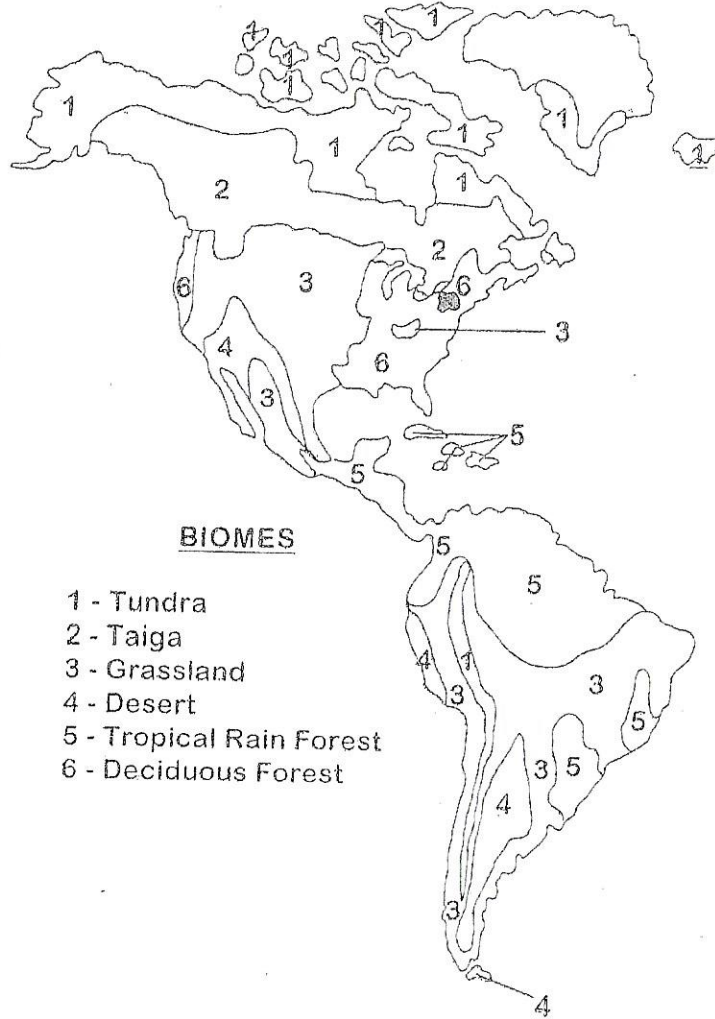


The World's Biomes

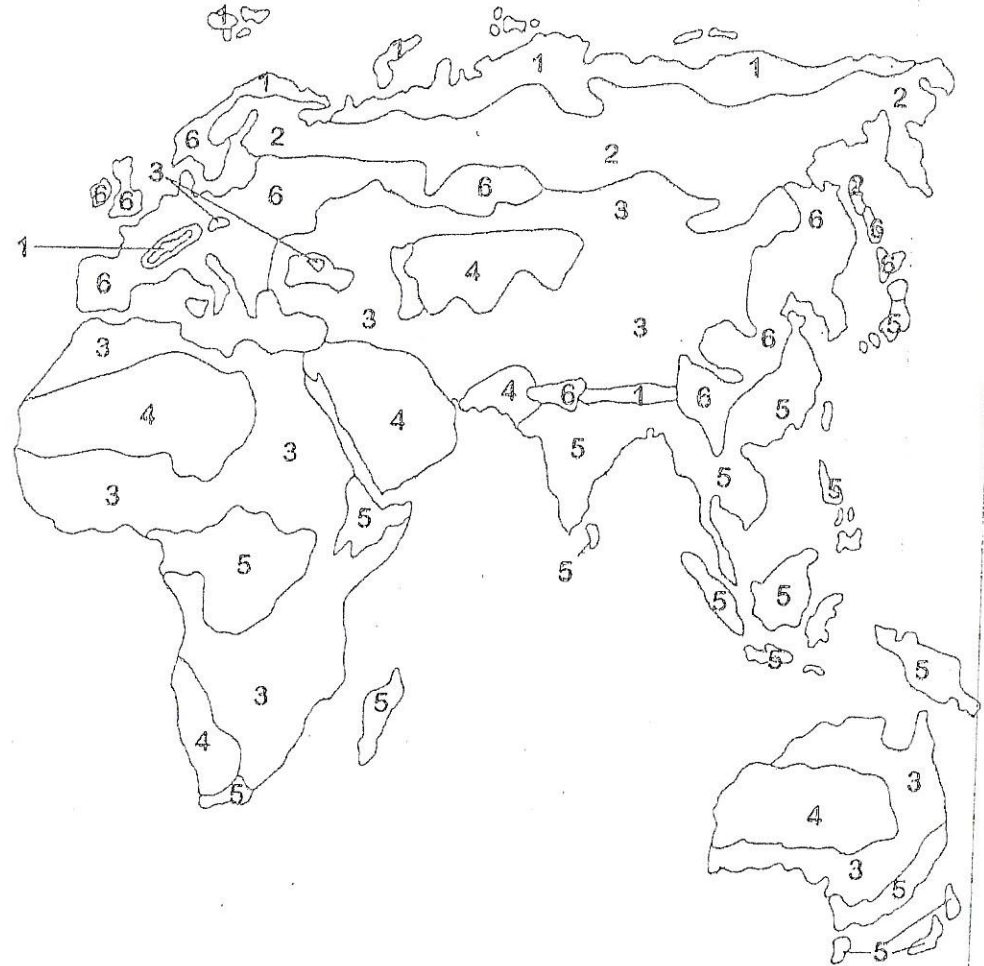
x = Niagara Falls, NY

Niagara Falls, NY is in which biome? _____



BIOMES

- 1 - Tundra
- 2 - Taiga
- 3 - Grassland
- 4 - Desert
- 5 - Tropical Rain Forest
- 6 - Deciduous Forest



Name _____

Date _____

Period _____

1. What is the best description of a biome?

- a. An interdependent system of plants, animals, and land.
- b. A system of trees, forests, and rivers.
- c. A habitat where large numbers of animals live.
- d. An area with significant amounts of rainfall.

2. Why are organisms so well-adapted to the conditions of the biomes in which they live? Choose the best answer.

- a. They have migrated to biomes that suit their biological needs
- b. They have slowly evolved to adapt to their environments
- c. They have killed off other, better-adapted species
- d. They have quickly changed their biological makeup to suit their environments

3. What might happen if you tried to plant a tree that is native to tropical rainforests in the tundra?

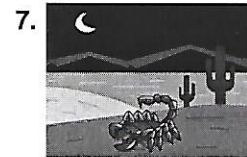
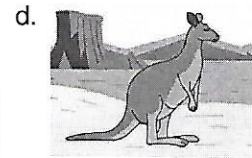
- a. The tree would quickly adapt to its new environment
- b. The tree would slowly evolve to adapt to its new environment
- c. The tree would probably die
- d. The tree would survive, but it probably wouldn't grow

4. Which term best describes the species you can find in a tropical rainforest?

- a. Few and far between
- b. Diverse and large in number
- c. Mainly trees, with few animals
- d. Large in number, but limited in diversity

5. In the movie, Tim says that temperate forests are found in "mid-latitude" areas. What does "mid-latitude" mean?

- a. Home to lots of trees
- b. Filled with fertile soil
- c. Subject to heavy rains
- d. Neither close to the equator nor close to the poles

6. Which animal might you find on the savanna, or grassland?**7. What can you infer about animals that live in the desert?**

- a. Most of them are quite large.
- b. Most of them are warm-blooded.
- c. Most are unable to withstand temperatures below 90 degrees Fahrenheit.
- d. Most can survive on very little water.

8. How is the taiga different from the tundra?

- a. Evergreen trees grow in the taiga; very little plant life grows in the tundra.
- b. Many animals live in the taiga; no animals live in the tundra.
- c. The taiga is very warm; the tundra is very cold.
- d. The taiga exists around the North Pole; the tundra exists around the South Pole.

9. Which word best describes the process by which biomes naturally change?

- a. Rapid
- b. Gradual
- c. Instantaneous
- d. Quick

10. How can people change biomes?

- a. By melting the permafrost with campfires.
- b. By cutting down trees and polluting the water.
- c. By raising different kinds of animals on farms.
- d. By using canoes and boats to navigate rivers.

