings according to the amount of seismic activity of the region in which they live. Lightweight and flexible.
People who live in extreme conditions: Berbers
People who live in extreme conditions: Incas
Grassland Peoples
Japan
How Do People Modify the Environment?

People also affect their environment
Levels of technology and culture influence how much people change the environment

*Agriculture* transforms the landscape by clearing existing vegetation

1. People of the Middle East domesticated plants by watering plants and selecting seeds to be replanted.
2. Farming change the environment to increase food production.
   a. *Clearing* original vegetation and tilling the soil changed the landscape
3. Humans learned to irrigate the land to increase crop yields and productivity
4. Through the domestication of plants and animals, humans have learned how to convert forests, deserts, swamps and grasslands into productive farmland
How do Humans Modify Their Environments?

- **Urban Growth**
  - People modify nature by building towns and cities
  - The earliest civilizations were in the Middle East
    - Developed along fertile river valleys and freshwater - Jericho and Sumer.
    - Middle Ages – Smaller urban centers
    - 1700’s – Improved farming, increased overseas trade and the Industrial Revolution led to rapid growth.
  - Urbanization – has concentrated thousands and sometimes millions into small treeless areas.
  - Cities replace open fields and forests with paved concrete roads, buildings, parking lots and homes
  - Once fields are covered in pavement or built, they are seldom returned back to nature
  - Public parks serve to preserve some open spaces within urban centers
Early River Valleys

The Four Old-World River Valley Cultures

- Egypt: The Nile
- Mesopotamia: Tigris & Euphrates
- India: Indus & Ganges
- Shang China: Yellow R. (Yangzi)
How do humans modify their environment?

- **Building Dams or Water Reservoirs**
  
  Building dams is another way humans attempt to modify and have more control of the environment.

- **Why do people build dams?**
  
  - To drain swamps
  - To prevent flooding
  - To store freshwater for drinking and irrigation
  - To generate electricity/hydro electric power
How do humans modify their environment?

- **Energy**
  - Humans change the environment to provide energy for their needs.
  - Early humans discovered the power of fire that allowed them to stay warm and cook.
  - Humans could now go to new places and colder climates
  - Later humans used coal, whale oil, and petroleum for light heat and power.
  - Today societies depend on burning fossil fuels like coal and oil
  - Demand for fossil fuels causes humans to dig mines and drill holes.
    - **Problems with fossil fuels** – massive oil leaks (2010 Gulf of Mexico) and air pollution
How the Earth affects humans

• **Extreme weather and natural disasters**
  • Tornadoes, hurricanes, fires, earthquakes, tsunamis, and volcanoes are not typical events.
  • Can kill thousands and destroy buildings, bridges, and roads
  • Major disasters
    • Vesuvius Volcano – 79AD buried thousands of Romans in ash, changed the coarse of a river and raised the sea.
    • Krakatoa Volcano – 1873 Pacific Ocean island blew the island apart in a explosion that was a 1000 times more powerful than a atomic bomb
    • San Francisco Earthquake – 1906 killed 3000 and destroyed most of the city
    • Indonesian Tsunami – 2004 killed 200,000+ waves as high as 100 feet moving over 100 mph
    • Icelandic Volcano - 2010
  • Earthquakes, volcanoes, and tsunamis are often caused by plate tectonics.
  • Most are in the Pacific Ring of Fire
  • Since these disasters don’t happen all the time people return and rebuild.
Human Responses

- There is no way to prevent extreme weather or natural disasters.
- Scientist try to predict them and prepare for them.
- 1989 San Francisco earthquake did far less damage because building where designed to move with the earthquake.
- Nations now help when other countries have natural disasters
  - Examples Indonesia 2004 and Haiti earthquake 2010 (killed 300,000)
Graphic Information Systems (GIS) merges info from:
- Satellites and land based sources.
- Satellite photos, land based maps, stats and other sources. Computer store this info.
- GIS collects data from around the world and helps in natural disasters.
Today human activity threatens the Earth.

**Pollution**
- Rise of industry and population growth have led to decline in air and water quality.
- Car exhaust, factory exhaust, liquid and solid waste from urban areas cloud the air and water supply.
- Oil spills cover spots in the ocean and shoreline.
- Pollution is a severe threat because almost all living things need fresh air and water.

