Name _____ Date _____ Period _____

7th Grade Life Science

1. Scientific Method and Lab Skills
2. Matter (Chemistry)
3. Cells
4. Plants
5. Cell Division (Mitosis)
6. Cell Division (Meiosis)
7. Genetics (Heredity)
8. Artificial Selection
9. Evolution by Natural Selection
10. Metamorphosis
11. Ecology
12. **Conservation Biology**

"Keeping Earth Clean and Healthy into the Future"

1. Topic #12 Conservation biology "Keeping Earth Clean and Healthy "

New vocabulary words: limiting factors and carrying capacity

*Population growth -Brainpop with quiz

What will the future be like if we don't take care of our home Earth?

Wall*e

Could this really happen?

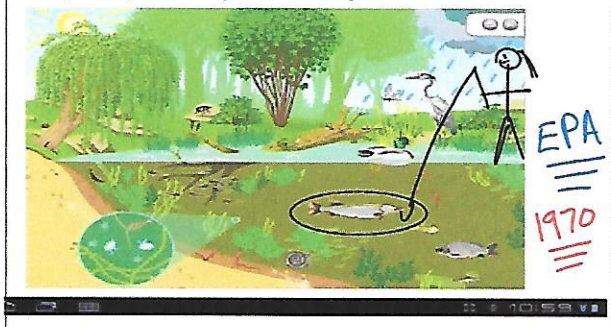
Are movies like the Lorax and Wall*e made to warn us what could happen if we aren't careful and wise when it comes to protecting our home?

2. **Limiting Factors**- anything that restricts the number of an individual population.

These include living and nonliving factors of the ecosystem such as:

Food, water, predators, diseases, pollution, living space, breeding mates and weather.

3. What would restrict the population of the large fish (trout) in this pond ecosystem?



4. **Carrying Capacity**- the largest number of an individual species that an ecosystem can support over time.

A population can temporarily go over (exceed) the carrying capacity but will eventually fall below due to lack of resources.

5. Current world population about 7.6 billion people. (7,600,000,000)

Current China population around 1.3 billion people. (1,300,000,000)

Current United States of America population around (330,000,000) million people.

Only about 25% of Chinese population

330,000,000 / 1,300,000,000 = .253 = 25.3%

6. If the carrying capacity for the large fish (trout) population is 10, can the pond's trout population temporarily exceed 10 fish?

7. Topic #12: Conservation biology

What can people do to help Earth stay clean and healthy for us and other species that live here?

*Laws to protect endangered species and their habitats (1973) EPA

*Rules and regulations for hunting/fishing

*National and state parks Environmental Protection Agency

*Animal sanctuaries and hospitals

***Using clean sources to generate energy such as sunlight, wind and water opposed to fossil fuels like (coal, oil and natural gas)** Carbon #6

*Not polluting

*Recycling so our garbage doesn't end up in a land fill

*Zoos and aquariums?

8. *Do you think zoos and aquariums are good places?

*Why do think wild animals held in captivity sometimes lash out and injury their trainers or guests at park?

Is it a good idea to hold animals in captivity within zoos and aquariums forever, without any hope of being introduced or reintroduced into the wild. Why or why not?

*Youtube - Damian Aspinall is a billionaire conservation biologist from England who believes in returning all captive animals to the wild. He owns over 1 million acres of land in Africa that is ran like a National Park.

Is this a good idea, why or why not?

9.
Youtube video Human + Gorilla reunite after 5 years

After rehabilitating several gorillas at his mansion in England he then released them to his 1 million acre animal reserve. After 5 years do they recognize Damien? Notice Damien as a child, no wonder he cares about nature and isn't afraid of these powerful, intelligent animals.. WOW

10.