Try water biomes Brainpop + Quiz too

The Tropical Rainforest: Plant and Animal Adaptations

Plants and animals living in the Tropical Rainforest must be able to adapt to the year round humidity and constant warm, humid and wet weather. The tropical rainforest contains the most species of plant and animal life, therefore there is immense competition for food and sunlight.

↳ lots of biodiversity

Plant Adaptations in the Tropical Rainforest Biome

The bark on the rainforest trees is thin which prevents other plants from growing on them and supports evaporation from the excess humidity. The leaves on most of the plants have what is called drip tips which help plants shed the excess moisture from the rainfall. The trees have long, very straight trunks and don't branch out until they reach the canopy where sunlight can be found. Leaves of plants and trees are very large to help them absorb as much of the sunlight as is possible. Some of the tropical Rainforest plants are actually carnivorous, which means they eat meat. They have an opening filled with nectar that will attract insects, such as ants and flies. Many flowering plants will grow on to trees in able to get sunshine (epiphytes).

Examples of Plants found in the Tropical Rainforest:

The tropical rainforest contains more species of plants than any other biome. Orchids, Philodendrons, Ferns, Bromeliads, Kapok Trees, Banana Trees, Rubber Trees, Bamboo, Trees, Cassava Trees, Avocado Trees.

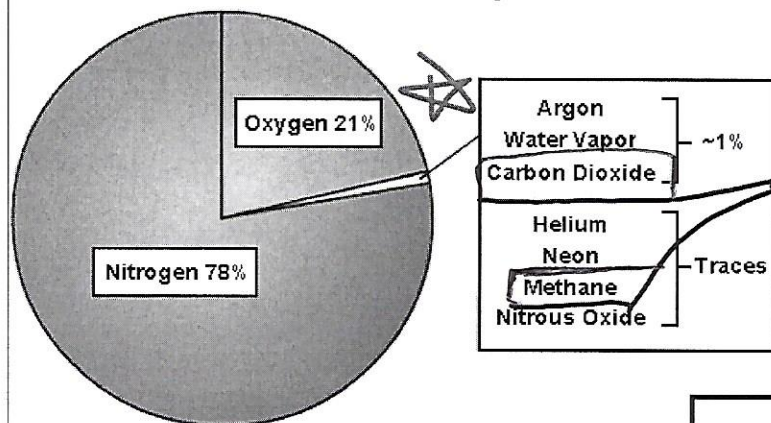
Animal Adaptations in the Tropical Rainforest Biome

Animals come in various colors which act as a camouflage to protect them from their predators. Many of the animals are able to move freely among the many trees which act as both food and shelter for them. Quite a few of the tropical rainforest animals are able to swim and cope with a wet and swamp like environment. Some animals (bats) are nocturnal which help them avoid the warmer daytime temperatures. Many of the birds have larger and stronger beaks. Some animals are poisonous which protect them from their predators. Due to the competition for food with so many animals, some animals are very specialized and only eat one type of plant or insect.

Examples of Animals found in the Tropical Rainforest:

The tropical rainforest contains more species of animals than any other biome and insects make up the largest group of animals. Anacondas, Monkeys, Toucans, Macaws, Herons, Jaguars, Pumas, Orangutans, Gorillas, Sloths, Parrots and Frogs.

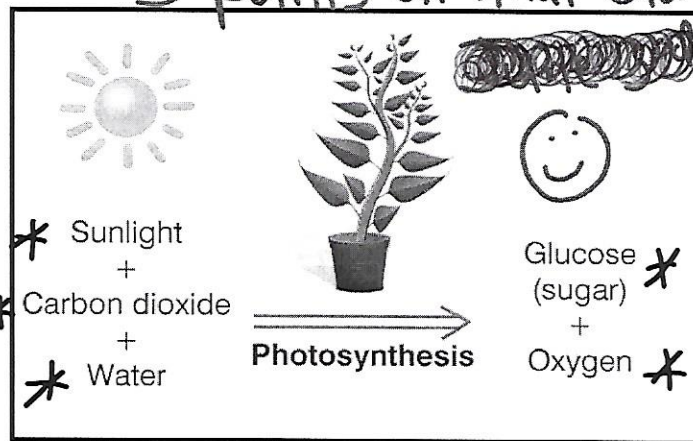
What is "air" comprised of?



Two greenhouse gases.

5 points on final exam

Remember plants soak up carbon dioxide (CO_2), and release oxygen through photosynthesis.



Name: _____

Date: _____

Class: _____

1. The Earth has a total land area of approximately 150 million square km. About how much is covered by rain forest?

- A. 1.5 million square km
- B. 10.5 million square km
- C. 15 million square km
- D. 50 million square km

1 km = .62 mile

2. Which statement is true?

- A. There are few animals that live in the rain forest, and they belong to a small number of species
- B. The population of animals in the rain forest is large and diverse
- C. Many animals live in the rain forest, but there are just a few species that can survive there
- D. There are many animal species living in the rain forest, but their populations are usually very small

3. What might happen to the earth's atmosphere if the rain forest disappeared?

- A. We'd have less oxygen and more carbon dioxide
- B. We'd have more oxygen and less carbon dioxide
- C. We'd have more oxygen and more carbon dioxide
- D. We'd have less oxygen and less carbon dioxide

4. The tropics can be found:

- A. Throughout the Pacific Ocean
- B. On every continent
- C. Only in the southernmost regions of the earth
- D. Near the equator

5. Which of the following can be found in the rain forest canopy?

- A. Burrowing insects
- B. Nutrient-rich soil
- C. The tops of tall trees
- D. Shrubs and ferns

6. What might you find on the rain forest floor?

- A. Nutrient-rich soil
- B. Mushrooms
- C. Food crops like wheat and corn
- D. The majority of animal species in the rain forest

7. The biggest threat to the rain forest comes from:

- A. Diseases that affect both animals and plants
- B. Parasitic plants, bacteria and fungi
- C. Human beings
- D. Large, predatory animals

8. What is the relationship between rain forests and medicine?

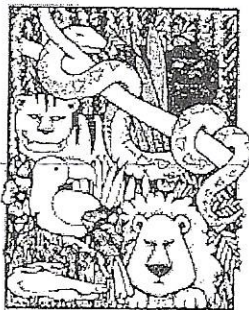
- A. Most diseases originate in rain forests
- B. The bacteria found in the rain forest are powerful antibiotics
- C. Vaccines can be made from the tissues of rain forest animals
- D. Medicines can be made from rain forest plants

9. The layer of rain forest between the canopy and forest floor is called:

- A. The understory
- B. The undercarriage
- C. The undergrowth
- D. The underbelly

