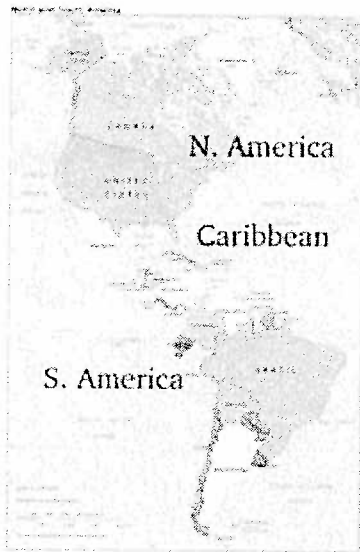


WESTERN HEMISPHERE: Physical Geography

By the end of this unit the student should be able to:

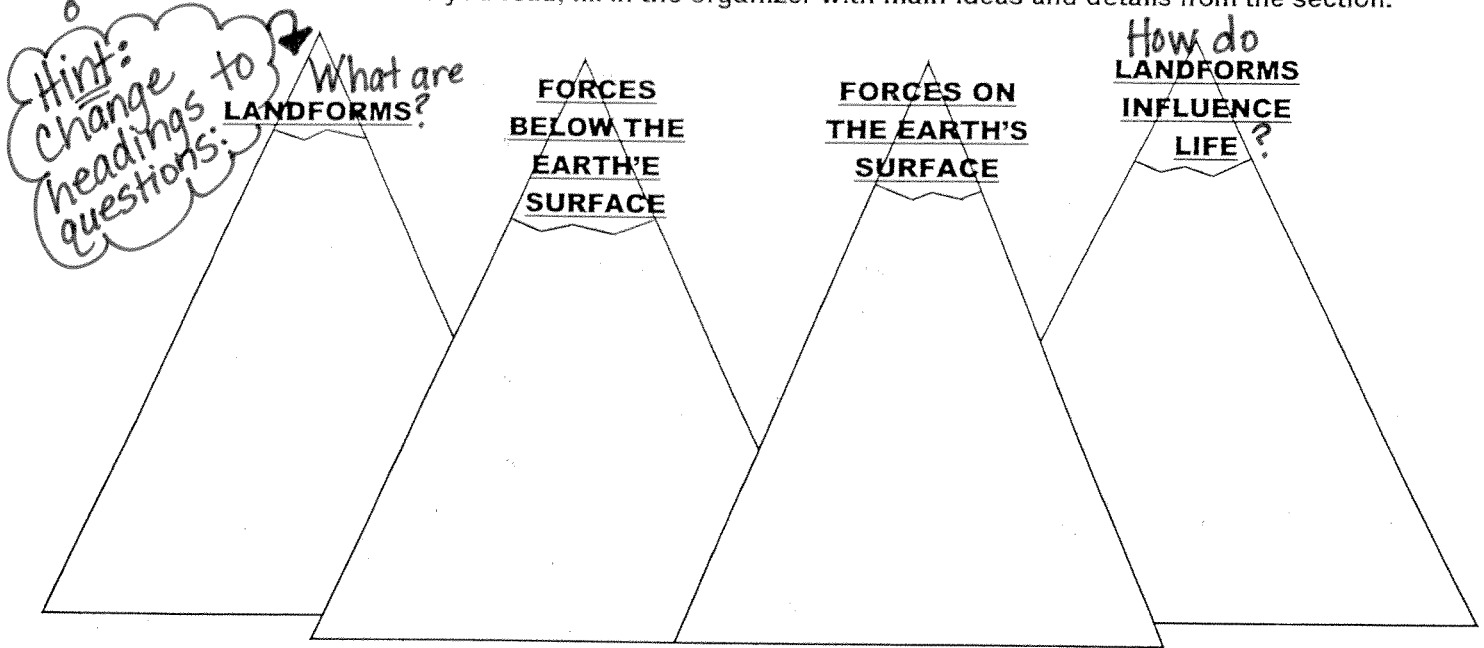
- Describe some major landforms of the Western Hemisphere
 - Identify the major world climates
- Explain adaptations humans have made to make living near certain landforms and in different climates possible
 - Show interdependencies in an ecosystem
 - Describe natural resources of the Western Hemisphere
- Give examples of how the environment controls earth and how people change the earth in positive and negative ways



Name _____ Hour _____

Mrs. French—6th Grade Social Studies

IDEA ORGANIZER: As you read, fill in the organizer with main ideas and details from the section.



FILL IN THE BLANK: Read each sentence. Fill in the blank with the word from the word pair that best completes each sentence.

- Pg# _____ Where? _____
1. Cooled _____, magma that reaches Earth's surface, is what created the Mid-Atlantic Ridge. (sediment/lava)
 2. Islands, mountains, and plains are all examples of _____. (landforms/continents)
 3. Wind, ice, and water are causes of _____. (erosion/earthquakes)
 4. Sediment is formed by the process of _____. (erosion/weathering)
 5. _____ is a theory that Earth's surface is divided into more than 12 slow-moving plates. (Plate tectonics/Plate movement)
 6. Large landmasses called _____ are parts of Earth's crust. (continents/countries)
 7. _____ often occur along faults, or breaks in Earth's crust where movement occurs. (Volcanoes/Earthquakes)
 8. _____ are formed when two ocean plates collide. (Ocean trenches/Continents)
 9. The collision of two _____ creates huge mountains. (continental plates/ocean plates)
 10. Many early settlements were built near _____ with fertile soil. (river valleys or deltas/mountains)



Name _____

TOP 50 LANDFORMS: VOCABULARY TO KNOW

How many of these terms do you know? Below is a list of types of landforms found all over the earth. Refer to your atlas and pages H14-H15 in your Geography Textbook for help. Use physical maps to find examples in our world and record them next to the definition.

- 1) **Archipelago** – chain of islands _____
- 2) **Atoll** – coral island/reef surrounding a lagoon- _____
- 3) **Basin** – depression in the surface of the land; some filled with water _____
- 4) **Bay/Gulf** – part of a sea or lake that extends into land; a bay is smaller than a gulf _____
- 5) **Beach** – sandy or gravelly part of the shore of an ocean/lake _____
- 6) **Butte** – small raised area of land with steep sides; smaller than a plateau/mesa _____
- 7) **Canyon** – deep, narrow valley with steep sides _____
- 8) **Cape** – point of land that extends out into the water _____
- 9) **Cave**-hollow underground chamber/ opening in the side of mountain _____
- 10) **Channel/Strait/Sound**-strait or narrow sea between two close landmasses _____
- 11) **Cliff** – high steep surface of rock, earth, or ice _____
- 12) **Coast** – land along an ocean or sea _____
- 13) **Delta** – land formed at the mouth of a river by deposits of silt/sand/ pebbles _____
- 14) **Desert** – very dry area where few plants grow _____
- 15) **Dune** – mound, hill, or ridge of sand that is heaped up by the wind _____
- 16) **Fjord** – deep, narrow inlet of the sea between high, steep cliffs _____
- 17) **Forest/Woodlands**-region covered with trees & underbrush _____
- 18) **Foothills** – hilly area at the base of a mountain range _____
- 19) **Geyser**-natural spring that shoots out jets of heated water/ steam _____
- 20) **Glacier** –large sheet of ice that moves slowly over some land surface _____
- 21) **Grassland/Plain/Savanna**- vast open plain covered with natural grasses _____
- 22) **Harbor/Port** – safe place for ships/boats to dock _____
- 23) **Hill** –a rounded, raised landform, not as high as a mountain _____
- 24) **Iceberg**- large chunk of floating ice that has broken off from a glacier _____
- 25) **Island** – body of land completely surrounded by water _____
- 26) **Isthmus** – narrow strip of land surrounded by water connecting two big bodies of land _____
- 27) **Jungle/Rainforest**- hot, humid, tropical rain forest _____
- 28) **Lagoon** – shallow body of water partly or completely enclosed by an atoll _____
- 29) **Lake** –body of water completely surrounded by land _____
- 30) **Marsh/Swamp**-spongy wetland covered with thick growths of tall grasses/ reeds/trees _____
- 31) **Mesa** – high, flat raised area of land; smaller than a plateau/ larger than a butte _____
- 32) **Mountain** – high, rounded/ pointed landform with steep sides, higher than a hill _____
- 33) **Mountain pass** – opening or gap through a mountain range _____
- 34) **Mountain range** – row or chain of mountains _____
- 35) **Mouth** –place where a river empties into another body of water _____
- 36) **Oasis** – place in the desert made fertile by a steady supply of water _____
- 37) **Ocean** – one of the earth's four largest bodies of water _____
- 38) **Peak** – pointed top of a mountain or hill _____
- 39) **Peninsula** – body of land nearly surrounded by water _____
- 40) **Plateau** – high, flat land rising steeply above the other land; larger than mesa butte _____
- 41) **Reef** – ridge of sand, rock, or coral that lies at or near the surface of a sea _____
- 42) **Reservoir** –natural or artificial lake used to store water _____
- 43) **River** – large stream of water that flows across land/empties into a lake/ocean/another river _____
- 44) **Sea** – large body of water partly/entirely surrounded by land; smaller than an ocean _____
- 45) **Source** –place where a river/stream begins _____
- 46) **Timberline** – imaginary line on mountains where trees no longer grow _____
- 47) **Tributary** – river/stream that flows into a larger river/stream _____
- 48) **Valley** – area of low land between hills/mountains _____
- 49) **Volcano** – opening in the earth through which lava, rock, gases, & ash are forced out _____
- 50) **Waterfall** –flow of water falling from a high place to a lower place _____