Symbiosis - relationship between two different species

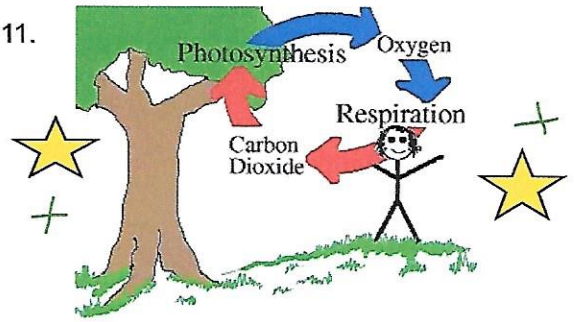
Mutualism (+,+)
Commensalism (+,0)
Parasitism (+,-)

Different types of symbiosis

*Symbiosis Brainpop - with quiz

What type of relationship do people and plants have?

11.



*Review the three symbiotic relationships among different species.

Mutualism (+,+)
Commensalism (+,0)
Parasitism (+,-)

12.

*Define: Ecological Succession, Primary Succession, Secondary Succession, Pioneer Species and Climax Community

Read pages 64-67 in Ecology textbook

This ends the life science binder you made.

13. **Ecological succession**- the ability of an ecosystem to rebuild itself after a disturbance.

Primary succession- the ecosystem begins rebuilding on "bare rock" such as after a volcano.

Secondary succession- the ecosystem begins rebuilding with soil already present such as after a forest fire.

Pioneer species- first species to rebuilding the ecosystem.

Climax community- the ecosystem has returned to stability.

14.

1) If there was a volcano (like in Hawaii now) and the ecosystem had to rebuild what type of ecological succession would it be, explain?

2) If there was a forest fire and the ecosystem had to rebuild what type of ecological succession would it be, explain?

3) The first plant species to start rebuilding the ecosystem after the disturbance are known as _____.

Are these simple or complex plants?

4) When the ecosystem is rebuilt and balance has been restored it has reached what ecologists call _____.

15. *Biologists develop strategies to protect species from direct harm and also protect their habitats.

*In response to many species of plants and animals going extinct the United States Congress passed the U.S. Endangered Species Act of 1973 which made it illegal to harm, collect or disturb any endangered species or it's habitat.

*This law from Congress helped save species like the American bald eagle and American alligator.

16.

Habitat restoration is the process of fixing a damaged habitat.

Captive population is when species are taken from the wild, cared for by humans, and then usually reintroduced to the wild when conditions have improved or the population has increased.

17.

*The United States first national park was Yellowstone National Park in 1872.

*There are also state parks such as Allegheny State Park in New York to protect wildlife.

18. Page #66 Ecology textbook (forest fire in Yellowstone)

Natural ecological succession with human help repaired this beautiful ecosystem!

19.
-What are natural resources?

-Nonrenewable natural resources (fossil fuels)

-Renewable naturals resources ☺

*Fossil fuels Brainpop with quiz

*Greenhouse gases leads to climate change
↳ Carbon dioxide CO_2
↳ Methane CH_4 – Why?

20. **Nonrenewable Resources:**
Natural resources we will eventually run out of.

- Oil
- Coal
- Natural Gas

> Fossil Fuels – Made from Carbon

*Fossil fuels are created as the result of dead plants and animals that have changed by heat and pressure over time, leaving their carbon behind

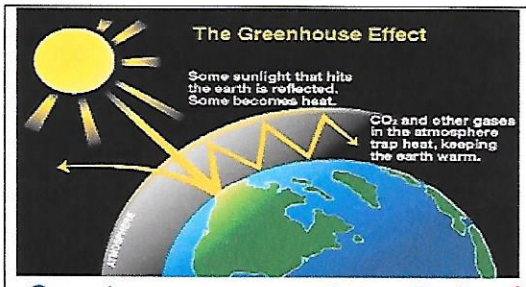
*Fossil fuels cause pollution and greenhouse gases when we burn them to create energy.

21. $ ☺
Renewable Resources: natural resources that will last forever.

Sunlight, water and wind

Using clean, renewable resources to create energy causes less pollution, creates less greenhouse gases and they are sustainable into the future.

22.