10. In what country might you find a tropical rain forest?

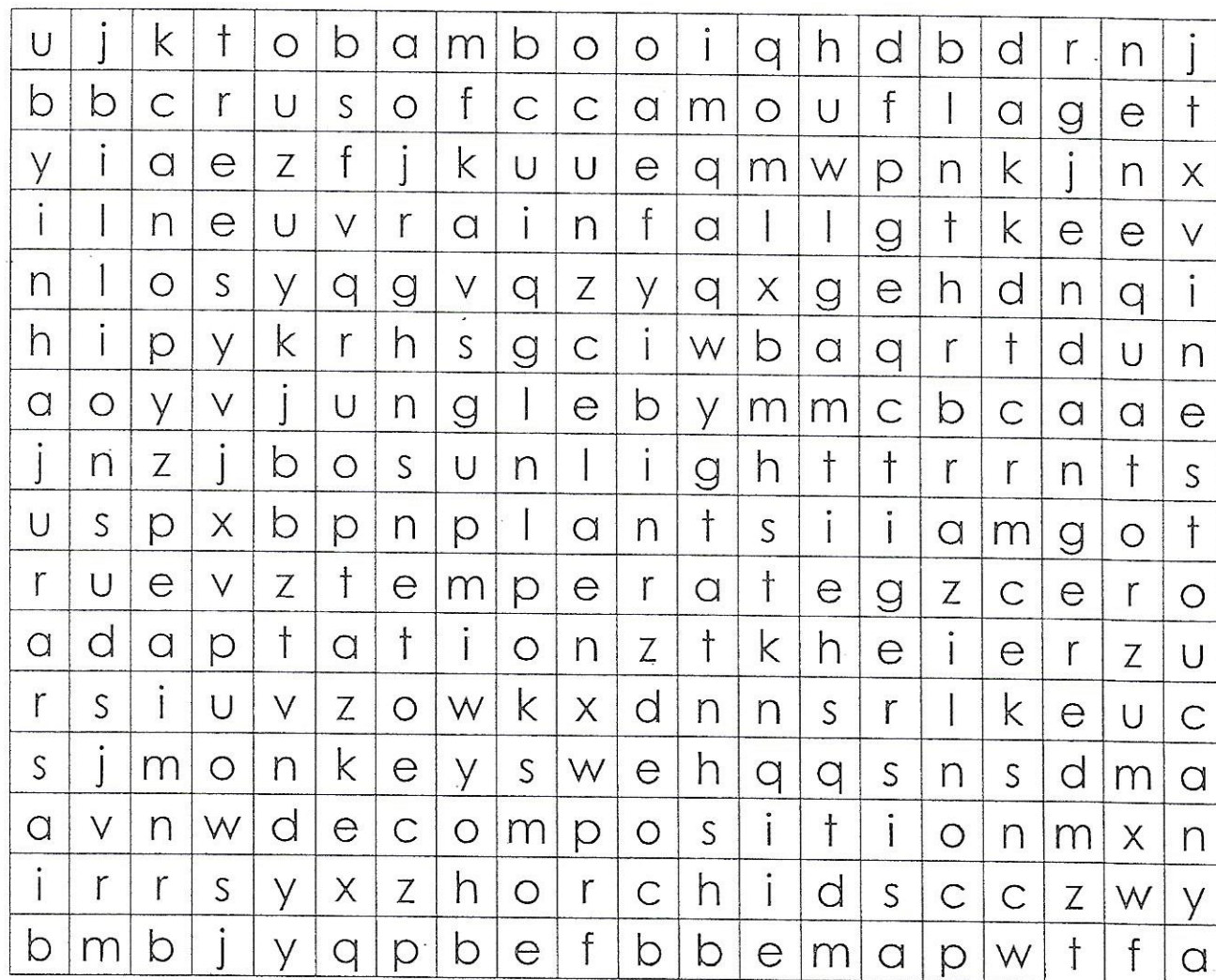
- A. South Africa
- B. Australia
- C. Brazil
- D. Italy



Name: _____

Tropical Rainforest Biome Word Search

At the bottom of the page is a list of words. These words are hidden in the puzzle. The words have been placed horizontally, vertically, or diagonally - frontwards or backwards. When you locate a word, draw a circle around it.



orchids	rainfall	canopy	temperate
brazil	sunlight	vines	monkeys
endangered	equator	plants	toucan
camouflage	tigers	jungle	billions
adaptation	decomposition	trees	bamboo

The Desert: Plant and Animal Adaptations

Plants and animals living in the desert must be able to adapt to extreme heat and dryness, and the desert's harsh environment. The deserts are very hot during the day but will cool during the evening. There is constant sunlight almost daily. Plants and animals also need to be able to adapt to strong winds, limited access to water and extreme temperatures. (The Antarctica is also considered a desert due to the lack of vegetation, however, it is not included here.)

Plant Adaptations in the Desert Biome

In order for plants to survive in the desert, they have adaptations that allow them to collect and store water and moisture and, prevent moisture loss. The plants in the desert biome store water in their roots, stem, leaves, or fruit. Plants called succulents store water in their stems or leaves. Some of the desert plants have roots that grow deep enough in the ground that they are able to reach the water. Small, spiny leaves of the desert plants prevent evaporation, helping them to retain moisture. Some plants have glossy leaves that will reflect the sun's rays which also help them retain moisture. Some plants have a short life cycle, they grow, flower, germinate and die within a year. Some plants will shrink in size during dry times which allow them to use the stored moisture. The plants are often slower growing types which require less energy (food and water).

Examples of Plants found in the Desert:

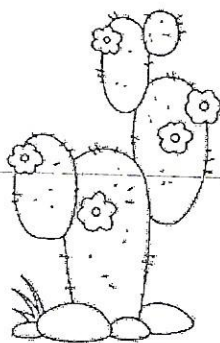
Sage Bushes, Creosote Bushes, Cacti, Lupine, Indian Paintbrush, Prickly Poppies, Chia, Ghost Flower, Desert Chickory, Prickly Pears, Dragon Trees, Desert Spoons.

Animal Adaptations in the Desert Biome

Animals of the desert need to adapt to intense heat and lack of water and shelters. Many of the desert animals are only active during the evening when the temperatures are cooler. Other animals burrow during the day to avoid the harsh conditions during the day. It is difficult for large animals to survive the desert due to the lack of shelter to hide from prey. Some animals don't need to drink water as they get all the water they need from the insects, plants and seeds that they eat. Many desert animals don't have sweat glands which lets them retain moisture eliminating the need to drink. Birds have feathers that keep them insulated from the strong heat of the sun. Some rodents have specialized kidneys that return their water to the bloodstream instead of losing it through urination.

Examples of Animals found in the Desert:

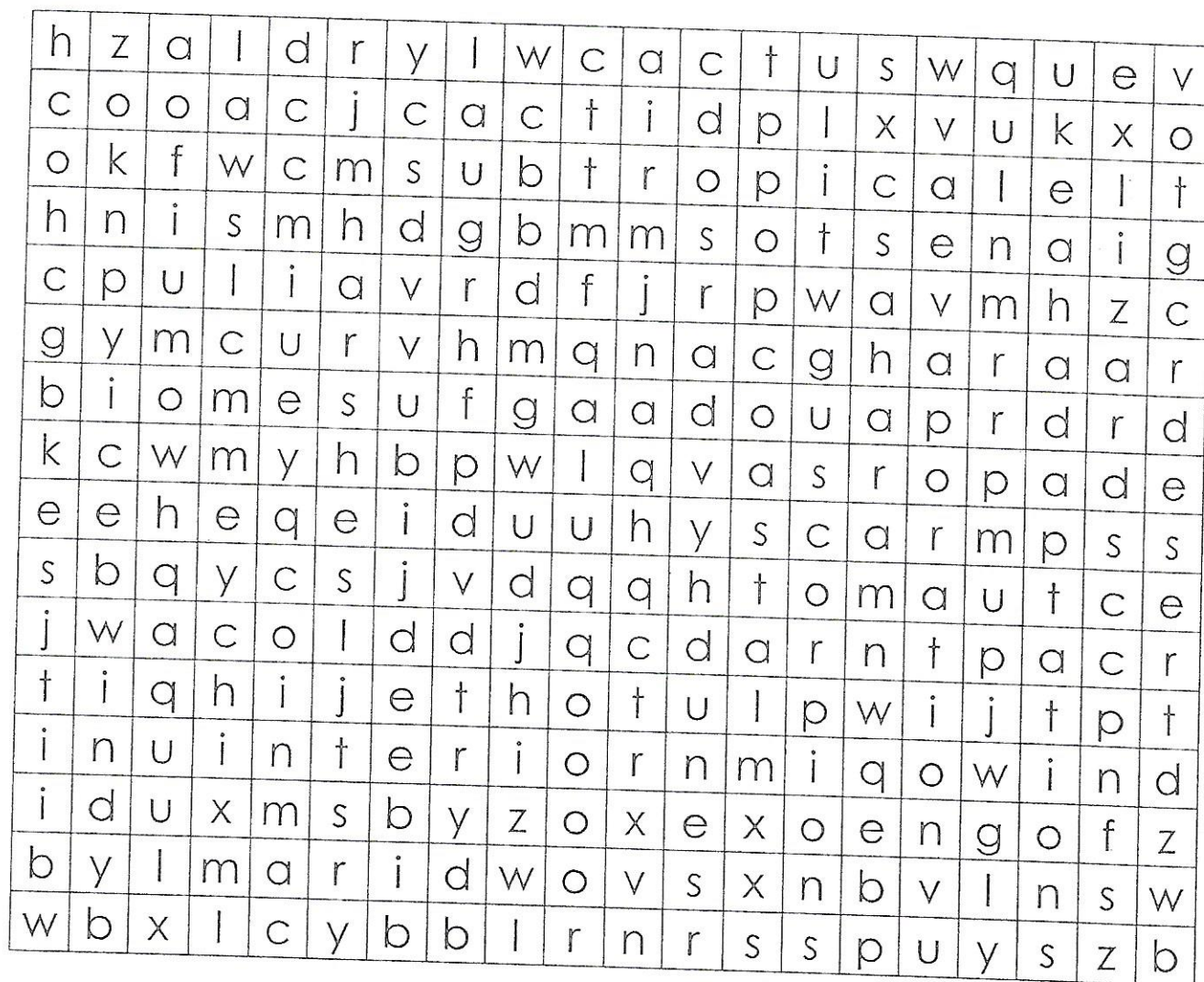
Desert animals include many reptiles, insects, birds and small mammals. Camels, Frogs, Lizards, Bobcats, Golden Eagles, Kangaroo Rats, Spadefoot Toads.