PLACE: Physical Map of the Western Hemisphere

Directions: There are several physical characteristics in the Western Hemisphere. Use the provided physical map of the Americas to **LABEL** the following physical landforms. Refer to maps in the back of your textbook for help. **COLOR** the map using the elevation key colors as your guide. *All water should be colored blue and labeled rivers should be traced in dark blue.*

RIVERS:

___ Amazon (SA)

___ Colorado (NA)

___ Mississippi (NA)

___ Missouri (NA)

___ Parana (SA)

___ Rio Grande (NA)

___ St. Lawrence (NA)

___ Yukon (NA)



HILLS and PLAINS:

___ Brazilian Highlands (SA)

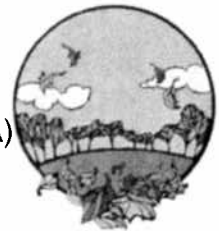
___ Brazilian Plateau (SA)

___ Canadian Shield (NA)

___ Guiana Highlands (SA)

___ Great Plains (NA)

___ Patagonia (SA)



LAKES:

___ Great Lakes (NA)
(not each individual lake)

___ Great Salt Lake (NA)

___ Lake Winnipeg (NA)

___ Lake Titicaca (SA)



OTHER LANDFORMS:

___ Amazon Basin (SA)

___ Atacama Desert (SA)

___ Great Basin or Death Valley (NA)

___ Pampas Valley (SA)

___ Hudson Bay (NA)

___ Panama Canal (*Isthmus of Panama*) (NA)

___ Yucatan Peninsula (NA)



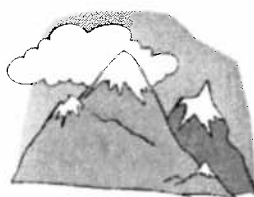
MOUNTAIN RANGES:

___ Andes Mts. (SA)

___ Appalachian Mts. (NA)

___ Rocky Mts. (NA)

___ Sierra Madre (NA)



ELEVATION & COLORING KEY:

- Color high elevated lands brown
- Color medium level lands yellow
- Color lower/flat lands green
- Trace labeled rivers dark blue
- Color all water areas blue

15 for correct labeling

10 for neatness in tracing and coloring

25 TOTAL POINTS



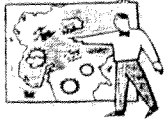
INTRODUCING REGION

Geographers often divide the world into units of study called *regions*. A region is a large area that is different from the areas around it. It can be defined by a single characteristic or by several. An area can also be part of more than one region.

Natural regions are identified with natural features. These features are controlled by nature, not mankind, and may include things like climate or landforms (tropical region, the Rocky Mountain region, etc.).

Cultural regions are defined by features that people create. Some cultural features, such as cities and crops, are easy to see. Others, such as religious beliefs, are mainly invisible.

A region's natural or cultural features can change. As a result, regions can change in character, shape, or size. For example, the Sahara Desert is a natural region that changes depend on how much rainfall it receives over time. The desert expands and *recedes*, or shrinks depending on this. A country, such as Iraq, is a cultural region going through a political change. Describe the types of regions you are a part of.



NAME _____

REGIONS

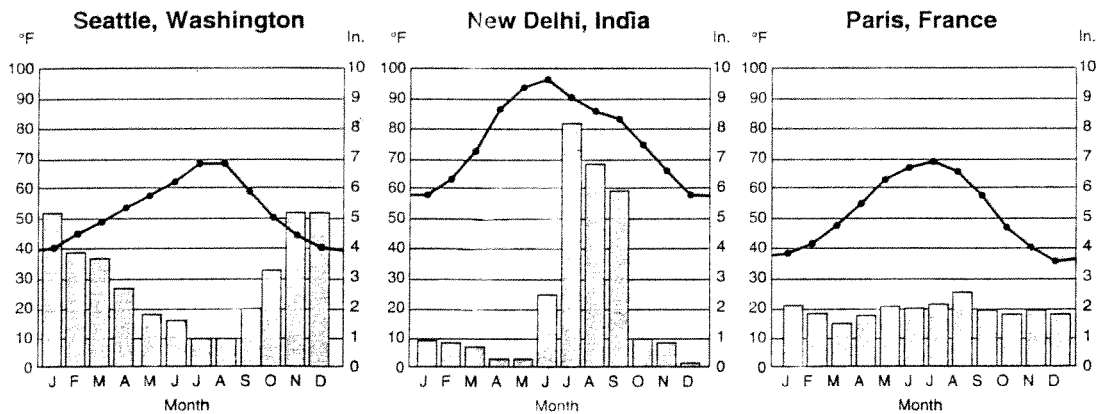
Directions: Use the maps on pages 44-53 in the atlas to answer these questions.

1. Based on Map 2 on page 45, which region has the greatest number of states? _____
2. The Great Plains on Map 2 are part of what two regions on Map 1? _____
3. Which four regions are named for physical features on Map 2? _____

4. Compare Map 2 (pg 45) with the environments map (pg 44). Which two regions have the most cropland?
_____ Predict which economy is important in these two regions.

5. Compare Map 2 (pg 45) with the World Climate Map (pg 14-15) and the World Political Map (pg 12-13).
Where in the world would you find a region whose climate is most like that of the southwestern USA?

Directions: Read about world climates and climate graphs on pages 14-15 in the atlas. Then use the climate graphs found below to answer the questions.



Line graphs show temperature. Bar graphs show precipitation.

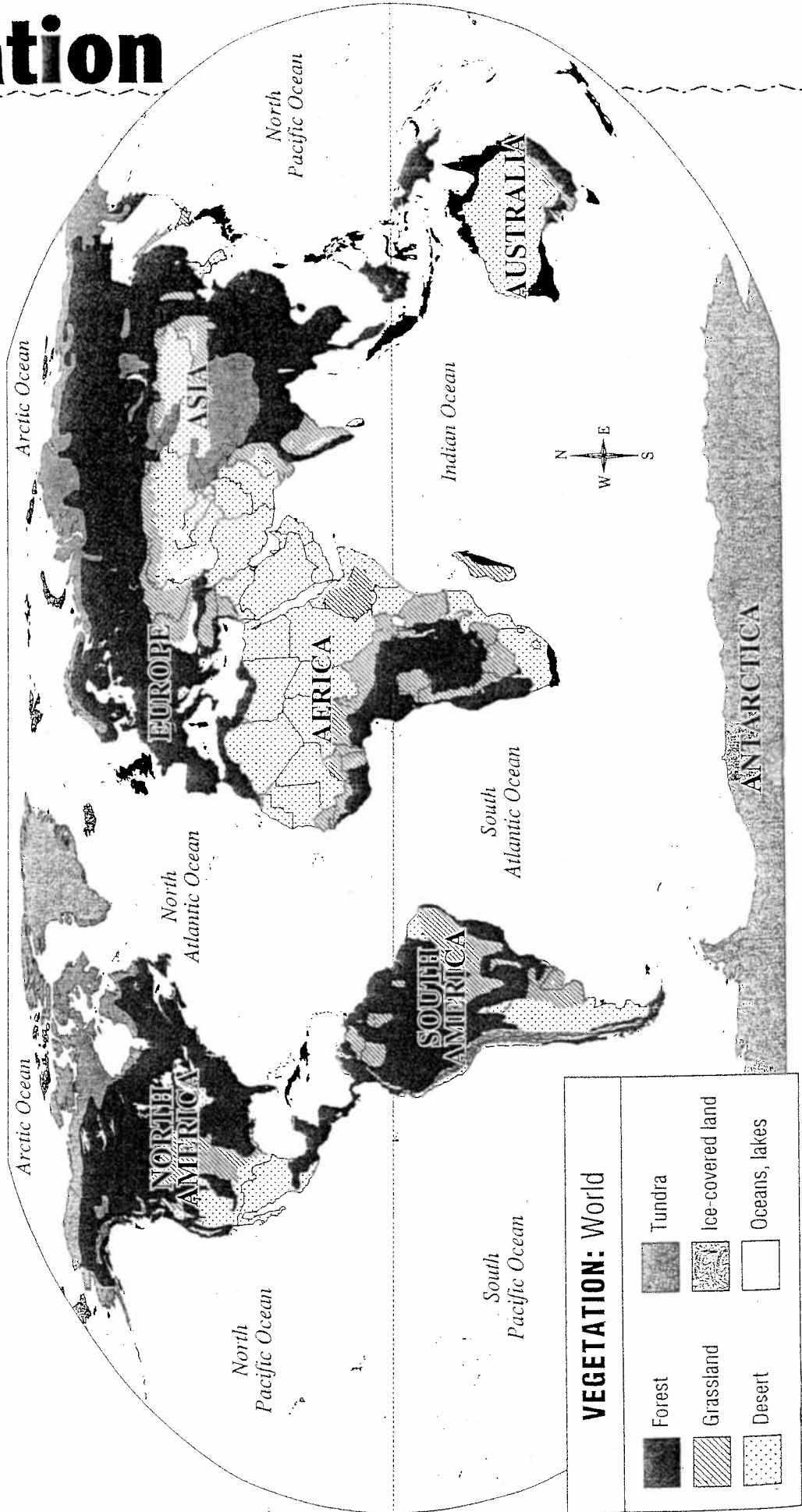
6. Which city has the greatest annual range of temperatures? _____
7. What is the warmest month in New Delhi? _____
8. What are the two coolest months in Seattle? _____
9. In which city is precipitation most even throughout the year? _____
10. Which city has the highest total precipitation? _____