Greenhouse gases – CO_2 Carbon dioxide
CH_4 Methane

23.
Why is it better to use renewable resources for energy rather than nonrenewable resources?

It is better to use renewable resources to produce energy because they don't cause as much pollution, they don't create greenhouse gases which are warming the Earth and we'll never run out of them.

24. What are the effects of burning fossil fuels on Earth's environment?

*Burning fossil fuels such as oil, coal and natural gas create pollution and release greenhouse gases into the atmosphere such as carbon dioxide (CO_2) and methane (CH_4)

*These gases trap the sun's heat and warm the planet.

*The pollution caused by burning of fossil fuels can cause acid rain.

Natural Resources Quiz

Name: _____
Date: _____
Class: _____

1. 

Why are trees considered natural resources?

a. They provide valuable shade that no other resource can provide.
b. Humans use them to produce paper, lumber, fuel, and other products.
c. They are an important source of firewood for campfires.
d. They grow back after they're cut down.

2. Which of these is a factual statement about natural resources?

a. Someday, humans will run out of fossil fuels
b. Using wind energy will make us feel better about ourselves
c. As soon as they're available, everyone should drive solar-powered cars
d. Fuel cells are the most important technology we've ever developed

3. Which is the most likely reason why soil erosion can be a major problem?

a. Soil contains expensive minerals
b. A region's agriculture can be destroyed if the soil erodes
c. Soil is a non-renewable resource
d. Dangerous, radioactive elements exist under the soil

4. Why isn't glass considered a natural resource?

a. It isn't used by humans.
b. It's non-renewable.
c. It's not found in nature.
d. It has a limited number of uses.

5. What is the key difference between renewable and non-renewable resources?

a. All non-renewable resources pollute the environment; renewable resources don't.
b. Non-renewable resources must be refined before humans can use them; renewable resources don't.
c. Non-renewable resources exist in unlimited quantities; renewable resources don't.
d. Non-renewable resources exist in limited quantities; renewable resources don't.

6. What can you conclude from the fact that lots of research is being done into wind and solar energy?

a. In the future, these technologies may be far more sophisticated and efficient
b. We don't really know how solar and wind energy can be used to produce electricity
c. These technologies are too complicated to be widely used
d. These technologies will someday be more expensive

7. Which of the following is the most sensible way to conserve natural resources?

a. Stop using electricity entirely.
b. Bike or walk to school instead of taking a gasoline-powered car.
c. Don't use any products made from trees.
d. Never ride in a car.

8. Since it's not in limited supply, solar energy is considered a sustainable energy source. What does "sustainable" mean?

a. Capable of being continued long-term
b. Available to everyone
c. Related to light and heat
d. Related to the sun

9. 

How does recycling conserve natural resources?

a. It allows us to re-use products instead of manufacturing new ones.
b. It prevents garbage from being burned.
c. It saves on the amount of fuel used by garbage trucks.
d. It saves on the amount of plastic used to manufacture garbage bags.

10. 

Why is wind energy considered a renewable resource?

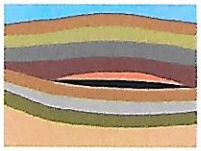
a. It can be found in a variety of places.
b. It costs little to harness.
c. The wind can blow incredibly fast.
d. It's unlikely that we'll run out of wind.

Fossil Fuels Quiz

Name: _____
Date: _____
Class: _____

1. How is natural gas different from coal?

a. Natural gas is a renewable resource; coal is a fossil fuel
b. Natural gas is a form of petroleum; coal is extracted from coal deposits
c. Coal is a form of petroleum; natural gas is emitted by volcanoes
d. Coal is a fossil fuel; natural gas is a renewable resource

2.  **Why are the remains of ancient organisms buried so deeply within the earth? Choose the best answer.**

a. They were swallowed up by major earthquakes
b. Most ancient organisms lived underground
c. They were buried by the meteor strike that killed the dinosaurs
d. They were buried by natural processes