Name: _____

Desert Biome Word Search

At the bottom of the page is a list of words. These words are hidden in the puzzle. The words have been placed horizontally, vertically, or diagonally - frontwards or backwards. When you locate a word, draw a circle around it.



interior	coastal	cold	wind
arid	evaporation	cactus	hot
subtropical	sahara	cacti	lizards
dunes	desert	scorpions	adaptations
harsh	windy	dry	biome

1. What do all deserts have in common?

- a. They're all very hot.
- b. They all lack fertile soil.
- c. They are all very flat.
- d. They are all completely empty of human life.

2. A desert's climate is mostly determined by its:

- a. Latitude
- b. Size
- c. Population
- d. Vegetation

3. Which two factors keep the Sahara Desert hot?



- a. Distance from the ocean and very long summer days
- b. Volcanic activity and low-pressure air masses
- c. High-pressure air masses and direct sunlight
- d. Heat-absorbing soil and abundant hot springs

4. Which continent is virtually all desert?

- a. Africa
- b. South America
- c. Asia
- d. Antarctica

5. In which region can the air hold the most moisture?

- a. The North and South Poles
- b. The area around the equator
- c. Temperate zones, like most of the United States
- d. The tundra, which exists in northern Canada and Russia

6. What can you infer about penguins from the information presented in the movie?

- a. Their diet consists mainly of fish.
- b. They live in the coldest parts of Antarctica.
- c. They live alone, and not in groups.
- d. They are not true birds.

7. Compared to the Sahara Desert, the Gobi Desert is:

- a. Wetter
- b. Hotter
- c. Cooler
- d. Drier

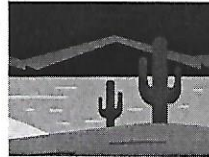
8. Antelope squirrels and scorpions are nocturnal desert animals. What can you conclude about them from this fact?

- a. They live in temperate deserts
- b. They live in cold deserts
- c. They live in the parts of deserts nearest to the ocean
- d. They live in hot deserts

9. Most animals in hot deserts can't:

- a. Drink liquid water
- b. Sweat
- c. Sleep
- d. Walk

10. The roots of cactuses:



- a. Are shallow, but cover a large area.
- b. Penetrate deep below the surface of the earth.
- c. Are extremely thick.
- d. Expel water into the ground.

The Grasslands: Plant and Animal Adaptations

Plants and animals living in the Grasslands must be able to adapt to the lack of trees and heavy brush for shelter as well as the seasonal drought and limited rainfall. Animals and plants must be able to adapt to the two seasons (summer and winter) of the Grasslands. Grasslands include prairies, steppes, plains and savannah. The Grasslands are on every continent with the exception of Antarctica.

Plant Adaptations in the Grasslands Biome

Plants have many adaptations to survive the Grasslands Biome. The plants have deep, spreading root systems that allow them strength and moisture during times of drought. Most of the plants have long narrow leaves that don't need as much water. The grasses grow from the bottom and grow close to the ground. They have strong roots which means they won't be destroyed when animals walk on them or eat them. Grasslands are susceptible to fires but the plants hearty root system enables them to survive fires and soon after a fire, they will begin sprouting. The softer stems allow the plants to bend rather than break in the Grassland winds. Many of the plants are pollinated by the windy conditions of the Grassland. Some of the grasses and bushes have attractive blossoms which attract insects to pollinate them.

Examples of Plants found in the Grasslands:

There are two main types of plants in the Grasslands, grasses and shrubs. There are thousands of types of grasses in the grasslands. Prairie Rose, Gumweed, Gumbo Primrose, Spiderwort, Golden Rod, Clover, Wild Indigo, and Coneflower.

Animal Adaptations in the Grasslands Biome

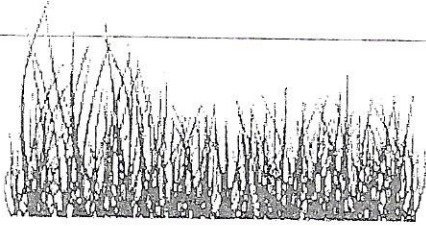
Many Grassland animals are very fast which helps them escape predators and others are camouflaged in their outer layer which protects them from their prey. It's felt that many of the animals are only active during the rain season. Many of the Grassland animals are herbivores and will graze on the grasses found in the Grasslands. Many grazing animals have developed digestive systems that enable them to survive on grasses. Smaller animals in the Grasslands hide easily in the grasses. Some prairie animals have front paws and leg that help them to burrow into the ground. Many Grassland animals are nocturnal which means they are only active at night and are concealed from predators during the day.

Examples of Animals found in the Grasslands:

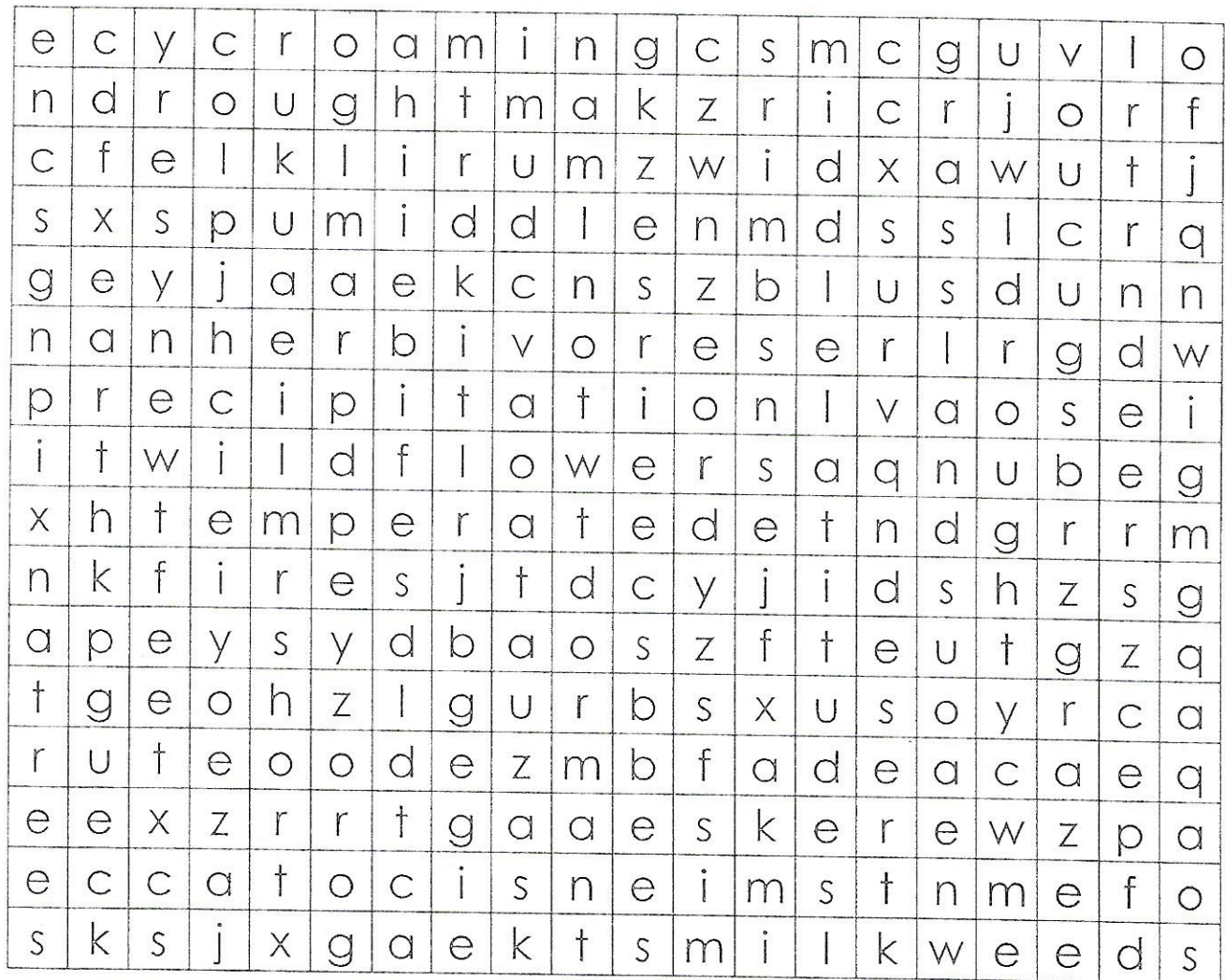
Wildebeest, Prairie Dogs, Insects, Bison, Zebras, Elephants, Giraffes, Lion, Brown Hyena, Warthog, Ostrich, Bumble Bees, Coyotes, Elk, Kangaroos.

