Name _____ Class _____ Date _____

Map Skills

Forest Cover in Costa Rica
- 1947
- 1977
- 1987

Costa Rica, a country in Central America, was once nearly covered with rain forest. Today, farmers and ranchers have cleared much of the forest, a process called *deforestation*. Deforestation destroys the homes of thousands of species.

Use the map above to answer the questions below.

1. **Using a Key** In which year did Costa Rica have the most forest cover? The least?

_____

2. **Analyzing Data** About what fraction of Costa Rica was still covered with forest in 1987?

_____

3. **Analyzing Data** Was more forest removed between 1947 and 1977 or between 1977 and 1987?

_____

4. **Inferring Relationships** What is the relationship between the locations of cities and the locations of the remaining forest?

_____

5. **Inferring Relationships** Why might the decline in deforestation have occurred when it did?

_____

Assessment

Quiz

Section: Understanding Our Environment
MATCHING

In the space provided write the letter of the term that best matches the description.

_____ **1.** Earth as a "closed system"

_____ **2.** energy from the sun

_____ **3.** mercury, lead, and some plastics

_____ **4.** may be broken down by natural processes

_____ **5.** the number and variety of species that live in the area

a. biodiversity

b. biodegradable

c. renewable resource

d. nondegradable

e. "spaceship Earth"

MULTIPLE CHOICE

Write the letter of the correct answer in the space provided.

_____ **6.** Because environmental science encompasses so many different fields of study, it is said to be a(n) _____ science.
   a. ecological   **c.** social
   b. interdisciplinary   **d.** human

_____ **7.** Which period in human history occurred prior to the others listed below.
   a. hunter-gatherer   **c.** post-Industrial Revolution
   b. Industrial Revolution **d.** agricultural revolution

_____ **8.** To survive hunter-gatherers changed their environment by
   a. burning the prairies to prevent trees from growing.
   b. spreading plants to areas beyond where they originally grew.
   c. Both (a) and (b)
   d. Neither (a) nor (b)

_____ **9.** During the agricultural revolution,
   a. plants and animals were domesticated.
   b. fossil fuel use increased.
   c. human populations decreased due to disease.
   d. Both (a) and (c)

_____ **10.** The _____ was not a direct result of the Industrial Revolution.
   a. overhunting of large mammals   **c.** improvement in quality of life
   b. shift to the use of fossil fuels   **d.** growth of cities

Name _____ Class _____ Date _____

Assessment

Quiz

Section: The Environment and Society

MATCHING

In the space provided, write the letter of the term that best matches the description.

_____ 1. "If I don't use this resource, someone else will."

_____ 2. helps determine a product's worth

_____ 3. may be used to determine how much to spend to control pollution

_____ 4. diverse individual economies

_____ 5. human needs may be met indefinitely

a. cost = benefit analysis

b. sustainability

c. "Tragedy of the Commons"