Vegetation

World

are more than 400,000 types of plants in the world, they can not all be shown on this map. For that reason, this map is divided into major vegetation areas, providing a general idea of which kinds of plants grow in a place.

A vegetation map shows which kinds of plants grow in an area. A vegetation map for a garden, for example, might show where roses and tulips grow. The map on this page shows the vegetation of the entire world. Since there



VEGETATION: World

Forest	Tundra
Grassland	Ice-covered land
Desert	Oceans, lakes

World Environments: Looking at Vegetation

Directions: Use the World Vegetation map to answer the following items.

1. Dividing a continent by the types of vegetation grown in different areas is an example of which theme of geography?

2. Which three continents have mostly forests in the northern areas of their landmasses?

a. _____ b. _____ c. _____

3. What direction would you have to travel from the desert area of the United States to reach grasslands?

4. Describe where the most plants probably grow in Africa and why.

5. Explain how North America and South America vegetation regions are similar and different.

Similar because _____

Different because _____

6. You may complete the crossword puzzle on the next page ▶ *Extra credit opportunity*

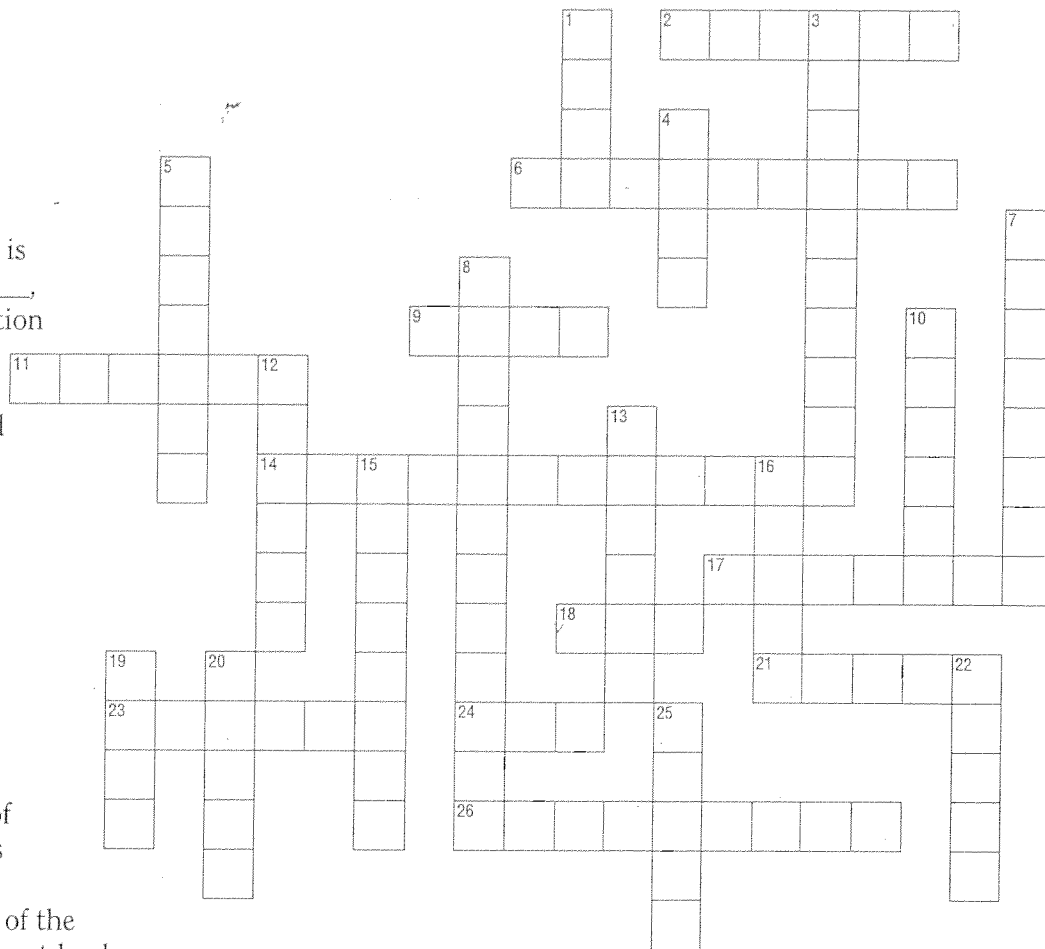
Vegetation

Across

- 2 Most of the earth is covered by _____, where the vegetation is under water.
- 6 The central area of the United States, the Great Plains, is which vegetation area?
- 9 There is _____ forest in South America than any other vegetation.
- 11 Most of Canada is covered by which vegetation?
- 14 The central part of this continent has much grassland.
- 17 The _____ part of the United States is forest land.
- 18 In the desert, the climate is _____.
- 21 Forest areas are filled with _____.
- 23 This small continent is almost all forest land.
- 24 Much of Greenland is covered by this cold stuff.
- 26 A desert fills the center of this southern continent.

Down

- 1 _____ the North Pole, there is lots of tundra and ice.
- 3 This continent has almost no vegetation; it is mostly ice.
- 4 In the center of this continent is a large area of tundra.
- 5 A large desert area is found in the _____ U.S.
- 7 The _____ part of Africa is covered by desert.
- 8 This continent has a long skinny area of tundra along its western coast.
- 10 Across the _____ of Africa is a large patch of grassland.
- 12 The _____ regions are found in very cold or high areas of the earth.



- 13 These are some of the driest and hottest regions of the earth.
- 15 You might find these animals with antlers in tundra areas.
- 16 Along the _____ of many oceans, there are many forest areas.
- 19 There is _____ desert area in North America than in Africa.
- 20 Grassland is good land for growing _____.
- 22 If you traveled _____ from the grassland of North America, you would reach desert.
- 25 If you walk _____ from the desert area in Africa, you will reach forest land.

DID YOU KNOW?

The word *tundra* comes from a Finnish word that means "barren land." Actually the tundra is home to many different types of vegetation: mosses, grasses, and lichen. Tundra animals include lemmings, reindeer, and polar bears.

GRAPHIC ORGANIZER As you read, use the graphic organizer to take notes about the factors that affect weather and climate.

Sun and Location	Wind and Water	Mountains

FILL IN THE BLANK Read each sentence. Fill in the blank with the word from the word pair that best completes each sentence.

Pg# Where?