Name: _____

Grasslands Biome Word Search



At the bottom of the page is a list of words. These words are hidden in the puzzle. The words have been placed horizontally, vertically, or diagonally - frontwards or backwards. When you locate a word, draw a circle around it.



precipitation	trees	middle	wildflowers
bees	fires	middlelatitudes	roaming
herbivores	milkweeds	deer	graze
grasslands	temperate	drought	earth
dormant	drought	short	desert

1. Which area of the United States is most similar to a savanna?

- a. The temperate forests of the Northeast
- b. The deserts of the Southwest
- c. The prairies of the Midwest
- d. The swamps of the Southeast

2. At which latitude would you be most likely to find a savanna?

- a. 45 degrees south latitude
- b. 15 degrees north latitude
- c. 60 degrees south latitude
- d. 90 degrees north latitude

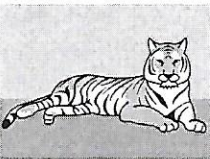
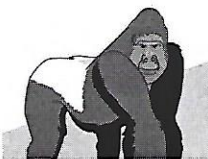
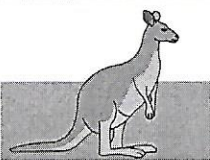
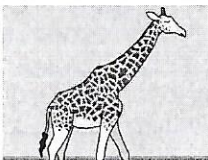
3. Water in the savanna tends to be concentrated in:

- a. Rivers
- b. Lakes
- c. Inland seas
- d. Ponds

4. Which phrase best describes summer in the savanna?

- a. Long and wet
- b. Short and dry
- c. Long and dry
- d. Short and wet

5. Which of the following is a mammal that can be found on the savanna?

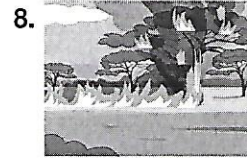
- a. 
- b. 
- c. 
- d. 

6. In the movie, Tim and Moby are intimidated by a lion. These animals can be dangerous because they are:

- a. Predators
- b. Felines
- c. Nocturnal
- d. Herbivores

7. During which season are wildfires common on the savanna?

- a. Winter
- b. Spring
- c. Summer
- d. Fall



8. What is one major effect of wildfires on the savanna?

- a. A lack of wildlife
- b. A lack of grass
- c. A lack of water
- d. A lack of trees

9. How is the grass on the savanna different from the grass on your school's front lawn?

- a. Savanna grass is much greener
- b. Savanna grass is much higher
- c. Savanna grass lives much longer
- d. Savanna grass cannot catch on fire

10. What do savannas and rainforests have in common?

- a. They are both home to very large apes
- b. They can both be found in Australia
- c. They are both located in tropical regions
- d. They both contain many trees

The Taiga: Plant and Animal Adaptations

Plants and animals living in the Taiga must be able to adapt to cold winters with snow, warm summers and a relatively short growing seasons. There is some permafrost and layers of rock just below the surface in some parts of the taiga making drainage difficult. The Taiga Biome receives limited precipitation but it has many lakes and swamps that will attract birds. The soil is quite acidic and has few minerals. It is covered by a deep layer of partially-decomposed conifer needles.

Plant Adaptations in the Taiga Biome

The Taiga, also referred to as the Boreal Forest has mostly evergreens / conifer trees which contain needles. Needles will retain moisture and shed snow. The waxy coating on the tree needles prevents evaporation. The darkness of the needles helps to attract more sun. Many of the branches on evergreen trees droop down allowing the shedding of snow. The seeds, which allow for reproduction are found within the protective cones of the evergreen trees. The roots of the confers will grow downwards which protects the trees from the winds that can be harsh at times in the Taiga's winters.

Examples of Plants found in the Taiga:

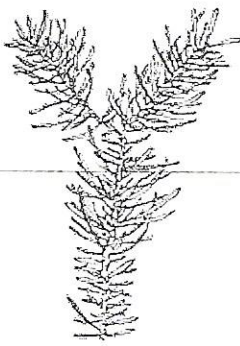
Conifers (Evergreen, Spruce, Fir and Pine) Blueberry Bushes, Cowberry Bushes, Bilberry Bushes, Lichens, Mosses, some Maple, Elm, Willow, and Oak trees.

Animal Adaptations in the Taiga Biome

Animals have many adaptations to survive the Taiga Biome. Many birds of the Taiga will migrate south to avoid the cold winters. Other animals will burrow underground (rodents, shrews). The Snowshoe Hare adapts by changing color according to the season as a type of camouflage (brownish in the summer and white in the winter) to protect itself from predators. Many of the birds will feed upon the conifer seeds and berries. Birds like the geese, water fowl, woodpecker and ducks will migrate south to avoid the long, cold winter. Some of the animals of the Taiga will store extra layers of fat and fur to help keep them warm over the cold winters. Many of the animals have developed large feet or hooves to help them move in the often deep and abundant winter snow.

Examples of Animals found in the Taiga:

Snowshoe Hare, Lynx, Wolves, Foxes, Elk, Deer, Wolverine, Eagles, Falcons, Siberian Tigers, Beaver Otter, Bobcat, insects including mosquitos and ants.



Name: _____

Taiga Biome Word Search

At the bottom of the page is a list of words. These words are hidden in the puzzle. The words have been placed horizontally, vertically, or diagonally - frontwards or backwards. When you locate a word, draw a circle around it.

n	f	b	r	i	i	e	r	m	i	n	e	u	l	f	m	a	w	t	u
p	y	e	n	v	x	s	n	o	w	e	o	s	n	p	l	i	i	w	b
y	v	a	t	r	n	z	s	q	b	i	i	h	d	f	a	o	p	h	j
d	w	r	c	t	o	d	z	j	o	b	r	g	e	p	r	z	i	t	s
a	a	s	y	i	u	m	i	g	r	a	t	i	o	n	g	e	n	h	a
z	c	n	s	u	m	m	e	r	s	u	m	m	e	r	e	t	e	u	u
z	t	p	e	r	m	a	f	r	o	s	t	o	j	c	s	i	o	c	q
w	o	m	s	n	f	b	n	d	s	h	u	a	l	k	t	w	o	o	h
c	g	o	p	v	l	f	j	w	g	k	y	y	a	l	h	s	k	n	i
o	l	s	r	k	f	r	b	o	r	e	a	l	n	k	o	e	s	i	b
l	a	s	u	p	r	w	x	u	k	y	f	i	r	e	s	u	v	f	e
d	c	f	c	d	x	n	e	e	d	l	e	s	r	f	p	h	n	e	r
c	i	f	e	v	z	t	e	p	d	j	p	r	y	v	r	d	t	r	n
g	e	y	a	o	v	p	a	o	w	p	d	f	d	j	n	h	l	o	a
e	r	v	e	o	u	o	s	f	r	e	e	z	i	n	g	c	z	u	t
u	s	x	a	s	e	f	s	q	u	i	r	r	e	l	s	d	l	s	e

fires	bears	cold	freezing
pine	spruce	coniferous	ermine
largest	hibernate	summer	snow
moss	needles	migration	squirrels
glaciers	summer	boreal	permafrost

1. In what nation might you find the taiga?

- a. Canada
- b. Australia
- c. France
- d. Japan

2. Trees in the taiga:

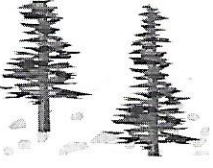
- a. Turn bright colors during the fall
- b. Don't grow very tall
- c. Bear fruit every spring
- d. Don't lose their leaves in the winter

3. In the movie, Tim says that taiga is the largest biome on earth. Which of the following is also an example of a biome?