3. What force is important in the creation of both coal and petroleum?

a. Putrefaction
b. Petrification
c. Pressure
d. Oxidation

4. How long does it take decaying organisms to transform into fossil fuels?

a. Decades
b. Millions of years
c. Thousands of years
d. Hundreds of years

5. How are fossil fuels taken from the earth?

a. Skimmed off the surface of the ocean
b. Through underground combustion
c. Through deep wells and mines
d. Brought to the surface using water

6. Which of the following is most likely to use coal as fuel?

a. Car
b. Stove
c. Airplane
d. Factory

7. Which of these is an advantage of fossil fuels?

a. They do not require much processing
b. You can extract them without complicated machinery
c. Burning them does not have any negative side effects
d. There is an unlimited supply of them

8. Why is burning fossil fuels bad for the environment?

a. It destroys the ozone layer
b. It adds harmful mercury to waterways
c. The clouds it creates bring excess rain and flooding
d. The gases emitted lead to global climate change

9. The gases produced by burning fossil fuels usually contain which element?

a. Carbon
b. Oxygen
c. Hydrogen
d. Nitrogen

10. How much of the world's energy comes from renewable resources?

a. Less than half
b. More than half
c. All
d. None

Conserving Energy Quiz

Name: _____
Date: _____
Class: _____

1. Coal and oil are examples of _____ resources.

a. Non-natural
b. Non-efficient
c. Non-polluting
d. Non-renewable

2. In January and February, you should set your thermostat to about 68 degrees Fahrenheit. What can you infer about the prefix "thermo?"

a. It refers to heat
b. It refers to electricity
c. It refers to the winter
d. It refers to devices that burn fossil fuels

3. What might happen if we continue burning fossil fuels at the rate we do today? Choose the best answer.

a. The cost of fossil fuels may drop
b. Fewer and fewer oil wells and coal mines may be constructed
c. The earth's climate may change rapidly
d. Automobiles will become less fuel-efficient

4. Weatherstripping will allow you to use less of which appliance?

a. 
b. 
c. 
d. 

5. Which of the following processes consumes the least energy?

a. Turning a tree into paper products
b. Extracting oil from the ground and turning it into a plastic jug
c. Recycling an old glass bottle so it can be used again
d. Mining aluminum and shaping it into a soda can

6. You can save money by avoiding disposable items. Which of the following is a disposable item?

a. 
b. 

c. 
d. 

7. During the winter, insulation functions much like:

a. A warm jacket
b. A space heater
c. A hot beverage
d. A pot of boiling water

8. How is a compact fluorescent light bulb different from a conventional bulb?

a. It is much smaller
b. It emits less light
c. It consumes less power
d. It doesn't last as long

9. Which of the following is the most energy-efficient form of transportation?

a. A hybrid car
b. A city bus
c. A diesel train
d. A bicycle

10. 

What does it mean when a product has an Energy Star seal? Choose the best answer.

a. It draws power from renewable energy sources only
b. It uses less energy than comparable products
c. It is safe to use inside your home
d. It is made out of recycled parts

National Parks Quiz

Name: _____
Date: _____
Class: _____

1. An area would most likely be declared a national park because of its:

a. Vast size
b. Diversity of industries
c. Sparse population
d. Spectacular hot springs

2. National parks protect endangered species from:

a. People
b. Predators
c. Conservationists
d. Natural disasters

3. What is true of industrial development in 19th century America?

a. It expanded rapidly to support the growth of the nation
b. Farms replaced factories as the drivers of the economy
c. It was centered mainly on the country's west coast
d. It was kept in check with strong federal laws

4. How did westward expansion contribute to the establishment of the first national parks?

a. Explorers set off to search for untouched areas to protect
b. Settlers marked off large areas for protection as they moved west
c. Depletion of natural resources caused concern over land use
d. American Indians campaigned to reclaim their former homelands

5. What lesson could be learned from the example of Niagara Falls?

a. Conservation is more profitable than tourism
b. Private developers are not to be trusted
c. Canadians care more for the environment than Americans
d. Overdevelopment can destroy natural wonders

6. Why do eastern states have so few national parks compared to western states?

a. Eastern states had less public land when the idea of the parks took hold
b. Western states are prettier than eastern states
c. Western states are the biggest states in the country
d. Local interests in eastern states were more successful at opposing conservation efforts