**Climate Change**
* burning fossil fuels increases the amount of carbon dioxide in the atmosphere. CO2 mixes with moisture and forms a blanket around the earth, trapping heat. (global warming)
  * will cause the polar ice caps to melt. Sea level rise.

**Ozone Layer** - prevent some UV rays from hitting the earth. Without the ozone layer living things can be mutated. (skin cancer).
* CFC’s cause holes in the ozone.
Why do Humans Modify Their Environments?

- To satisfy basic energy/calorie intake needs for survival
- The greater the amount of crops grown and livestock, the healthier and more likely is the survival of the species
- Crops and livestock are sources of caloric energy for humans
- Societies which are more successful at meeting their food needs generally tend to expand in numbers
- Successful societies may export food after they meet their basic needs
- Societies which cannot produce sufficient amounts of foods often perish, suffer from hunger, and famine.
- Societies which struggle with agriculture may have to import much of their food
Sunlight passes through the greenhouse gases and warms everything on the Earth.

The Earth warms up and gives out heat. Some heat passes through the greenhouse gases but some heat is trapped inside, warming up the Earth.
The Greenhouse Effect

Some sunlight that hits the earth is reflected. Some becomes hot.

ATMOSPHERE

CO₂ and other gases in the atmosphere trap heat, keeping the earth warm.

absorbed by atmosphere and Earth

escaping radiation

absorbed by greenhouse gases

radation

deletration

carbon dioxide (C₂O₂)

oil and petrol engines

greenhouse gases and fossil fuels
**Pesticides**

- Why do people use pesticides?
- Pesticides are poisonous chemicals which are used by farmers to control insects which threaten crops
- Pesticides are absorbed by the food and water we use to eat and drink

**Acid Rain**

- What is acid rain and why is it harmful?
- Acid rain is highly toxic or poisonous
- Whenever acid rain falls it leads to the deterioration of the environment and even buildings
- Many trees, plant and animal species are severely affected by acid rain
- Forests die from prolonged exposure to acid rain, animal life starts to mutate and often die.
- Since efforts to control acid rain have reduced by 2/3
Two types of natural resources:
- Non-renewable resources - these are resources that once they are consumed, they can only be used once.
- Renewable resources – are those resources which can be replaced if given enough time and taking adequate measures

Depletion of Resources
- Depletion of resources refers to the consumption of them
- Humans consume renewable natural resources at a rate which is faster than they can reproduce
- Humans are extracting and consuming a finite number of natural resources at a rapid rate
Destruction of Natural Habitats

- Consequences of destruction of natural habitats leads to:
  - Lesser amounts of plant and animal diversity
  - Reduces the amount of oxygen in the atmosphere
  - Genetic materials in plant and animal species have been found to have many cures to diseases
  - The extinction of some of these species will lead to the loss of possible cures of diseases
What is sustainable development and why is it worth pursuing?

- Sustainable development is an attempt made by people to use resources in such a way that meets and guarantees both present and future demand for natural resources.
- It applies to both non-renewable and renewable resources.
Renewable Resources
About 12 years ago, Dan Phillips started Phoenix Commotion, a construction business in his hometown, Huntsville, Tex., where he builds low-income housing out of salvaged items.
Off the Grid Homes
Complete the graphic organizers below. Describe how people are affected by the environment. Then describe how people modify their environment.

**HOW PEOPLE ARE AFFECTED BY THE ENVIRONMENT**

- **Bodies of Water**
- **Landforms**
- **Climate**
- **Plant and Animal Life**
- **Seismic Activity**
Effects of Environment on People

★ **Bodies of Water.** People tend to settle close to water.
★ **Landforms.** People settle in flat, fertile valleys where farming is easier.
★ **Climate.** Average temperatures and precipitation have large impact on shelter, agriculture, and clothing.
★ **Plant and Animal Life.** The crops and livestock in an area greatly affect people’s foods, clothing and homes.
★ **Seismic Activity.** Earthquakes and volcanoes may influence how homes are built.