- a. Hurricane
- b. Island
- c. Desert
- d. Continent

4. Subarctic latitudes can be found:

- a. In the area around the North Pole
- b. Directly south of the Arctic Circle
- c. In the area around the South Pole
- d. Directly north of the Antarctic Circle

5.  If trees in the taiga weren't pointy in shape, what might happen?

- a. They might be covered in snow all winter
- b. Birds might nest in them and eat their leaves
- c. They wouldn't be able to retain water during dry spells
- d. They couldn't absorb nutrients from the soil

6. 

Which statement is true of all animals that live in the taiga?

- a. They are cold-blooded
- b. They are well-adapted to their environment
- c. They hibernate for six months every year
- d. They can go long periods of time without water

7. What term best describes a muskeg?

- a. Wetland
- b. Snowfield
- c. Forest
- d. River

8. What adjective best describes the taiga's climate?

- a. Arctic
- b. Rainy
- c. Temperate
- d. Extreme

9. What can you infer about winter in the taiga?

- a. It is extremely short
- b. Humans cannot survive it
- c. The sun doesn't rise for months
- d. It snows almost constantly

10. The land of which U.S. state is predominantly taiga?

- a. Maine
- b. Michigan
- c. Alaska
- d. Vermont

1. What term best describes permafrost?

- a. Porous
- b. Fertile
- c. Nutrient-rich
- d. Hard

2.

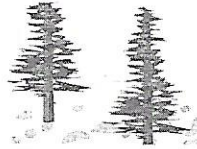


Compared to Arctic and Antarctic tundra, alpine tundra occurs:

- a. At lower latitudes
- b. At lower elevations
- c. At lower temperatures
- d. Closer to oceans

3. What kinds of plants are best suited to the tundra?

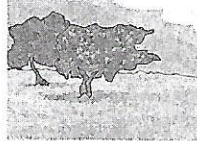
a.



b.



c.



d.



4. In which country might you find Arctic tundra?

- a. China
- b. Sweden
- c. Chile
- d. Japan

5. How does the climate in the Arctic tundra differ from the climate in the northeastern United States?

- a. The northeastern US has cooler summers and warmer winters than the tundra
- b. The northeastern US experiences fall and spring; the tundra doesn't
- c. The northeastern US receives much less precipitation during the winter than the tundra
- d. The northeastern US experiences a longer winter than the tundra

6. Which of the following is a predator that can be found in the tundra?

- a. Caribou
- b. Arctic hare
- c. Arctic wolf
- d. Penguin

7. Which area receives about the same amount of precipitation as the Arctic and Antarctic tundra?

- a. The Great Plains of the American Midwest
- b. The African savanna
- c. The Amazon rain forest
- d. The Gobi Desert

Even though there is lots of snow, it's so cold the water cycle doesn't run often.

8. What can you infer about the plants that grow in the tundra?

- a. Their roots do not extend very deep into the soil
- b. They flourish year-round
- c. They are poisonous to most animals
- d. They cannot produce flowers

9. Where might you find alpine tundra?

- a. The North Pole
- b. Antarctica
- c. The Rocky Mountains
- d. The southern tip of South America

10. The greatest threat to the tundra comes from:

- a. Runaway glaciers
- b. Human activity
- c. Vicious predators
- d. Earthquakes and volcanoes

Tundra Animals



Find the tundra animals hidden in the letters.

A C N T E G O I L H T I A P
 R M A U K Y A W E S L A R O
 I E S R B R X P L N E P C N
 N O A H I M U R T O J C T M
 P O L A R B E A R W K D I U
 E L M F A J O C D Y R A C S
 Y R O O B P A U T O B E H K
 I T N X T L E S K W A M A O
 R H O C M H D N U L E O R X
 S A R C T I C F O X O N E T

arctic fox

salmon

snowy owl

caribou

arctic hare

musk ox

moth

polar bear

1. How are the living creatures in an ecosystem linked?

- a. By what they eat
- b. By how they breathe
- c. By their size
- d. By their species

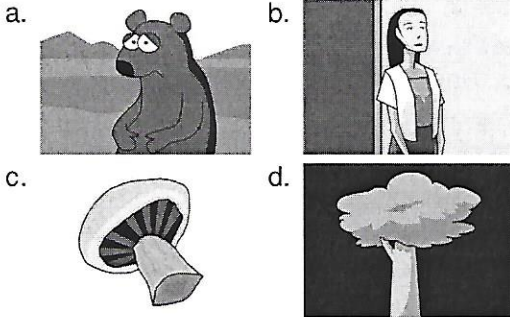
2. What can you infer from the fact that the disappearance of just one species can disrupt an entire food chain?

- a. Every food chain depends entirely on a single species.
- b. Food chains are extremely fragile.
- c. Food chains can regenerate on their own.
- d. Food chains would not exist without humans.

3. How is a food web different from a food chain?

- a. Food webs contain only producers, not consumers.
- b. Food webs do not include decomposers.
- c. Food webs contain many different, linked food chains.
- d. Food webs exist in aquatic environments; food chains exist in terrestrial environments.

4. Which of the following is a producer?



5. Through what process do producers make their own food?

- a. Parthenogenesis
- b. Photosynthesis
- c. Meiosis
- d. Mitosis

6. What role do you play in the food web?

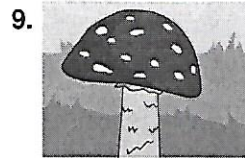
- a. Producer
- b. Consumer
- c. Decomposer
- d. Human

7. How might a lack of sunlight disrupt the food web?

- a. It would cause consumers to consume less.
- b. It would prevent decomposers from decomposing matter.
- c. It would prevent producers from producing nutrients.
- d. It would not disrupt the food web at all.

8. How are primary consumers different from secondary consumers?

- a. Primary consumers eat only plants; secondary consumers eat other consumers.
- b. Primary consumers eat other consumers; secondary consumers eat only plants.
- c. Primary consumers eat plants and other consumers; secondary consumers eat plants and decompose matter.
- d. Primary consumers eat plants and decompose matter; secondary consumers eat plants and other consumers.



This organism is most likely:

- a. A primary consumer
- b. A secondary consumer
- c. A decomposer
- d. A producer

10. Sheep are herbivorous. What can you infer from this?

- a. They are primary consumers.
- b. They are producers.
- c. They are secondary consumers.
- d. They are decomposers.



→ Same as a food chain, just formatted differently

Name: _____

Date: _____

Class: _____

1. Which of the following animals is a primary consumer?

a.



b.



c.



d.



2. Virtually all plants are autotrophic. But there are no autotrophic animals or fungi. What can you infer about autotrophic organisms?

- a. They can move around on their own
- b. They are at the top of the food chain
- c. They can make their own energy
- d. They reproduce slowly

3. In one cubic meter of the ocean, photosynthetic plankton produce 80,000 calories of energy each year. How many calories of energy are available in the bodies of the creatures that eat that plankton?

- a. 80,000
- b. 8,000
- c. 800
- d. 80

4. A raccoon consumes 500 calories of food. 50 of those calories are converted to biomass. In other words:

- a. 50 calories turn into plant matter
- b. 50 calories leave the raccoon's body as waste
- c. It uses 50 calories of energy to keep warm, reproduce, and move around
- d. 50 calories of energy are stored in its body

5. In most food chains, all of the energy originally comes from:

- a. Plants
- b. Dead matter that's been recycled by decomposers
- c. Heat from deep within the Earth
- d. The sun

6. In any ecosystem, there are always more:

- a. Herbivores than carnivores
- b. Predators than prey
- c. Animals than plants
- d. Heterotrophs than autotrophs

7. In an area off the Antarctic coast, elephant seals consume 200,000 calories of squid and small fish every month. How much energy must these squid and small fish consume to sustain the elephant seal population?