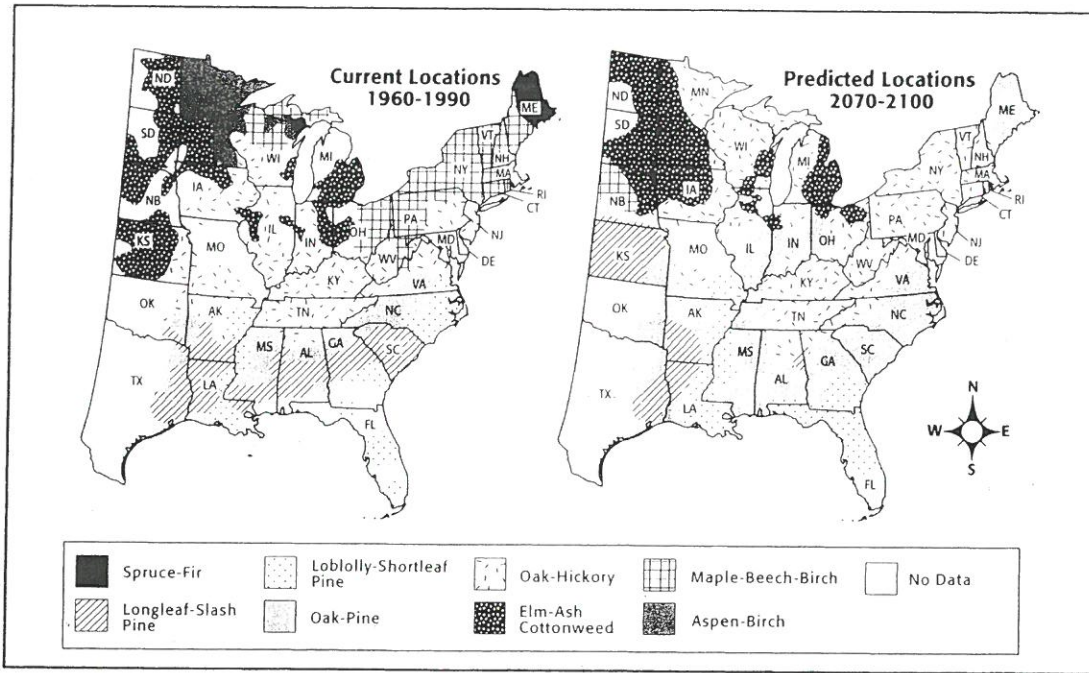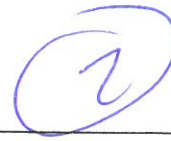**d.** developed nation

e. law of supply and demand

MULTIPLE CHOICE

Choose the one best response. Write the letter of that choice in the space provided.

_____ 6. What represents Earth's "modern commons"?
  a. shared natural resources
  b. protected grasslands
  c. threatened species
  d. unpolluted habitats

_____ 7. According to the law of supply and demand, what would occur if the supply of oil declined but the demand remained the same?
  a. Oil prices would drop.
  b. Oil prices would increase.
  c. Oil usage would drop.
  d. Oil usage would increase.

_____ 8. An ecological footprint is the
  a. mark a person's shoe makes in soft earth.
  b. number of animals a person has killed.
  c. amount of land and ocean area needed to support one person.
  d. number of trees people cut down.

_____ 9. Compared to developing nations, developed nations have
  a. lower health standards.
  b. faster-growing populations.
  c. greater personal wealth.
  d. declining populations.

_____ 10. Which of the following is a "developing" nation?
  a. the United States
  b. France
  c. Canada
  d. Ethiopia

Skills Worksheet

Map Skills

BIOME MAP

Current Locations 1960-1990

Predicted Locations 2070-2100

Key: Spruce-Fir, Loblolly-Shortleaf Pine, Oak-Hickory, Maple-Beech-Birch, No Data, Longleaf-Slash Pine, Oak-Pine, Elm-Ash Cottonweed, Aspen-Birch

The Experimental Method is the way scientists develop a hypothesis or theory. To test their hypotheses, scientists develop models or experiments. For example, the map on the right is a model scientists created to study a hypothesis about the effects of climate change on tree populations in the eastern United States. It was created to show the changes in tree species' locations that may occur based on projected temperature increase. The other map shows the current tree species' locations for comparison.

Use the maps above to answer the questions below.

1. **Using a Key** Currently, what are the predominant tree species in New England? Based on the model, what may be the predominant species in 2100?

_____

2. **Analyzing Data** What general trend in tree migration does this model show?

_____

3. **Inferring Relationships** Maple syrup, produced from maple trees, is an important industry in New England. Based on the model, what could be the effect of global warming on that industry?

_____

_____

4. **Testing a Hypothesis** What sort of experiment could scientists create to test the hypothesis modeled in the map on the right?

_____

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Section: Scientific Methods

MATCHING

In the space provided, write the letter of the description that best matches the term or phrase.

