

# Physical Geography of East Asia

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Theme

A

## PURPOSE

To become familiar with the physical and biological diversity which exists in East Asia and the causes of those differences.

## THEME STATEMENT

People, Places & Environment (PPE): Humans create spatial views and geographic perspectives of the world to make informed and critical decisions about relationships.

## SUGGESTED TIME

Teacher's discretion.

## KEY VOCABULARY & CONCEPTS

- physical geography = the scientific study of the earth's physical and biological environments and their interrelationships
- plate tectonics = the dynamic theory of how the earth's crustal features were formed as a result of divisions (plates) and the movements of each
- trench = the deepest of all abyssal valleys located along a convergent plate boundary
- island arc = crescent-shaped chains of volcanic islands located along convergent plate boundaries
- Pacific Ring of Fire = a chain of volcanoes and earthquake activity circling the Pacific Ocean
- elevation = measures the height of landforms above and below the datum plane (average point between high and low tides, which is the definition of "sea level")
- altitude = distance above a given surface
- monsoon = seasonal wind
- deciduous = sheds leaves annually due to either drought or colder temperatures
- coniferous = cone-bearing

## MATERIALS NEEDED

- world atlas with thematic maps depicting physiographic regions, hydrologic features, climates, and biotic communities
- outline map of East Asia (see Appendix II)
- four overhead transparencies of East Asia
- marking pens for transparencies
- overhead projector

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## SUMMARY

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Adaptable Levels  
Grades 6-12

Related Themes  
TPDC, CCC, USGC

Values  
Acceptance, stewardship

Skills  
Acquiring, organizing,  
comparing, clarifying, decision-  
making

Integration  
Geography, math, science,  
language arts

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## BACKGROUND INFORMATION

By analyzing and gaining an understanding of the physical geography of East Asia, an overall appreciation of how human encroachment has affected this region will be better understood. Before or during the lesson, be sure to review the key vocabulary with students.

## INITIATION (Inquiry, Preview, Involvement)

Give each student a world atlas, a map of East Asia, and Student Handouts #1 and #2. Encourage each student to quickly locate and mark the following thematic maps in the atlas for later use:

- physiographic map (depicting landforms and water features)
- natural vegetation map
- climate map

## DEVELOPMENT (Instruction, Data Collection, Organization)

Explain the basics of how tectonic activity, climatic influences, and biotic communities have created a unique environment from which humans have been influenced and are presently influencing.

## EXTENSION/ENRICHMENT (Idea Articulation, Ownership, Experimentation)

Ask students to form four groups, each of which will be responsible for the location of one of the following regions listed on Student Handouts #1 and #2: physiographic, hydrologic, climatic, or biotic regions. Using the world atlas and the map of East Asia, draw in or highlight and label each specific location.

## ASSESSMENT OF ACHIEVEMENT

- Students should choose a spokesperson to label their group's primary locations on the overhead projector. The rest of the students should follow along, labeling each feature on their own maps as each is presented. This is also a good time to emphasize and discuss some of the key questions below.
- Using climatic data, have students construct a climograph found within each biotic community, drawing conclusions based on their findings [math, science]. Have students write an essay based on their findings [language arts].

## KEY QUESTIONS

- Is there a connection or "common thread" detectable in all four major categories (*i.e.*, landforms, hydrologic features, climate, and biotic communities)?
- Which feature is that "common thread," and how does it influence the other categories?
- How do you define the term "ecology"? How does it relate to physical geography, which includes all four categories?
- How have humans influenced the diverse ecosystems of East Asia?

## REFERENCES & RECOMMENDED RESOURCES

McKnight, Tom. *Physical Geography: A Landscape Appreciation*. Fifth Edition. Englewood Cliffs: Prentice Hall, 1996. (ISBN: 0134402154)

## STUDENT HANDOUT #1:

*Landforms, Hydrologic Features & Biotic Communities of East Asia*

## 1. LANDFORMS

- Himalayan Mts.
- Plateau of Tibet
- Kunlun Shan Mts.
- Altun Shan Mts.
- Tarim Basin
- Taklimakan Desert
- Tian Shan Mts.
- Altai Mts.
- Khangai Mts.
- Greater Hinggan Range
- Gobi Desert
- North China Plain
- Sichlian Basin
- Yunnan Plateau
- Japan Trench
- Ryukyu Trench
- Izu Trench

## 2. HYDROLOGIC FEATURES

- Hwang Ho (Yellow) River
- Yangtze River
- Hsi River
- Irrawaddy River
- Salween River
- Mekong River
- Ganges River
- Brahmaputra River
- Indus River
- South China Sea
- East China Sea
- Yellow Sea
- Sea of Japan

## 3. BIOTIC COMMUNITIES AND ASSOCIATED CLIMATIC CLASSES

- a. monsoon forests
  - tropical rainy climate
- b. midlatitude forests (mostly deciduous)
  - humid mesothermal climate
  - humid microthermal climate
- c. coniferous forests (boreal)
  - humid microthermal climate
- d. temperate grasslands
  - dry climate
  - highlands

## STUDENT HANDOUT #2:

*Climates of East Asia*

## 1. CLIMATIC INFLUENCES

- a. elevation
  - adiabatic rates of cooling
- b. altitude
- c. ocean currents
  - Kurshio
  - Oyashio
- d. distribution of land and water
  - monsoons
- e. latitude
- f. storms

## 2. VARIATIONS

- a. dry climates = characterized by evaporation exceeding precipitation
  - arid dry = average annual precipitation is 10" or less
  - semi arid steppe = average annual precipitation is between 10"-20"
  - mean annual temperature is below 64.4°F
  - midlatitude desert
  - midlatitude steppe
- b. humid mesothermal climate
  - average temperature of the coldest month is above 26.6°F but below 64.4°F
  - average temperature of the warmest month is above 50°F
  - no distinct dry season; average rainfall of the driest summer month is at least 1.2"
  - winter drought; driest winter month has less than 1/10 the average precipitation of the wettest summer month
  - hot summer; average temperature of the warmest summer month is greater than 71.6°F
  - humid subtropical; mild midlatitude with no dry season (or a dry winter) and a hot summer
- c. humid microthermal climate
  - average temperature of the coldest month is below 26.6°F
  - average temperature of the warmest month is above 50°F
  - no distinct dry season; average rainfall of the driest summer month is at least 1.2"
  - winter drought; driest winter month has less than 1/10 the average precipitation of the wettest summer month
  - hot summer; average temperature of the warmest summer month is greater than 71.6°F
  - warm summer; average temperature of the warmest summer month is less than 71.6°F
  - humid continental; humid midlatitude with a severe winter, no dry season (or dry winter), and a warm/hot summer
- d. highlands
  - vertical climates go through as many variations as those ranging from the tropics to the poles