7. Order the following figures from most to least interested in protecting natural lands: A) conservationist; B) developer; C) preservationist

a. B, A, C
b. A, C, B
c. C, A, B
d. C, B, A

8. Both John Muir and Theodore Roosevelt likely would have supported which of the following actions?

a. Designate a forest as a protected area
b. Prohibit mining in all protected areas
c. Authorize construction of a dam in a protected area
d. Discourage tourists from visiting a protected area

9. Theodore Roosevelt accomplished which of the following?

a. Established Yellowstone National Park
b. Banned hunting in all lands under federal protection
c. Greatly expanded protected areas in the U.S.
d. Founded the National Parks Service

10. How do national parks fulfill the American Indian proverb: "We do not inherit the land from our ancestors; we borrow it from our children?"

a. They inspire kids to spend more time outdoors
b. The fate of the parks is in the hands of younger voters
c. Teenagers are the top age group among park visitors
d. They preserve the land for future generations

Population Growth Quiz

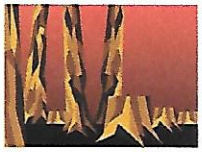
Name: _____
Date: _____
Class: _____

1. What might happen if the earth exceeds its carrying capacity?

a. There might not be room for people to move around.
b. There might not be enough food and water for everyone.
c. The continents might sink into the oceans.
d. Most of the people on the planet would starve.

2. Which of the following describes a population?

a. The total number of people, animals, and plants in New York City
b. The total number of houses in Atlanta
c. The total number of people living in the state of Texas
d. The total number of fish in all the world's oceans

3.  **Which of the following is a true statement about deforestation?**

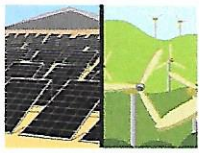
a. Once trees are cut down, they can never grow back again
b. Trees provide humans with the carbon dioxide we need to breathe
c. Animals lose their habitats when too many trees are cut down
d. Wood and paper products cannot be recycled

4. If the world population keeps growing at its current rate, how many people might be alive in 10 years?

a. 14 million
b. 22 billion
c. Between 7 and 8 billion
d. 1.5 trillion

5. Which of the following would be a good step to take to reduce the waste you produce?

a. Ask your parents to buy you your own car
b. Try to reduce your consumption of electricity and fuel
c. Use only electric appliances in your home
d. Only buy products with vacuum-sealed plastic packaging

6.  **Why are solar and wind power considered alternative energy sources?**

a. They are an alternative to non-renewable energy sources like fossil fuels
b. They are used by people in alternative communities
c. They use alternating current instead of direct current
d. You can alternate between using solar power during the day and wind power at night

7. Why would advances in medicine lead to population growth?

a. Curing deadly diseases allows people to live longer
b. People are unable to have babies without medical help
c. Babies do not grow if they don't take their medicine
d. New drugs allow mothers to have multiple births, like octuplets

8. Before 1800, the infant mortality rate was much higher than it is now. What does that mean?

a. People didn't have a lot of babies before 1800
b. Children did not grow very tall before 1800
c. Most women were unable to have babies before 1800
d. A lot more babies died during childhood before 1800

9. How can population growth lead to more pollution?

a. Too many people breathing causes too much carbon dioxide to enter the atmosphere
b. The body heat generated by billions of people leads to an increase in global warming
c. More people being born means more paper is needed to print birth certificates
d. All people produce waste, so more people equals more waste

10. Which of the following terms best describes the current rate of world population growth?

a. Slack
b. Leisurely
c. Gradual
d. Rapid

Greenhouse Effect Quiz

Name: _____
Date: _____
Class: _____

1. Which of the following is a greenhouse gas?

a. Oxygen
b. Nitrogen
c. Methane
d. Hydrogen

2. 