1. Climate is a region's average _____ over a long period.
(**weather/temperature**)

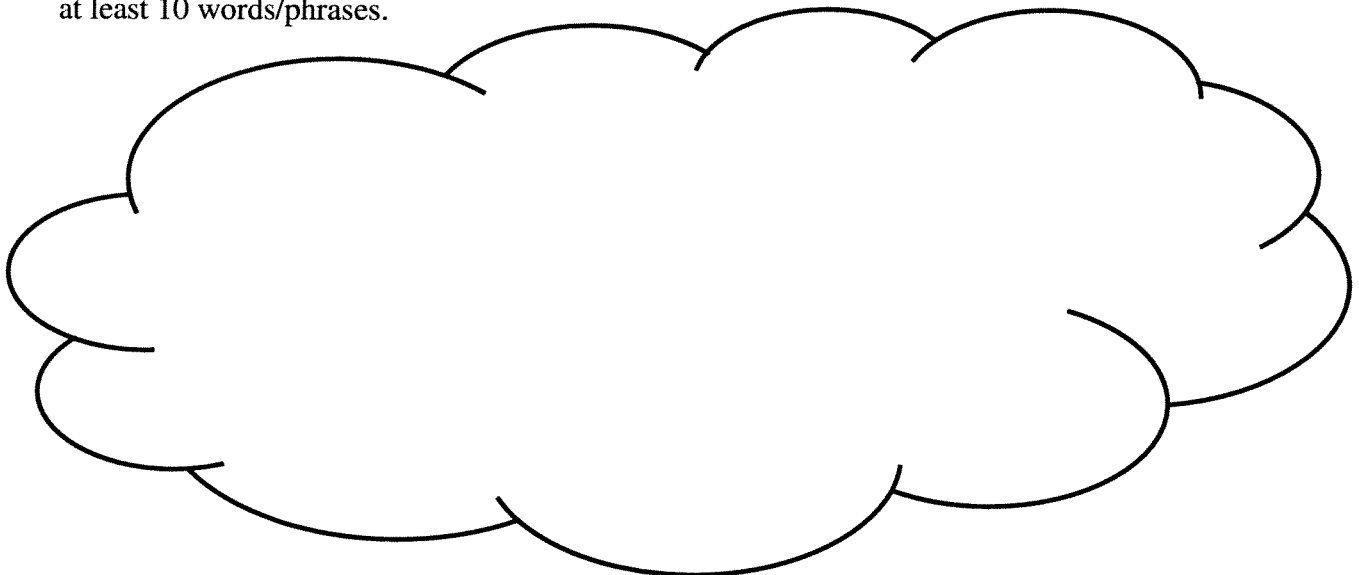
2. Differences in _____ create wind. (**air temperature/air pressure**)

3. Large bodies of _____ help to moderate the temperature of land nearby. (**water/clouds**)

4. The hottest places on Earth are near the _____. (**poles/equator**)

5. A _____ is the place where two air masses of different temperatures or moisture content meet. (**rain shadow/front**)

DIRECTIONS Create a word cloud using words you associate with *weather* and *climate*. Use at least 10 words/phrases.



DIRECTIONS Read each description. On the lines below, write the letter of the term or place that best matches each description.

- | Pg# | Where? | | |
|-----|--------|---|----------------------|
| ___ | ___ | ___ 1. has bitterly cold winters, short and cool summers | a. temperate climate |
| ___ | ___ | ___ 2. permanently frozen soil | b. steppe |
| ___ | ___ | ___ 3. semidry grasslands or prairies that border deserts | c. polar climate |
| ___ | ___ | ___ 4. areas of tall grasses, scattered trees, and warm all year | d. monsoon |
| ___ | ___ | ___ 5. seasonal winds that bring dry or moist air | e. highland climate |
| ___ | ___ | ___ 6. the wettest and hottest places on Earth | f. savanna |
| ___ | ___ | ___ 7. moderate or mild climates that tend to have all four seasons | g. tropical climate |
| ___ | ___ | ___ 8. the mountain climate where the temperature changes as you go higher up | h. permafrost |

DIRECTIONS Look at the WORLD CLIMATE REGIONS map on pages 56-57 of your *Introduction to Geography* textbook. Answer the following items.

9. What type of climate does the state of Michigan have? _____

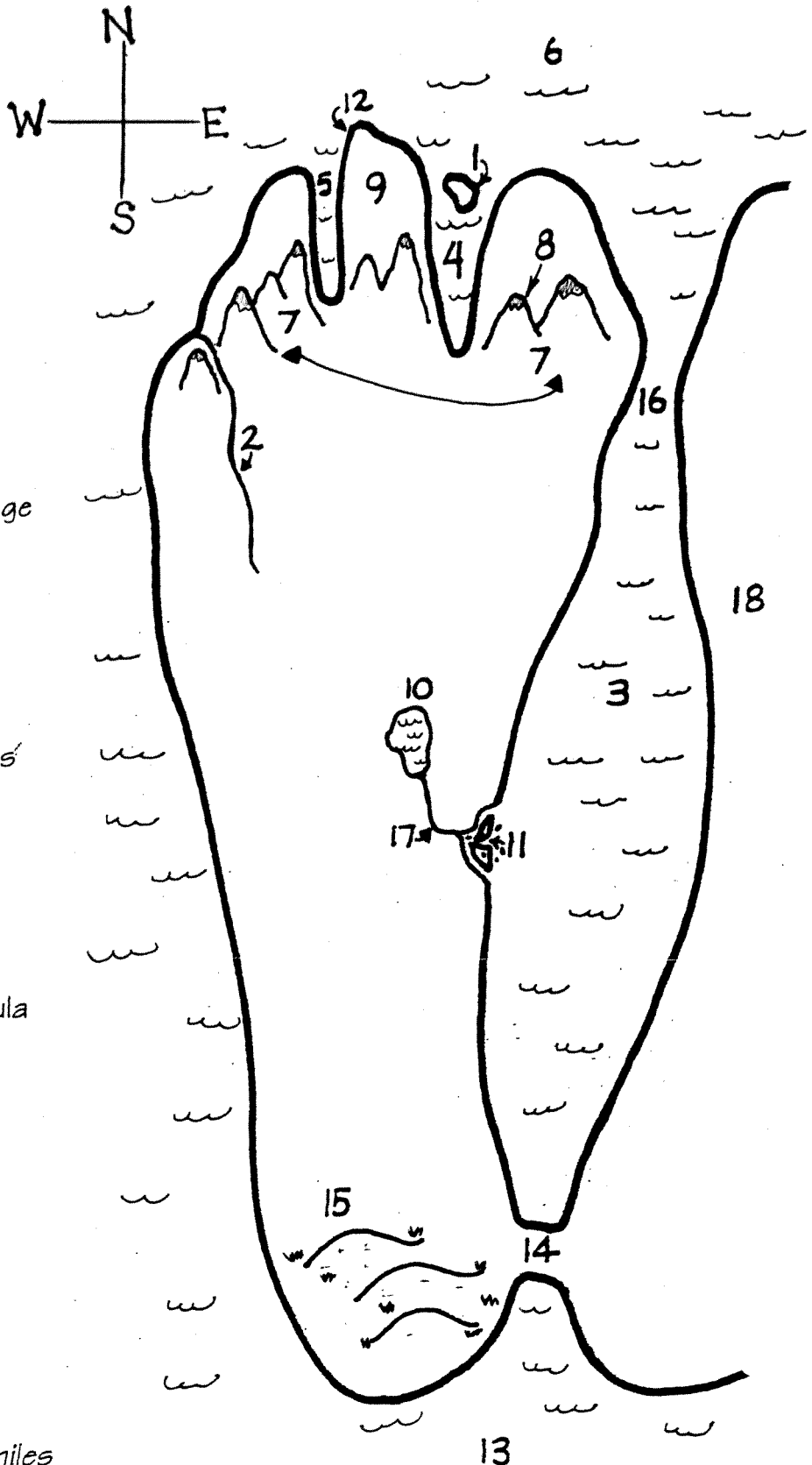
10. Describe this type of climate and how people **adapt** to it using complete sentences.

11. Use the information from the Climate Zones Chart to create a suitcase foldable for your scrapbook.

THE CONTINENT OF PODIATRY

Numbered Map of West Podiatry

Student Directions: Match each of the numbered physical features with one of the place names listed below.



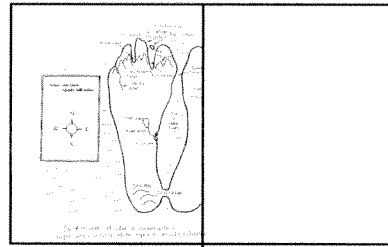
- _____ North Foot Ocean
- _____ South Foot Ocean
- _____ Mt. Crackatoa
- _____ Corn Mountain Range
- _____ Blister Lake
- _____ Blister Delta
- _____ Bunion Strait
- _____ Gulf of Fallen Arches
- _____ Isthmus of Lint
- _____ Little Toe River
- _____ Blister River
- _____ Second Digit Peninsula
- _____ West Itch Bay
- _____ East Itch Bay
- _____ Big Toe Island
- _____ Cape Hangnail
- _____ Callus Hills
- _____ East Podiatry

Scale: One inch equals 600 miles

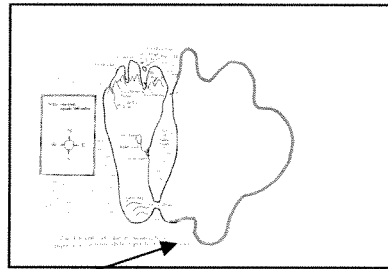
The Continent of East Podiatry (Pewwww—that stinks!!!!)