- a. 400,000
- b. 1 million
- c. 2 million
- d. 20 million

8. Which organisms do primary consumers mainly eat?

- a. Producers
- b. Secondary consumers
- c. Predators
- d. Decomposers

9. In many cases, secondary consumers cannot digest the bones of their prey. What conclusion can you draw from that?

- a. Eventually, all of the energy in those ecosystems will go towards bone formation
- b. No energy is required to form bones
- c. Energy used to create bone mass often does not travel farther up the food chain
- d. Primary consumers form bones from the parts of plants they cannot digest

10. In a marine food chain, small fish eat plankton, big fish eat small fish, and sharks eat big fish. Which organism has the smallest population?

- a. The plankton
- b. The small fish
- c. The big fish
- d. The sharks

Name _____ Date _____ Period _____

Ecology – the study of the environment

Food Chains and Energy Pyramids

Introduction/directions:

Food chains and energy pyramids show how different organisms are connected in an ecosystem, and the direction energy flows.

On the computer you will create a food chain and an energy pyramid. One should have mostly aquatic (water) organisms and one should have mostly land organisms. Be sure to label each using the correct vocabulary. When both are completed, they will be printed and turned in for a grade. Make sure you have included a heading (name, date and period) on your assignment. The food chain and energy pyramid should be created using pictures and labels.

✱ I suggest using our land biome review sheets to look up plants and animals from a specific biome. (Tundra, taiga, grasslands, deserts, tropical rainforests or deciduous forest).

1. Create a food chain using at least five different organisms. Label the producer, primary consumer and secondary consumer. (50 points)

2. Create an energy pyramid using at least five different organisms. Label the producer, primary consumer and secondary consumer. (50 points)

→ or another food chain
✱

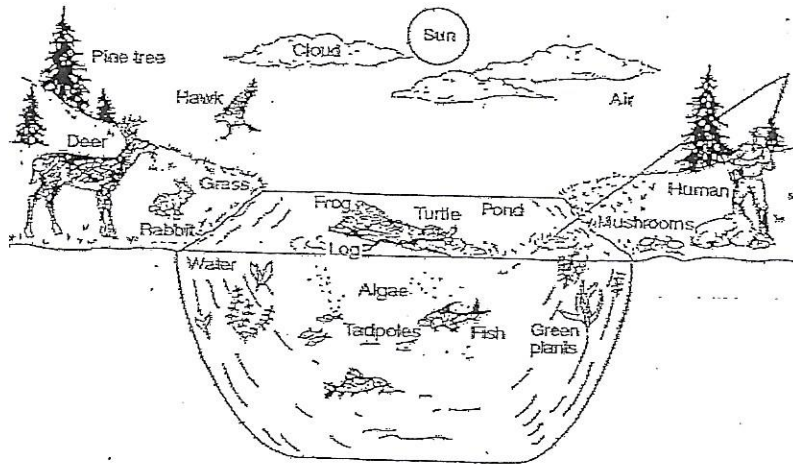
Name: _____

Period: _____

Ecology Unit Test Science 7

Answer each of the following with the correct letter choice, reference the diagram when necessary.

_____ 1) Which ecological term includes everything represented in the illustration below



A) population

B) ecosystem

C) species

D) community

_____ 2) An environment can support only as many organisms as the available energy, minerals, and oxygen will allow. Which term is best described by this statement?

A) carrying capacity

B) biological feedback

C) biological diversity

D) homeostatic control

_____ 4) Different species of carnivorous animals that share the same habitat in an ecosystem may

A) become decomposers

C) DO NOT compete for food

B) compete for food

D) mate with each other

_____ 5) The table below shows the deer population in Arizona for 30-year period.

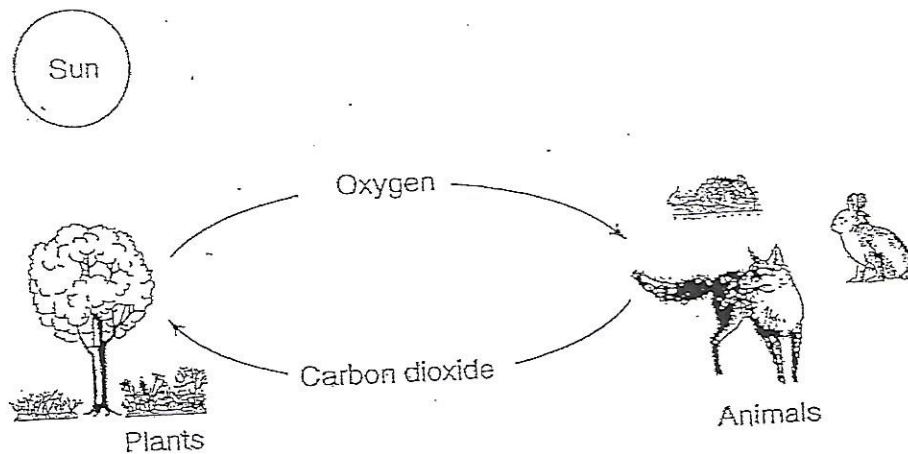
Deer Population in Arizona

Year	Average Number of Deer per 1,000 Acres
1905	5.7
1915	35.7
1920	142.9
1925	85.7
1935	25.7

What is the most likely reason that the deer population decreased from 1920 to 1935?

- A) there was less air pollution
- B) more water was available
- C) fewer hunting licenses were issued
- D) there was increased competition for food

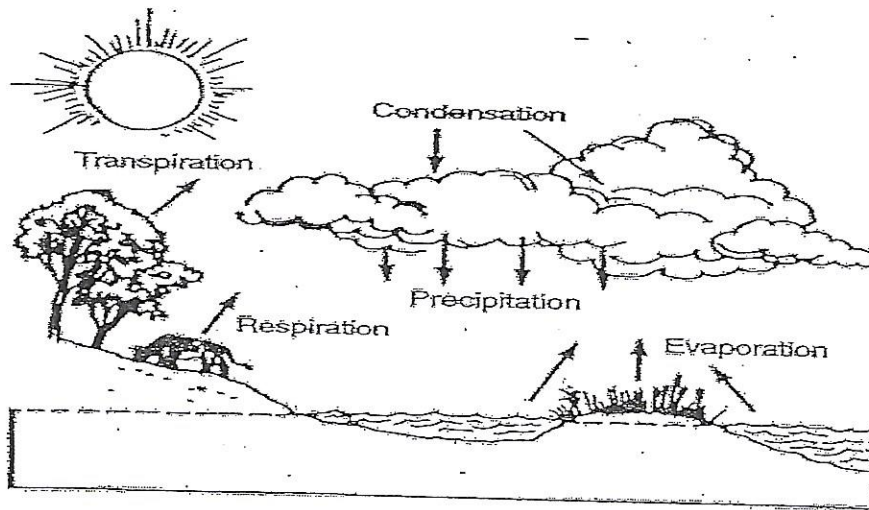
The diagram below shows the interaction between biotic and abiotic factors in an ecosystem.