What's one major difference between the earth's greenhouse effect and an actual greenhouse?

a. Heat escapes from a greenhouse more easily than it does from Earth's atmosphere
b. The glass in a greenhouse traps heat, while greenhouse gases in the atmosphere absorb and recycle heat
c. Actual greenhouses are cold in winter, while the greenhouse effect has led to warm winters across the earth
d. There is no significant difference; both work pretty much the same way

3. What happens to most solar radiation when it reaches the surface of the earth?

a. It reflects right back into space
b. It's collected in solar panels
c. It's soaked up by land, water, and plants
d. It disperses throughout the earth's atmosphere

4. In what form is radiation emitted from the earth's surface back into the atmosphere?

a. As light
b. As greenhouse gases
c. As gamma rays
d. As heat

5. What might happen if the greenhouse effect didn't exist?

a. It would be too cold for humans to survive on the earth
b. The earth's temperature would be much more comfortable
c. The sun's rays would never reach the surface of the earth
d. The earth wouldn't have an atmosphere

6. What can you infer from the fact that global warming has only been a problem for the last 100 years or so?

a. Prior to 100 years ago, the greenhouse effect on the earth was too minor to be detected.
b. The earth moved significantly closer to the sun about 100 years ago.
c. People have only been pumping large quantities of greenhouse gases into the atmosphere for 100 years or so.
d. The movement of glaciers was a major problem for people 100 years ago.

7. 

How can global warming cause sea levels to rise? Choose the best answer.

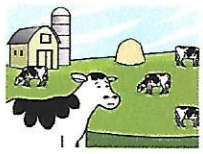
a. By causing it to rain more often
b. By melting glaciers and polar ice caps
c. By increasing the number of undersea volcanic eruptions
d. By creating bigger and more powerful hurricanes

8. Why does cutting down trees increase global warming?

a. Trees soak up carbon dioxide from the air.
b. Trees provide shade, which counteracts global warming.
c. Trees absorb the sun's energy without radiating it back into the atmosphere.
d. Trees drain greenhouse gases like methane from the soil.

9. Which of the following is an example of a fossil fuel?

a. Firewood
b. Dead leaves
c. Seashells
d. Gasoline

10. 

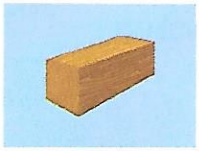
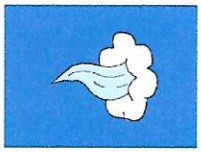
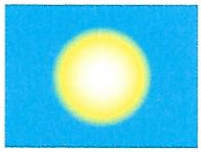
What effect do cows and other livestock have on global warming? Choose the best answer.

a. They eat trees and grass, which adds to global warming
b. Their digestive systems produce methane, a powerful greenhouse gas
c. Humans use lots of fossil fuels to cook the meat they produce, adding to global warming
d. Livestock have high body temperatures and emit infrared radiation, adding to global warming

Humans and the Environment Quiz

Name: _____
Date: _____
Class: _____

1. Which of the following is an example of a nonrenewable resource?

a. 
b. 
c. 
d. 

2. Which of these is an opinion about deforestation?

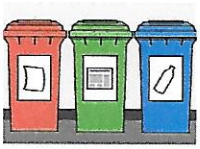
a. It can cause animals to lose their habitats
b. It's a serious crisis that our government should try to stop
c. It happens because people use wood to make paper and lumber
d. Deforestation destroys important sources of oxygen

3. What can you conclude from the fact that the human population is so much larger today than it was 200 years ago?

a. Most people chose not have children 200 years ago
b. People 200 years ago killed one another frequently
c. People 200 years ago had better medicine than we do today
d. People today live longer, healthier lives than 200 years ago

4. The human population has experienced unchecked growth for the past 200 years. What does "unchecked" mean?

a. Slow
b. At a steady rate
c. Unrestrained
d. Dangerous

5. 