Now that you have had the opportunity to identify the landforms of West Podiatry (a.k.a-left foot island), you will have the opportunity to create the continent of East Podiatry. On the student resource page, you will finish drawing the continent of East Podiatry. In addition, you will be drawing and creating the landforms for East Podiatry. Make sure you use the following guidelines to help you complete a QUALITY assignment.

___1. Use a plain **white piece of paper to attach** to the student resource sheet

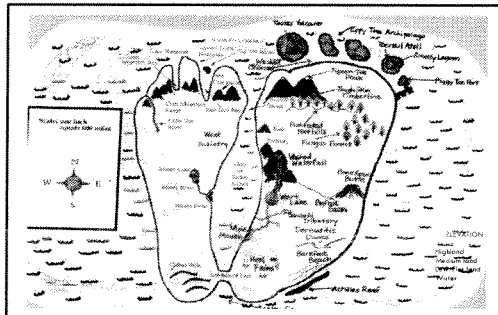


___2. **Draw the shape** of East Podiatry (the right side) in any form you would like.



___3. **Create and draw** (this means hand drawn pictures!!!) at least **20 landforms** for East Podiatry. You may **ONLY** use up to **three** of the same types of landforms used on West Podiatry. Use your **TOP 50 LANDFORMS** list for help.

___4. **Label with dark ink each of the 20 landforms** on East Podiatry—make sure you **use creative names** like they did on West Podiatry.



___5. **Neatly color the entire map** when completed with the drawing and labeling. Color the map **according to the elevation key** gone over in class (Highlands=brown; Middle level lands=yellow; flat/lowlands=green; all water areas and rivers=blue). **Include an elevation key** on the map

___6. **Cut around the entire map and glue it** on a large piece of construction paper. Give the map **a title** (This is a physical map-but of what?? Name your new land creation-is it another continent, an island, etc.??? and call it "Physical Map of _____.")

TURN THE PAGE OVER TO SEE THE GRADING RUBRIC for this PROJECT.

GRADING RUBRIC for EAST PODIATRY PROJECT

Used correct paper	5
Map includes 20 different drawings of landforms (only three can be repeated from West Podiatry)	10
ALL new landforms have creative labels	10
Entire map is colored according to elevation key; elevation key is included on map	15
Outline of map shows; entire map cut out & glued; title	5
QUALITY- this is your best work; meet deadline; neat in appearance, spelling, used capital letters at start of labels; writing is legible; used bold labels and outlines	5
<hr/>	
TOTAL PROJECT GRADE	50

INTRODUCING HUMAN-ENVIRONMENT INTERACTION

The set of conditions in which people live is known as their *environment*. An area's environment includes its land, water, climate, plants, and animals. There are many kinds of physical and human environments around the world.

This geographic theme includes a study of the way the world appears because of how humans have interacted with the environment. Geographers look at how people and their physical environment affect each other. For example, the area that is now New York City has changed a great deal over time because of human behavior. Can you think of ways we have changed the environment? _____

People depend on their environment to satisfy their basic needs. Among these needs are those for fresh water, food, clothing, fuel, and shelter. The world depends on *natural resources*, any material found in nature that people use and value, for these needs. What natural resources do you depend on? _____

People must adjust or make *adaptations* to the conditions in which they live. For example, different climates require different clothing. Some conditions of the environment cannot be controlled or changed, like the weather or natural disasters. Other conditions can be changed, such as the use of *irrigation* to bring water to dry areas.

 News Special

Are We Running Out of Gas?

Teens imagine a new frontier

America
& Your
World
Today

How can you drive 3,000 miles without stopping for gas? Stop at a restaurant instead—and fill your tank with oil left over from frying food!

That is what Justin Carven and a friend did—in Carven's Greasecar.

While in college, Carven found a way to refit a car to run on cooking oil. His Greasecar recycles waste and doesn't pollute the air.

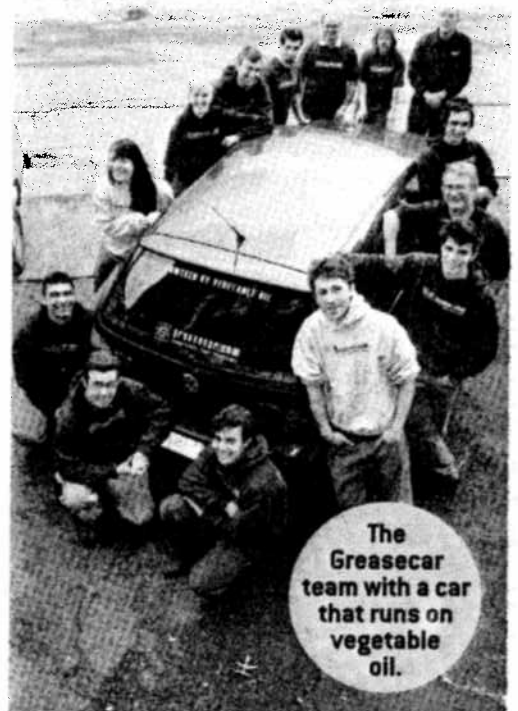
You might smell it, though. Kentuckian Jeffrey Goh, 17, drives a Greasecar. "It smells like a charcoal grill," he told a reporter for his local newspaper.

The Oil We Use

Carven's invention was so successful that he started his own company. Such efforts are offering hope that your generation can help keep America from running out of gas.

With only 6 percent of the world's population, the U.S. uses nearly 25 percent of all oil consumed worldwide (see *Skills*, p. 9).

But the U.S. has only 2.4 percent of the planet's known oil reserves. Much of what remains comes from countries in the



unstable Middle East.

Most of our oil is used to power cars. This causes another huge problem. Burning oil produces greenhouse gases that lead to global warming.

According to the Environmental Protection Agency, cars are the single greatest contributor to air pollution. Yet one in eight Americans drives an SUV, among the most polluting (and fuel-hungry) cars on the road.

News Special continued on next page →

Words to Know

- ethanol: alcohol made from plant matter, such as corn or sugarcane, used as fuel for vehicles.
- hybrid car: a car that can run on more than one type of fuel, such as gasoline and ethanol, or gasoline and electric batteries.

news

BY THE NUMBERS



1,000

barrels of oil consumed worldwide per second



12%

share of U.S. gasoline usage replaced if 100% of U.S. corn crops were converted to ethanol



\$683

cost of a year's worth of fuel for a Prius hybrid car



\$2,099

cost of a year's worth of fuel for a Hummer H3



500

gallons of used cooking oil a restaurant might throw out per day (enough to fuel a Greasecar for more than 20,000 miles)



More Energy Efficient

How can Americans lessen their oil dependence? There are many ways, including:

- driving smaller, more-fuel-efficient vehicles, such as **hybrid cars**.
- using vehicles that run on renewable-energy resources, including **ethanol** and hydrogen.
- refitting factories, offices, and homes to make them more energy efficient.
- using more wind and solar power.

Savannah Walters, 13, says that properly inflated tires also make a difference. By driving with underinflated tires, Americans waste more than 4 million gallons of gasoline a day.

With help from her parents and friends, Savannah founded an organization called Pump 'Em Up! Volunteers around the country distribute donated tire-pressure gauges and fliers about fuel conservation. An eighth-grader from Tampa, Florida, Savannah encourages other kids to get involved in energy conservation.

"We're going to be driving soon, and we don't want to waste money on gas," Savannah says. "We're [going] to inherit the Earth, and it's not fair if we get a disgusting, polluted planet."

What You Can Do

You may not be old enough to drive yet, but you can do your part now. Whenever possible, walk or bicycle to your destination. Ensure that your family car's engine is properly tuned. And don't forget the tires!

Greasecar owner Jeffrey Goh thinks that alternative fuels are the wave of the future. Switching to such fuels will "have to happen," he says, "because oil's going to run out eventually. It won't last forever."

Savannah agrees. "This [energy crisis] affects all of us," she tells *JS*. Small efforts are important, she adds. "There is a simple little thing that we can do to make a *huge* difference—Pump 'Em Up!"

Don't stop there. How can you make a difference?

—Kathy Wilmore & Suzanne McCabe

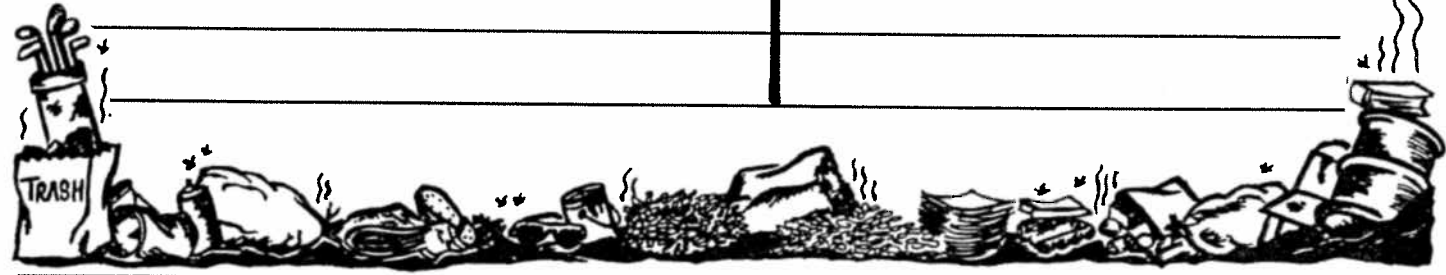
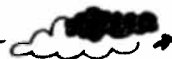
Think About It

1. How might dwindling oil supplies affect the U.S. economy and national security?
2. How is Savannah Walters making a difference for the future? How can you make a difference?