_____ 6) Which of the following is considered to be biotic in the diagram above?

- A) sun
- B) plants
- C) oxygen
- D) carbon dioxide

A Substance evaporates from the ground, condenses in the air, and then falls back to the ground, this sequence of events is part of the



_____ 7) A) carbon cycle B) water cycle C) nitrogen cycle D) energy cycle

B

8) Transpiration refers to

- A) a new plant spouting from a seed
- B) water evaporation from a plant
- C) energy being absorbed by a plant
- D) minerals being absorbed by a plant

_____ 9) Grass shrubs and trees are called producers because they make their own

- A) water
- B) carbon dioxide
- C) minerals
- D) food

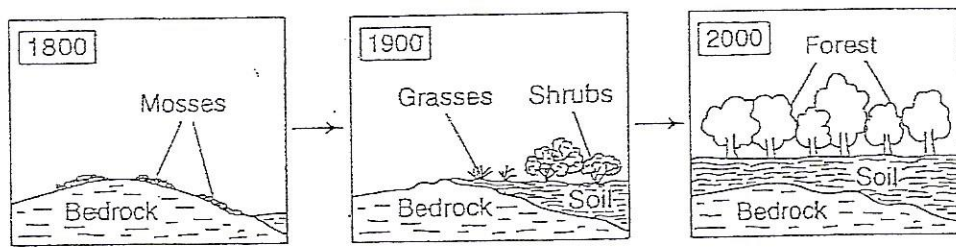
_____ 10) ~~Which of the following is a consumer?~~ *which is a consumer?*

- A) plant
- B) fish
- C) tree
- D) rock

_____ 11) When an ecosystem is destroyed by fire the term used for reconstruction of the ecosystem is called?

- A) ecological succession
- B) ecological participation
- C) ecological domination
- D) ecology

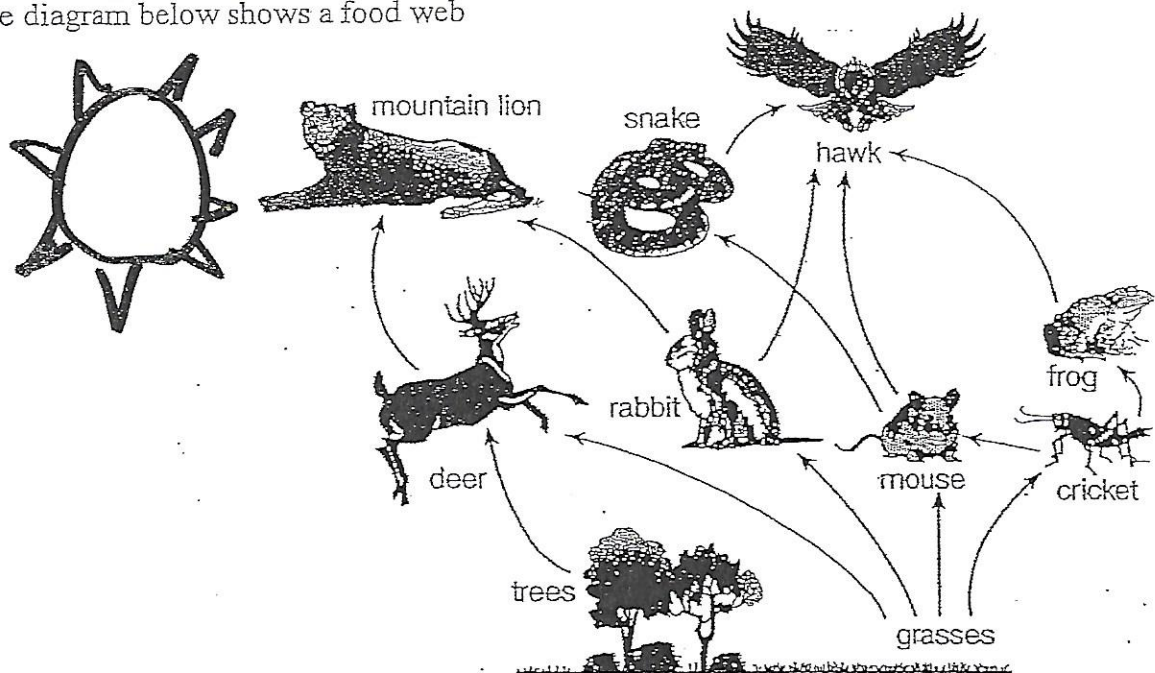
The diagram below shows changes in a natural community over a period of 200 years



_____ 12) Which process is illustrated in the diagrams?

- A) ozone depletion B) global warming C) recycling D) ecological succession

Questions 14 and 15 refer to the following
The diagram below shows a food web



_____ 14) What is the original source of energy for this food web

- A) the sun B) enzymatic reactions
C) bacteria D) chemical bonds in sugar

_____ 15) If the population of mice is reduced by disease, which change will most likely occur in the food web?

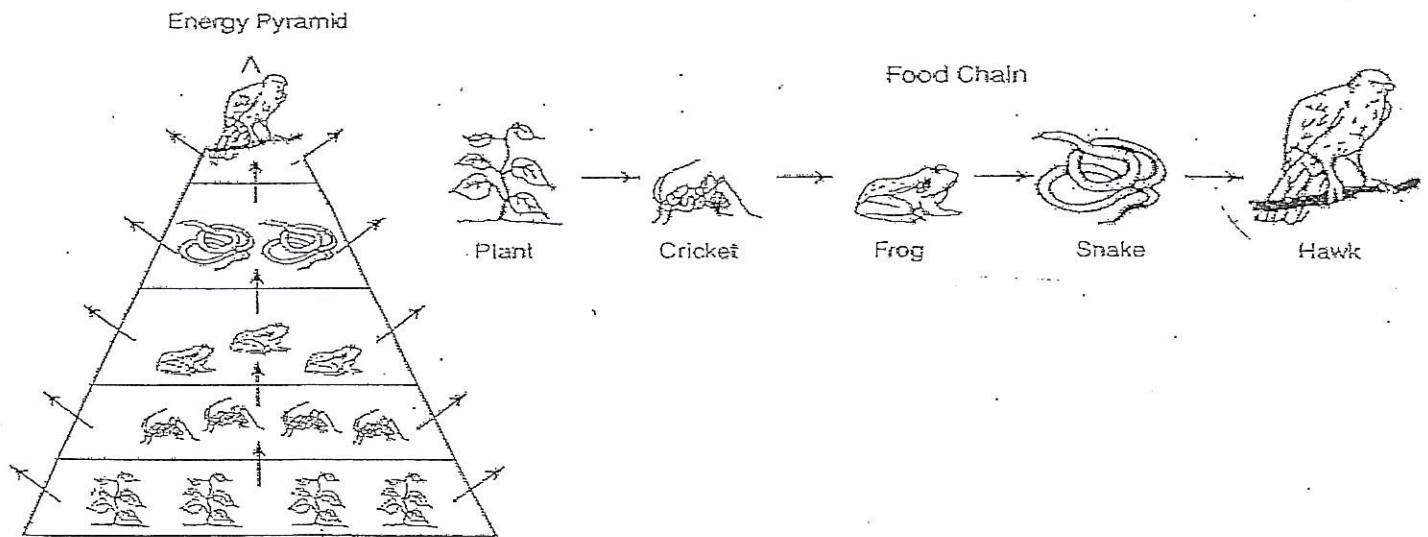
- A) increase in crickets B) decrease in deer
C) increase in snakes D) decrease in grass

_____ 16) Herbivores are a type of consumer that eats only

- A) animals B) water C) plants D) dead animals

Base your answers to questions 17 to 19 on the diagrams of a food chain and energy pyramid below.

Food chains and energy pyramids are used to help us understand the flow of energy in an ecosystem.



_____ 17) If the plants die during a summer drought, the cricket population would most likely

- A) decrease
B) increase
C) remain the same

_____ 18) If the number of frogs increases, the snake population would most likely

- A) decrease
B) increase
C) stay the same

_____ 19) If another predator that preyed on the snake was introduced into the ecosystem, the hawk population would most likely

- A) decrease B) increase C) stay the same

Base your answers to questions 20 to 22 on the passage below.

Acid Rain

Sulfur dioxide and nitrogen dioxide are pollutants released into the atmosphere from the burning of fossil fuels. These pollutants combine with moisture in the air to form acid rain. A main source of these pollutants can be traced to power plants located in the Midwestern United States. Due to weather patterns, the effects of acid rain have been most severe in the northeastern United States, including New York State.

The acid rain destroys the natural balance in lakes and streams and kills many species of fish. Acidic conditions affect not only lakes and forests, but also buildings and statues composed of limestone and marble. Other materials, such as metals, ceramics, glass, paints, and leather, are affected by acid rain.

_____ 20) Based on the reading which two pollutants combine with water vapor in the air to produce acid rain?

- A) nitrogen dioxide and carbon dioxide
- B) nitrogen dioxide and sulfur dioxide
- C) carbon dioxide and sulfur dioxide
- D) carbon dioxide and carbon monoxide

_____ 21) Where are the source of the pollutants that are responsible for New York State's acid rain.

- A) Mid-western States B) Northeastern States
- C) Southwestern States D) Mid-eastern States

_____ 22) What steps could be done to reduce the amount of acid rain?

- A) increase the burning of fossil fuels
- B) cutting down trees
- C) decrease the number of power plants
- D) leave electronics on when not in use