How People Modify Their Environment

Just as people are affected by their environment, people can modify their environment in a number of ways:
★ **Agriculture.** People cut down forests and plow grassy plains to create farms.
★ **Urban Growth.** People build towns and cities.
★ **Building of Dams.** People seek to prevent floods and store water for drinking and irrigation.
★ **Energy.** People cut down trees, mine for coal, and drill for oil to meet their energy needs.

Natural Disasters

★ Natural disasters pose special problems to people’s lives and property.
★ Earthquakes, tsunamis, and volcanoes caused by tectonic plate movement.
  - **Earthquakes.** e.g. Haiti in 2010.
  - **Tsunamis.** Indian Ocean tsunami (2004).
  - **Volcanoes.** e.g. eruption at Krakatoa in 1873 and in Iceland in 2010.

Extremes in Weather

★ Changes in weather patterns can bring devastating conditions to some areas.
  - **Hurricanes**
  - **Tornadoes**
  - **El Niño**
  - **La Niña**

Earth’s Resources

★ **Renewable Resources** include animals and plants, which can replenish themselves.
★ **Non-renewable Resources** include resources like fossil fuels that do not replenish themselves: oil, coal, natural gas.

Sustainable Development

★ Reducing pollution and using Earth’s resources at a slower rate so that they can be replenished.
★ Using resources to satisfy future as well as present needs.
Ch 7 People and Nature
• Humans _____ on, _____ to, and _____ their physical environment
• Humans must _______to conditions of __________________ or natural disasters
• Examples of such weather or disasters are:
  – ______, volcanoes, tsunamis, ____________
  – GIS (___________________) Can help humans __________ to these disasters.
• People use __________ resources, to conserve ________________ resources
• Humans must pursue ____________ development to protect the environment
Human Environment Interaction

• HEI – what humans do to the ______ and what the earth does to ________
• Humans have the ability to __________ and rapidly __________ or change the environment in which they live
• __________ do not have this ability, or are very __________
• How humans are affected by the Environment
  – Humans, like animals must adapt to the _____, physical __________, vegetation and the __________ resources available where they live
  – Humans can adapt to _______________ conditions, but they cannot change the climate
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APPLYING WHAT YOU HAVE LEARNED

★ What are some of the ways in which the physical environment affects people’s lifestyles?

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• **Bodies of water:**
  – ________ is vital to all civilizations. All major civilizations settled near ________valleys. EX: Egypt and ________

• **Landforms:**
  – People usually settle near ________, _______ and flat ________ valleys
    • Easier to _____ and ______________
    • People avoid living in ________, deserts or ______________ areas
    • Some **groups** do live in _______ environments

• **Climate:**
  – affects the way people _____, the length of the _____ season, the ___ which may be grown and, the types of ________ which may be raised there.

• **Plant and animal life:** the type of ____________ and animals which live in area greatly influence human _________ and __________ activities
  – People make use of __________ and _________ as a source of _____, clothing and __________ materials
How Humans are affected by the Environment

• **How plant and animal life affect humans**
  – **Grassland peoples** – groups who live in grassland areas don’t get enough_____ to raise ____ so they ____________ animals for food and shelter.

• **Seismic activities:**
  – Refers to the probability and frequency of ___________ and ________ activity of an area
  – People adapt by how they build **homes** and buildings according to the amount of seismic activity of the region in which they live. __________ and __________.
How Do People Modify the Environment?

People also affect their environment
Levels of _______ and _______ influence how much people change the environment

*Agriculture* transforms the landscape by ____________ existing vegetation

1. People of the ____________ domesticated plants by watering plants and selecting _______ to be replanted.

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How do Humans Modify Their Environments?

• **Urban Growth**
• People _______ nature by building ______ and ______
• The earliest __________ were in the ___________
  – Developed along _______________and freshwater- ______ and ______.
  – __________ – Smaller urban centers
  – 1700’s – Improved ______, increased overseas _____ and the Industrial ______ led to rapid growth.
  __________ – has concentrated thousands and sometimes millions into ______ treeless areas.
  – _____ replace open fields and forests with paved _________ roads, buildings, __________ and homes
  – Once fields are covered in pavement or built, they are ______ returned back to ______
  – Public parks serve to _________ some open spaces within ________
How do humans modify their environment?