WHAT I READ/HEARD 5 FACTS

WHAT I FEEL 5 OPINIONS



READING A GRAPH

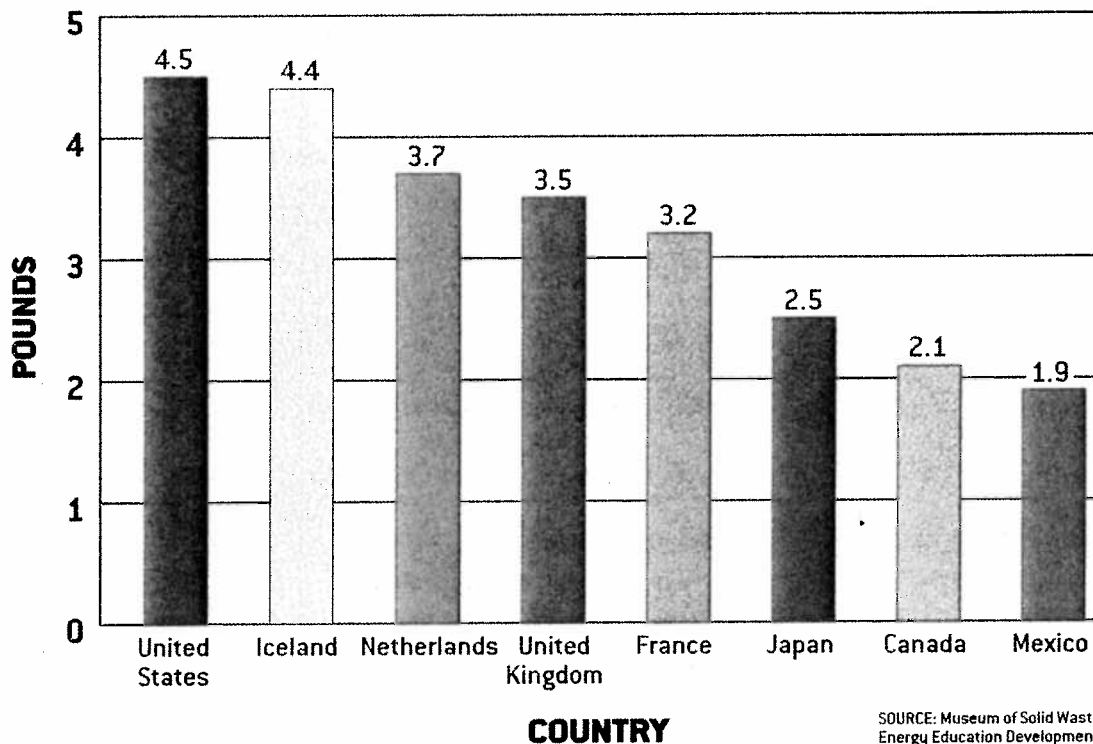
WHAT A WASTE!

Available
as a PDF at
[scholastic.com](http://scholastic.com/juniorscholastic)
[/juniorscholastic](http://juniorscholastic)

As you go about your day, how often do you throw something out? If you were to add everything up at the end of the day, how much do you suppose it would weigh?

This graph shows the amount of stuff that people toss out each day, in an average of pounds per person. Study it. What does it suggest about the way in which people live in each of the countries shown?

Waste Generated Around the World (in pounds per person per day)



SOURCE: Museum of Solid Waste and Energy/National Energy Education Development (NEED) Project, 2008

QUESTIONS Write your answers on a separate sheet of paper.

- How many pounds of waste does an average American produce in a day?
- Which of the European countries shown generates the least waste per person?
- How much more waste, per person, do Americans generate than people in the Asian country shown?
- Which generates more waste per person, the U.S. or its two North American neighbors combined?
- How many pounds of waste does an average American generate in a year?
- How long would it take an average American to generate one ton (2,000 pounds) of waste?
- How long would it take an average French person?
- Does Iceland's level of waste generation surprise you? Why or why not?
- Which continents are not represented on this graph? Why do you think that is?
- What kinds of waste that you produce every day do you think are needless? How could you reduce your waste?

Climate, Environment, and Resources Section 3 Pgs. 62-67

DIRECTIONS Read each sentence. Fill in the blank with the word in the word pair that best completes the sentence.

Pg# _____ Where? _____

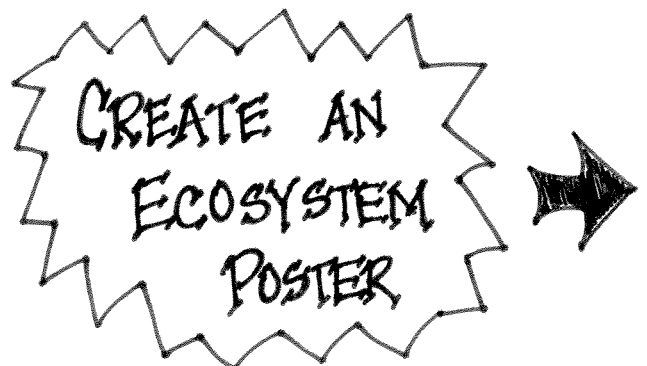
- _____ 1. Organic material called _____ enriches the soil. **(broken rock/humus)**
- _____ 2. When soil gets worn out, it may lead to _____. **(desertification/erosion)**
- _____ 3. A prairie is a type of _____. A forest is another type. **(ecosystem/environment)**
- _____ 4. If there are too many changes in conditions, a species may die out, or become _____. **(extinct/adapted)**
- _____ 5. Most plant roots are found in the _____, or the uppermost layer of soil. **(topsoil/fertile soils)**
- _____ 6. A place where animals and plants live is called a/an _____. **(environment/habitat)**
- _____ 7. All plants and animals are adapted to a certain _____, or surroundings. **(environment/ecosystem)**

MULTIPLE CHOICE Read each statement or question. On the lines below write the letter of the best answer.

- _____ 8. Which of the following is a human action that can change an environment?
- _____ A. climate change B. forest fire
_____ C. pollution D. disease

- _____ 9. The source of energy for *most* living things is
- _____ A. water. B. sunlight.
_____ C. humus. D. topsoil.




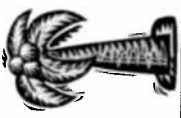

- _____ 10. What part of soil is made from decayed plant and animal matter?
- A. minerals B. humus Pg# _____ Where? _____
C. subsoil D. bacteria



Name _____

ECOSYSTEM PARADE

1. Visit each ecosystem station on the path and read the information found there. Once you have finished viewing the information, color the space on the pathway below. Each space should be colored a different color.

DESERTS		WETLANDS		CORAL REEFS		
					GRASSLANDS	
TUNDRA					SAVANNAS	
RAINFOREST / JUNGLE			FOREST / WOODLANDS			

2. In the space next to your colored square, record two (2) ways humans have changed this type of ecosystem.



ECOSYSTEM DRAWING

Directions: Draw and color an ecosystem of your choice using the guidelines listed here.

- ___ 1. Choose an ecosystem covered in class. Refer to your chart and textbook for help in choosing a system.
- ___ 2. Using a closet-door fold, label your name and the name of the ecosystem on the outside panels.
- ___ 3. In the inside draw a picture of the ecosystem including the background-make it appear like a picture you would take for a magazine or pretend you are standing there-what would you see? Include things that naturally occur in the ecosystem and things man may add to this type of ecosystem.
- ___ 4. Look at the ecosystem drawing on page 63 of your textbook. You must show at least five (5) natural interconnections in your drawing-this means **5 items that are dependent upon one another** in your ecosystem.
- ___ 5. You must also show at least three (3) ways humans have changed or could change this ecosystem.
- ___ 6. Label your **5 interconnections** and **3 human changes** similar to the way it has been done in your textbook.
- ___ 7. **COLOR** the entire foldable neatly.

GRADING:

Correct paper with ecosystem labeled and your name	= 2
Ecosystem drawn and colored	= 10
At least 5 interconnections drawn and labeled	= 5
At least 3 human changes drawn and labeled	= 3
Quality-it's colorful; my personal best; readable	= 5

TOTAL POINTS: _____ =25



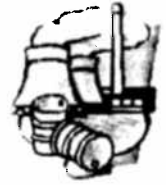
THINK ABOUT IT...

