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Chapter 1: Using Geography Skills

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How does the movement of the Earth around the sun affect our environment?

Things to Think About...

• What is the effect of latitude on climate?



- The sun is a star in our galaxy called the Milky Way
- It provides light & energy needed for life on Earth
- It affects our environment (our surroundings) in countless ways.



- The Earth travels around the sun in an oval shaped path called an <u>orbit</u>.
- It takes 365 ½ days for it to complete one <u>revolution</u> or journey around the sun.
- The Earth spins around on its <u>axis</u>— an imaginary line running through its North & South poles.







- During the year days or nights might seem longer because of the Earth's tilt on its axis.
- The Earth's tilt/orbit cause changes in temperature.





- The amount of warmth one feels depends on how directly the sun falls on a region.
- The amount of sunlight also affects how much food is produced.

• Imaginary lines, called lines of <u>latitude</u>, are east-west circles around the globe

Effect of Latitude

- They divide the Earth into regions according to the sunlight they receive
- The <u>equator</u> is a latitude line that circles the Earth exactly halfway between the North & South pole.





- On/near March 21 & September 23, the sun is directly over the equator making both days and nights exactly the same length
- These days are the spring and fall equinoxes.



- Effect of Latitude ()
 - Two other major lines of latitudes are the <u>Tropic of</u> <u>Cancer</u> and the <u>Tropic of Capricorn</u>





- There are times in the year when the sun is directly over both the Tropic of Cancer and Capricorn creating the <u>summer</u> & <u>winter solstices</u> in the Northern Hemisphere
 - <u>summer solstice</u> June 21 or 22 when over the Tropic of Cancer
 - <u>winter solstice</u> December 21or 22 when over the Tropic of Capricorn
- During these times, the seasons are opposite in the Southern Hemisphere.

Question: What is the significance of June 21 and December 21?



Effect of Latitude (C)

- The area between the Equator, the Tropics, and the Arctic/Antarctic circles also have specific names and characteristics.
 - <u>low latitudes</u>: area between the Tropics of Cancer and Capricorn; receives direct sunlight; almost always hot
 - <u>high latitudes</u>: area between the Arctic/Antarctic Circles and the North/South poles; a.k.a. "polar zones"; no direct sunlight; always cold
 - <u>middle latitudes</u>: area between the Tropics and Circles; a.k.a.
 "temperature zones"; have all seasons: spring, summer, fall, winter







Orbit
 Revolution
 Rotation

How does latitude affect climate? Give an example
How does the Earth's rotation affect our environment?



The relationship between the Earth and the sun creates our days, seasons, and climate, and influences our environment.



- Create a graphic organizer that illustrates the main idea and its supporting details. You can create your own main idea or use the one provided.
- You may help one another, but it's NOT a group or pair assignment. Everyone needs to turn one in.





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Things to Think About...

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What is geography? How can the 5 themes of geography help you understand the world?

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HIGH PLAINS Geography

The study of Earth from different points of view. Geographers (people who study geography) study:

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- landforms
- people
- how people & the Earth affect each other

Themes of Geography Geographers focus on two questions when working:

- A. Where are things located?
- B. Why are they there?

They organize information into 5 themes:

- 1. location
- 2. place

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- 3. human-environment interaction
 - movement
 - regions

- LOCATION
 Geographers study a place be describing it. Find absolute location using two types of imaginary lines: latitude & longtitude
 - 1. <u>Parallels</u>: east-west circles around the globe; also called latitudes; describe location as north/ south of Equator; divide globe into units called <u>degrees</u>.
 - 2. <u>Meridians</u>: north-south circles around the globe; also called longitudes; begin & end at the N and S poles; describe location as east/west of Prime Meridian
 - <u>Prime Meridian</u> (runs through Greenwich, England) is O° longitude





5 Themes

Includes a location's physical & human features. To describe an area you might include the following: Climate (how hot or cold) Population (number of people living there) Regions (plains, gulf coast) MISSISSIPP

HUMAN-ENVIRONMENT INTERACTION

Focuses on how people affect or change the physical characteristics of their environment OR how their environment affects them

Example #1: environment affecting people:

Mexico had very little rain and crops were getting ruined,

so they had to borrow water from the USA. Example #2: people affecting environment:

A lot of people were migrating to the west in the 1800s,

so people started chopping down trees to make room and

 5 Themes

NESTERN MOVEMENT

Explains the relationship between places and how people, goods, and ideas get from one place to another.

Example:

When the Spanish came to Mexico, they brought their religion, animals, and foods with them. This eventually helped create what we know about the Mexican culture (Catholicism, importance of horses, spices)

5 Themes

REGIONS

Used to make comparisons and usually grouped by one unifying characteristic such as:

- Climate
- •Land
- PopulationHistory

Example: People who live in the desert have a much different life than people who live in the country.

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Review... AKES Parallel Degree ENGLAND meridian • Why do people study geography? • What are the 5 themes of geography? MISSISSIPPI VALLEY DELTA

So, What's the Big Idea?

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Geographers study the Earth according to the five themes: location, place, human-environment interaction, movement, and regions







• What are the advantages and disadvantages of globes and maps in showing the Earth's surface?

- How did Mercator try to create an accurate map?
 - What are the parts of a map?

Globes & Maps

- As people explored the earth they collected information about the land
- The globe was an accurate representation of continents except the difference in the <u>scale</u> or size.
- Problem with globes: not enough detail or small enough for convenience.
- Flat maps were created
- Problem with flat map: there were <u>distortions</u> changes in the accuracy of shapes and distance



Making Maps



- 1569- <u>Gerhardus Mercator</u> created flat map to help sailors
- He expanded the area between longitudes near the poles making areas near poles bigger than they are
- The Mercator <u>projection</u> method of putting a map of Earth on a flat piece of paper— is still used in deep-sea navigation



Making Maps



- Other techniques-interrupted projection-show accurate shape of land on flat surface
- Many believe Arthur <u>Robinson's projection</u> is the best world map-it shows accurate shapes of land and oceans
- Problem with Robinson's is that it still has distortions on the edges of map



Making Maps







Mercator Projection





Parts of a Map



The most important part of a map is the <u>compass rose</u> —which is a model of compass. It tells the cardinal directions —which are north, south, east, and west.



Maps also have indicator for <u>scale</u> —tells what a certain distance on the map stands for on the surface of the earth.





Parts of a Map

Certain symbols on maps are used to indicate landmarks like roads, rivers, & towns. These symbols are explained in the <u>key</u> — or legend

Most maps include a grid — blue lines representing latitude/longitude; some use letters and numbers



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Natural Regions of Texas



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Projection, Statewick Mapping System

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Gerhardus Mercator Distortion Scale

- What is the main problem with the interrupted projection?
 Why are the different parts of a mark
- Why are the different parts of a map important?



Representing the Earth as a globe and as a flat map presents different problems.