- **Building Dams or Water Reservoirs**

Building _____ is another way humans attempt to modify and have more ______ of the ___________

- **Why do people build dams?**
  - To drain ______
  - To prevent __________
  - To store ______________ for drinking and irrigation
  - To generate __________________ electric power
How do humans modify their environment?

• **Energy**
  – Humans change the environment to _________________ for their needs.
  – Early humans discovered the power of ____ that allowed them to stay _____ and _____
  – Humans could now go to ____________ and _______ climates
  – Later humans used ____, __________, and __________ for light heat and power.
  – Today societies depend on burning __________ like coal and oil
  – Demand for fossil fuels causes humans to __________ and __________.

  • **Problems with fossil fuels** – massive ______ (2010 Gulf of Mexico) and air ______
How the Earth affects humans

• **Extreme weather and natural disasters**
  – __________, hurricanes, _____, earthquakes, tsunamis, and volcanoes are not __________ events.
  – Can kill __________ and destroy __________, bridges, and roads
  – Major disasters
    • ______________ – 79AD buried thousands of Romans in ash, changed the course of a river and raised the sea.
    • ______________ – 1873 Pacific Ocean island blew the island apart in an explosion that was a 1000 times more powerful than an atomic bomb
    • ______________ – 1906 killed 3000 and destroyed most of the city
    • ______________ – 2004 killed 200,000+ waves as high as 100 feet moving over 100 mph
    • ______________ - 2010
  – Earthquakes, volcanoes, and tsunamis are often caused by _____________.
  – Most are in the _______________
  – Since these disasters don’t happen all the time people _____ and ________.
There is no way to _________ extreme weather or natural disasters.
Scientist try to __________ them and ________ for them.
1989 ________________earthquake did far less damage because building where designed to _____ with the earthquake.
Nations now _____ when other countries have ________________
   – Examples __________ 2004 and _______ earthquake 2010 (killed 300,000)
GIS and Global Disaster

• __________________________(GIS) merges info from:
  – __________ and land based sources.
  – Satellite ______, land based maps, stats and other sources. __________ store this info.
  – GIS _____________ from around the world and helps in natural disasters.
Today human activity threatens the Earth.

**Pollution**
- Rise of ________ and __________ growth have led to decline in air and water quality.
- Car ________, factory exhaust, ________ and solid waste from urban areas cloud the ___ and ________ supply.
- __________ cover spots in the _____ and __________.
- Pollution is a __________________because almost all living things need fresh air and water.

**Climate Change**
* burning fossil fuels increases the amount of ________________ in the _________. CO2 mixes with moisture and forms a _________ around the earth, trapping heat. (global warming)
  * will cause the ________ caps to melt. ______________ rise.

**Ozone Layer** - prevent some ___ rays from hitting the earth. Without the ozone layer living things can be ___________. (______________).
  * ________ cause holes in the ozone.
Pesticides

• Why do people use pesticides?
• Pesticides are ________ chemicals which are used by farmers to control ________ which ________ crops
• Pesticides are ________ by the _____ and _____ we use to eat and drink

Acid Rain

• What is acid rain and why is it harmful?
• Acid rain is highly ______ or ____________
• Whenever ______ falls it leads to the _______________ of the environment and even _______
• Many ____, ______ and _______ species are severely affected by acid rain
• ______ die from __________ exposure to acid rain, animal life starts to _______ and often _____.
• Since efforts to control acid rain have reduced by ______
Two types of natural resources:
- __________ resources - these are resources that once they are ________, they can only be used ________.
- ___________ – are those resources which can be ___________ if given enough _______ and taking ____________ measures

Depletion of Resources
- ___________ of resources refers to the ______________ of them
- Humans consume ____________ natural resources at a rate which is faster than they can ______________
- Humans are ____________ and consuming a _______ number of natural resources at a ______________
Consequences of destruction of natural habitats leads to:

- Lesser amounts of ______ and ____________________
- Reduces the amount of ______ in the atmosphere
- ______ materials in _____ and _______ species have been found to have many ________ to diseases
- The ________ of some of these species will lead to the loss of __________ of diseases