Name _____

Date _____

Hour _____

HUMAN ENVIRONMENT INTERACTION: Thinking About Solutions



1. We have discussed positive and negative interactions humans have on the environment. For the different items listed in the table below, describe one positive and one negative effect humans or the earth has created for each.

Environmental Items	POSITIVE EFFECT (+)	NEGATIVE EFFECT (-)
OCEANS		
AIR		
WILDLIFE		
FORESTS		
NATURAL RESOURCES (oil, uranium, coal, etc)		

2. With the aid of technology, people are inventing ways to fight pollution and manage water supplies. Several solutions to various **water problems** are described below. After reading each one, decide whether it sounds as if it would work by placing a "Y" for yes or an "N" for no on the line next to it.

___ **a. Mideast Canal:** Israel has come up with the idea of constructing a freshwater canal between the Dead Sea and Red Sea and using that water to generate power to remove the salt from sea water. Although the cost would be extremely expensive, the plan could produce enough fresh water to reduce the water problems in Israel, Jordan, and the West Bank.

___ **b. A Pollutant-Eating Bug:** Scientists have discovered pollutant-eating bacteria that could help clean up drinking water. Bacteria have been used in the past to remove various pollutants from the environment. Scientists hope that they can produce "bugs" that will "eat" certain dangerous wastes. It is still not known what will become of the "bugs" once their job is done-will they be lurking in our drinking water?

___ **c. A Pipeline:** With a growing population and a dry climate, California and other states of the west lack fresh water. A massive pipeline has been suggested to bring in fresh water from Alaska or the Great Lakes surrounding Michigan and other Midwest states. There is plenty of water in these areas. For such a project, certain problems would have to be solved. For example, if constructing a pipeline from Alaska, how can people lay pipeline along the ocean floor? In Michigan, water levels have been lower than normal, will the natural water cycle replenish the levels fast enough if an underground pipeline is constructed. Finally, will habitats be hurt in the construction?

___ **d. New Water for Farming:** Water running off fields can keep crops from getting enough water. Farmers today can stop runoff by using laser-guided tractors to plow their fields perfectly level. They can also use computer programs and moisture sensors to tell them exactly how much water to use on each crop. This technology is super helpful and effective, but very expensive, so very few farmers can afford to use it.

___ **e. Fog Harvesting:** Huge sheets of plastic have been set up to "catch" fog in some places where rainfall is lacking but fog is common. The fog turns to drops of water on the plastic sheets and runs down into collection bins. This idea is relatively inexpensive. It has been used in developing countries (poorer countries with less resources) where water is hard to find.

Climate, Environment, and Resources Section 4 Pages 68-72

MATCHING Read each description. On the lines below, write the letter of the term or place that best matches each description.

Pg# _____ Where? _____

- | | | | |
|-------|-------|---|---------------------------|
| _____ | _____ | 1. Loss of fertility and plant life | a. deforestation |
| _____ | _____ | 2. Resources that are replaced by Earth's natural process | b. desertification |
| _____ | _____ | 3. A dark liquid used to make fuels and other products | c. fossil fuels |
| _____ | _____ | 4. Anything in nature that humans use or value | d. hydroelectric power |
| _____ | _____ | 5. Planting new trees in places where forests have been lost | e. minerals |
| _____ | _____ | 6. Nonrenewable resources formed from the remains of ancient plants and animals | f. natural resources |
| _____ | _____ | 7. Solid substances in Earth's crust that are nonrenewable but are often recycled | g. nonrenewable resources |
| _____ | _____ | 8. The destruction or loss of forest areas | h. petroleum |
| _____ | _____ | 9. Resources that are not replaced by nature or that form extremely slowly | i. reforestation |
| _____ | _____ | 10. The production of electricity from water power | j. renewable resources |

DIRECTIONS Read each description. On the lines below, write the letter of the term or place that best matches each description.

- | | | | |
|-------|-------|----------------------------------|------------------------|
| _____ | _____ | 11. natural gas, coal, petroleum | a. natural resources |
| _____ | _____ | 12. wind, water, forests | b. renewable resources |
| _____ | _____ | 13. water, soil, minerals | c. fossil fuels |



DIRECTIONS Using the article packet provided by the teacher, read about how natural resources are being used in different environments around the world. Complete the questions on the next page. Then, create a bumper sticker about an issue affecting our environment.



HUMAN-ENVIRONMENT INTERACTION

DIRECTIONS: Read Earth's Dwindling Resources in the Junior Scholastic magazine and complete the following activities. **ALL ANSWERS ARE FOUND IN THE READING.**



OCEANS

1. What are three things that pollute the oceans? _____
2. Coral reefs are called the "rainforests of the sea" because they are home to _____ marine species.
3. By 2050, what percentage of coral reefs will be destroyed if nothing is done to prevent climate change and pollution? A. 50% B. 70% C. 25%



WATER

4. How many people in the world have NO access to safe drinking water? _____
5. More than _____ children under age 5 die each _____ from diseases related to unsafe water and poor sanitation.



AIR

6. What percentage of the world is exposed to unsafe levels of air pollutants? _____
7. Name three things that put toxic gases in the air. _____
8. Air pollution can increase people's risk of heart disease and _____.

WILDLIFE

9. Nearly one in _____ mammals is at risk of disappearing forever.
10. List three of the most endangered animals. _____



FORESTS

11. Every second, more than an _____ of forest is destroyed.
12. What are two major causes of deforestation? _____ & _____
13. _____ can speed up global warming by releasing greenhouse gases into the atmosphere.



OIL



14. Oil is often referred to as _____.
15. What are two ways we use oil? _____ & _____.
16. Burning oil releases carbon dioxide, a major greenhouse gas. Instead, people may start to rely on what other sources of energy? _____

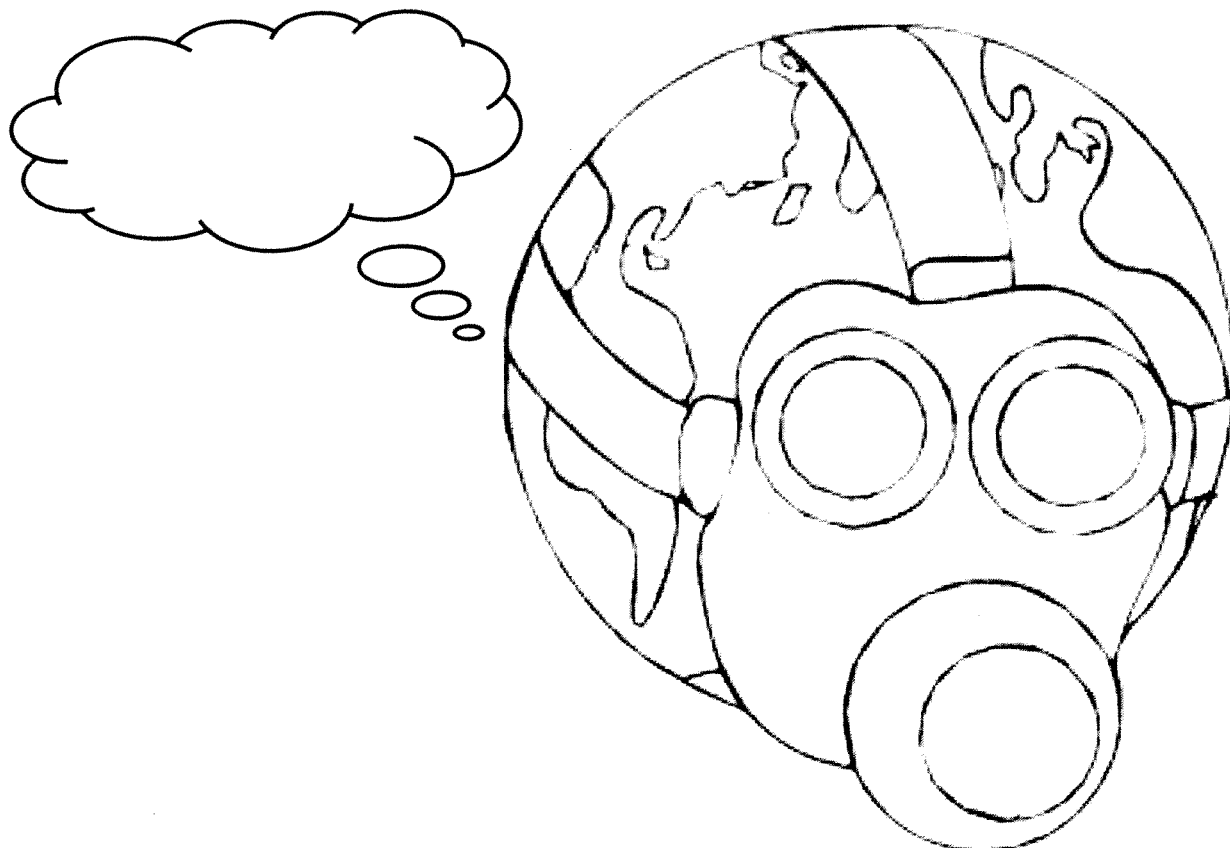
—————▶ FAST FACTS ◀—————

Read the "Fast Facts" on page V. Which fast fact "shocked" you the most and why?