Which of the following is a true statement about recycling?

a. Recycling allows resources to be reused, instead of dumped in landfills.
b. Recycled products emit oxygen into the atmosphere.
c. Recycling causes the earth to cool down, instead of warm up.
d. Recycling turns non-renewable resources into renewable ones

6. Place the following events in sequence: A) The world population reaches 6 billion; B) The Industrial Revolution begins; C) People begin packaging things in plastic

a. C, B, A
b. A, C, B
c. B, A, C
d. B, C, A

7. What is one negative effect of landfills?

a. Global warming
b. Water pollution
c. Air pollution
d. Deforestation

8. What do carbon dioxide and methane have in common?

a. They are gases created when wood is burned
b. They are gases that regularly escape from landfills
c. They are gases that contribute to global warming
d. They are examples of non-renewable resources

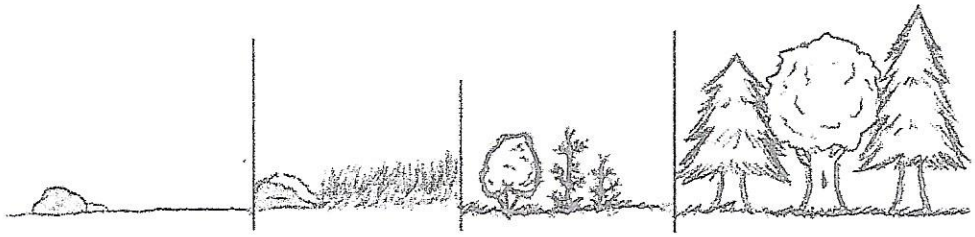
9. Which of the following can decrease the use of fossil fuels?

a. Turning your lights off when you're not using them.
b. Recycling newspapers.
c. Cleaning up the garbage in your neighborhood.
d. Turning up your thermostat whenever you feel chilly.

10. What is one way that you can use your voice to make environmental changes? Choose the best answer.

a. Ask your parents or guardians to use clean energy.
b. Buy stuff with protective plastic packaging.
c. Encourage your parents or guardians to drive cars to work, instead of taking buses or trains.
d. Stop using all paper products.

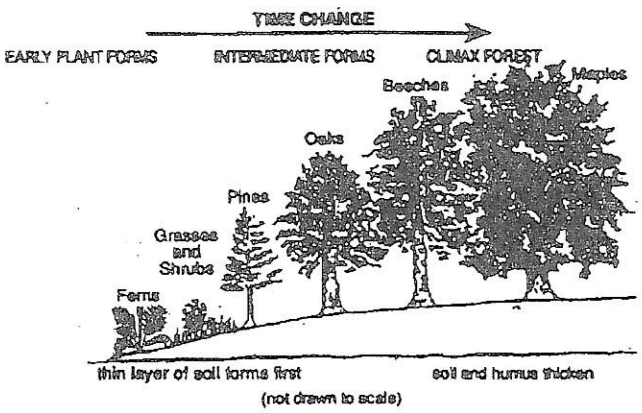
1. The diagram below shows how a plant community changed over 250 years.



What process caused the gradual changes shown in this plant community?