_____ 1. observation

_____ 2. hypothesis

_____ 3. prediction

_____ 4. experiment

_____ 5. data

a. logical statement about what will happen

b. information gathered in an experiment

c. testable explanation for an observation

d. procedure used to test a hypothesis

e. information gathered by using the senses

MULTIPLE CHOICE

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

_____ 6. One important scientific habit of mind is the ability to conceive of new ideas, called
    a. intellectual honesty.
    b. curiosity.
    c. imagination.
    d. skepticism.

_____ 7. Which of the following is not a habit of mind of a good scientist?
    a. skepticism
    b. creativity
    c. intellectual predictability
    d. openness to new ideas

_____ 8. By examining _____ , scientists can test predictions for situations in which it is impossible or unethical to use experiments.
    a. correlations
    b. observations
    c. control groups
    d. variables

_____ 9. In an experiment, the factor of interest is called the
    a. control group.
    b. experimental group.
    c. hypothesis.
    d. variable.

_____ 10. The group that does not receive the experimental treatment in an experiment is the
    a. control group.
    b. experimental group.
    c. data.
    d. variable.

Assessment

Quiz

Section: Statistics and Models
MATCHING

In the space provided, write the letter of the description that best matches the term or phrase.

_____ 1. physical model

_____ 2. graphical model

_____ 3. mathematical model

_____ 4. conceptual model

a. a flow chart

b. includes maps and charts

c. three-dimensional representation you can touch

d. equation representing how a process works

MULTIPLE CHOICE

Choose the best response. Write the letter of that choice in the space provided.

_____ 5. Scientists use statistics to
  a. graph data.
  b. analyze data.
  c. communicate ideas to each other.
  d. All of the above

_____ 6. To get an accurate result, a sample size must be
  a. small enough to give an accurate estimate for two or more populations.
  b. large enough to give an accurate estimate for a whole population.
  c. equal to the mean.
  d. greater than the mean.

_____ 7. When studying a system, a conceptual model can help scientists understand
  a. what components a system contains.
  b. how the system components affect each other.
  c. Both (a) and (b)
  d. None of the above

_____ 8. Which model is particularly useful in scientific cases with many variables?
  a. physical
  b. graphical
  c. conceptual
  d. mathematical

_____ 9. Risk is
  a. the collection of numerical data.
  b. the probability that something wanted will happen.
  c. the probability that something unwanted will happen.
  d. a group of similar things of interest to a scientist.

_____ 10. The classification and collection of data that are in the form of numbers is called
  a. statistics.
  b. probability.
  c. distribution.
  d. mean.

Name _____ Class _____ Date _____

Assessment
Quiz

Section: Making Informed Decisions

MATCHING

Match each value with its definition. Write the letter corresponding to the correct answer in the space provided.

_____ 1. social/cultural value

_____ 2. educational value

_____ 3. environmental value

_____ 4. recreational value

_____ 5. ethical/moral value

a. the protection of natural resources

b. human leisure activities

c. what is right or wrong

d. the maintenance of human communities, their values, and their traditions

e. the accumulation, sharing of knowledge

MULTIPLE CHOICE

Write the letter of the description that best matches the term or phrase.

_____ 6. When making an environmental decision, listing positive and negative long- and short-term consequences can help you to
  a. predict risks involved.
  b. make observations.
  c. weigh your values.
  d. collect data for a graph.

_____ 7. Principles or standards we consider important are known as
  a. values.
  b. models.
  c. morals.
  d. data.

_____ 8. The decision-making model
  a. provides a systematic process.
  b. is a conceptual model.
  c. helps you make decisions.
  d. All of the above

_____ 9. Which environmental decision-making model is in the correct order?
  a. Make a decision. Gather information. Consider values. Explore consequences.
  b. Gather information. Consider values. Explore consequences. Make a decision.
  c. Consider values. Explore consequences. Make a decision. Gather information.
  d. Explore consequences. Make a decision. Gather information. Consider values.

_____ 10. Which step in the environmental decision-making model should include reading newspapers and listening to well-informed people on all sides of an issue?
  a. evaluating all the information
  b. gathering information
  c. considering values
  d. exploring consequences