17. Fast Fact that shocked me: _____

18. Why: _____

19. The **cartoon** below depicts the earth in a mask. **Color** the cartoon and then **write** down a caption or saying about the picture in the cloud next to.

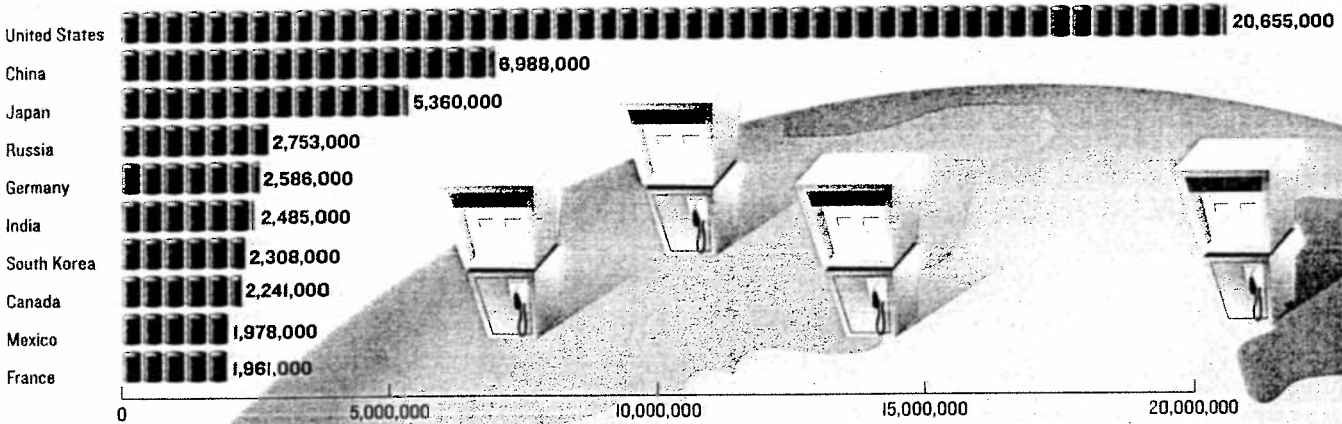


➔ Skills

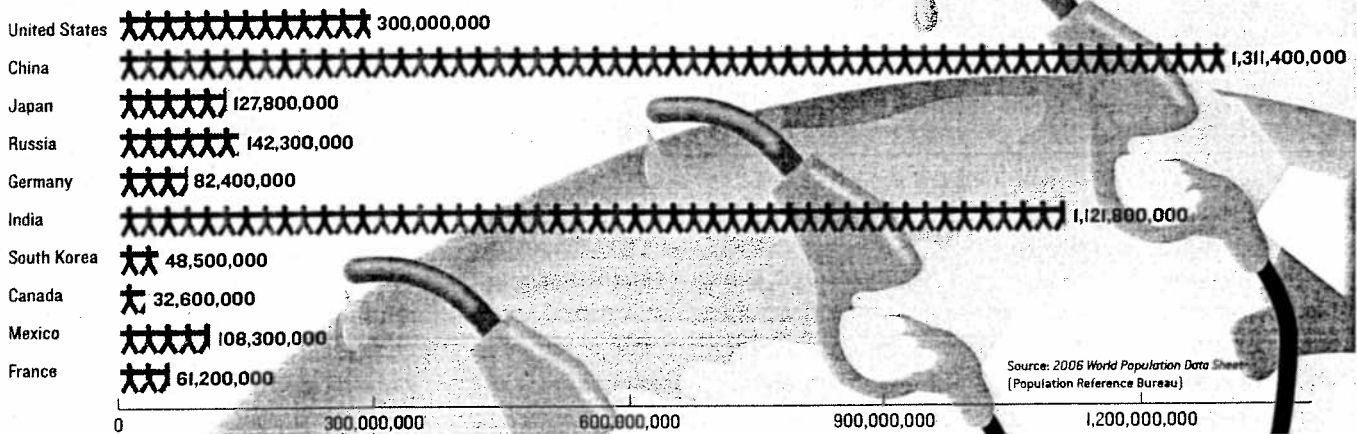
Over a Barrel

Is a country's rate of oil consumption directly related to its population? Find out by studying these graphs, then answer the questions that follow.

Top 10 Countries in Oil Consumption (number of barrels daily)



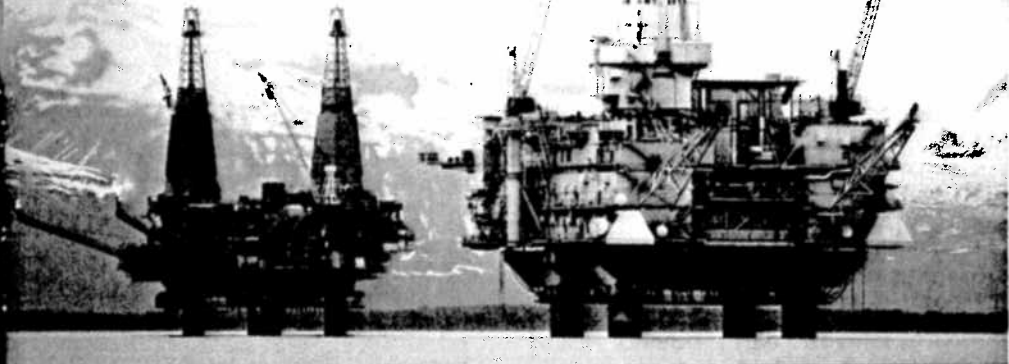
Population of Top-10 Oil-Consuming Countries



Questions

- How many of the Top-10 consumption countries are in North America? _____
- What is their total daily oil consumption? _____
- Which continent has the most countries in the Top-10 consumption list? _____
- Which country's oil consumption is about one third that of the U.S.? _____
- What is the difference in consumption between the U.S. and that country? _____
- Where does the second-most-populous country rank in terms of oil consumption? _____
- Which of the Top-10 countries in consumption has the smallest population? _____
- The country highest in consumption ranks where in the second graph? _____
- When were figures for the top graph released? _____
- One barrel of oil equals 42 gallons. How many gallons of oil does the U.S. consume per day? _____

To Drill or Not to Drill?



These oil rigs are located in Cook Inlet, in southern Alaska. The area is considered to be the birthplace of Alaska's oil-and-gas industry.

Oil companies are making plans to drill in Alaska's Arctic waters, but environmentalists say the risks outweigh the benefits.

In 1896, when gold was discovered in the Klondike River, thousands of people rushed to Alaska seeking treasure. Today, miners still search for gold in our country's largest state. But many people's attention has turned to another of Alaska's natural treasures: oil. This resource is so valuable that it is sometimes called "black gold."

Oil is Alaska's largest industry. The 800-mile-long Trans-Alaska Pipeline was completed in 1977. It carries oil from the frozen North Slope to seaports to be shipped around the world. At its peak, in 1988, the pipeline carried some 2 million barrels a day. But today the North Slope's oil is running low, and the pipeline carries less than half of that amount.

Over the years, oil companies have searched for new sources of Alaskan oil. At first, the focus was on land. The Arctic National Wildlife Refuge (ANWR), in the northeastern corner of the state, is thought to sit on top of a large amount of oil. But conservationists say that drilling would disturb the wilderness environment and the

animals that live there.

Now, oil companies have turned away from the ANWR and have set their sights on Alaska's waters. Last March, President Barack Obama announced a plan to open up new offshore areas to drilling, including the waters off of Alaska's northern coast.

Shell Oil Company started moving forward with plans to drill in the icy Chukchi Sea (see the map on pages 4 and 5). But when the Deepwater Horizon oil rig exploded in April 2010, sending millions of gallons of oil into the Gulf of Mexico, those plans were paused.

Environmentalists would like to see the plans stopped completely. They argue that drilling in Arctic waters is too risky. "Even if it's a 1% chance of a blowout, we know we can't respond effectively," says marine scientist Rick Steiner.

With Americans using 20 million barrels of oil every day, there is real demand for black gold. "But if we really care about the Arctic Ocean," says Steiner, "the last thing we want to do is drill there."

—By Suzanne Zimbler

PAUL SOUDERS—CORBIS

Think!
Should oil companies drill in the Arctic Ocean? Explain.