A. Global warming
B. Pollution
C. Ecological succession
D. Urban growth

2. After a forest fire, grasses and small shrubs begin to grow. Eventually, trees grow back. This is an example of

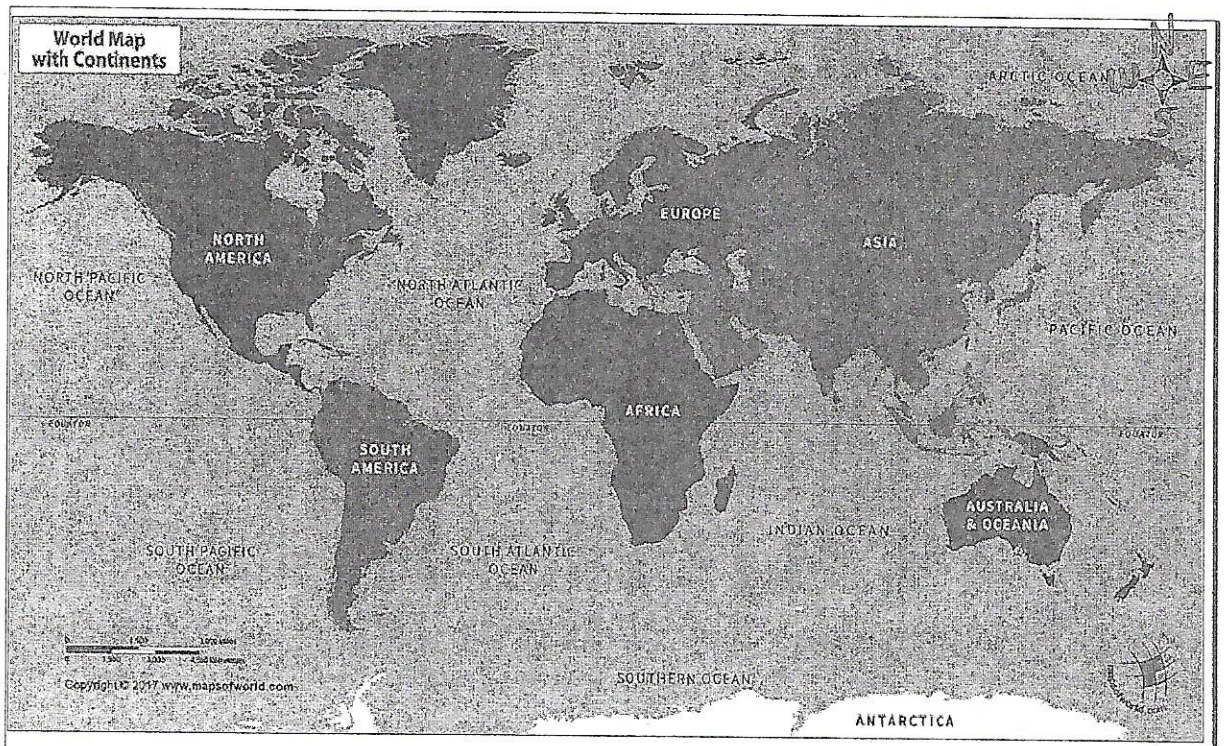


Ecological Succession

A. a limiting factor
B. secondary succession
C. carrying capacity
D. primary succession

- Primary Succession
  * starts on bare rock
- Secondary Succession
  * Soil is already present

"life finds a way"
- Jurassic Park
1993



What are the names of the 7 continents?

1. North America
2. South America
3. Europe
4. Africa
5. Asia
6. Australia
7. Antarctica

What are the names of the 5 oceans?

1. Atlantic Ocean
2. Pacific Ocean
3. Indian Ocean
4. Arctic Ocean
5. Antarctic Ocean (Southern Ocean)

Name: _____ Class: _____ Date: _____ ID: A

Preserving Earth's Ecosystem

Matching

Please match each term with the correct definition

a. Renewable Resource
b. Restoration
c. Coal
d. Global Warming
e. Nonrenewable Resource
f. Acid Rain
g. Greenhouse effect
h. Water
i. Conservation
j. Extinction
k. Recycling
l. Deforestation
m. Erosion
n. Biodiversity

____ 1. an example of a nonrenewable resource

____ 2. resources that form at a rate that is much slower than the rate at which they are consumed

____ 3. the gradual increase in the average global temperature

____ 4. the warming of the surface and lower atmosphere of Earth that occurs when CO2 and other gases in the air absorb and reradiate heat back towards Earth

____ 5. an example of a renewable resource

____ 6. precipitation that has an unusually high concentration of sulfuric acid, which is caused by pollution

____ 7. are natural resources that can be replaced at the same rate at which they are consumed

____ 8. the process of reusing things instead of taking more resources from the environment

____ 9. the process of clearing forests which results in habitat destruction

____ 10. the death of every member of a species

____ 11. the variety of organisms in a given area

____ 12. involves protecting existing natural habitats ex. state parks

____ 13. involves cleaning up and restoring damaged habitats ex. Gulf of Mexico oil spill

____ 14. process which the materials of Earth's surface are worn away and transported by wind, gravity, or water