How can animals live in such different places in the world?

Animals and plants are adapted to the conditions of the habitats in which they live.

Animals live everywhere on Earth. Some places on Earth are very hot and some are very cold. Some places on Earth have a lot of water and plants, and other places have very little water and few plants. More than 99 percent of Antarctica is covered with ice but a few plants still grow there, mostly lichens, mosses, and algae. Antarctica is very cold.

Guess what?
Animals even live in Antarctica! The animals in Antarctica are dependent on the sea for feeding or are migratory and leave the continent when the winter arrives.

Animals can live in many different places in the world because they have special adaptations to the area they live in.

What is an adaptation?
An adaptation is a way an animal's body helps it survive, or live, in its environment. Camels have learned to adapt (or change) so that they can survive.

Animals depend on their physical features to help them obtain food, keep safe, build homes, withstand weather, and attract mates. These physical features are called physical adaptations. They make it possible for the animal to live in a particular place and in a particular way.

Each adaptation has been produced by evolution. This means that the adaptations have developed over many generations.

Examples of the basic adaptations that help creatures survive:

- shape of a bird's beak,
- the number of fingers,
- color of the fur,
- the thickness or thinness of the fur,
- the shape of the nose or ears

What is a mimicry adaptation?

Mimicry is adapting to look like something else. An example would be the hawk moth as it looks just like a dead leaf, tattered and veined.

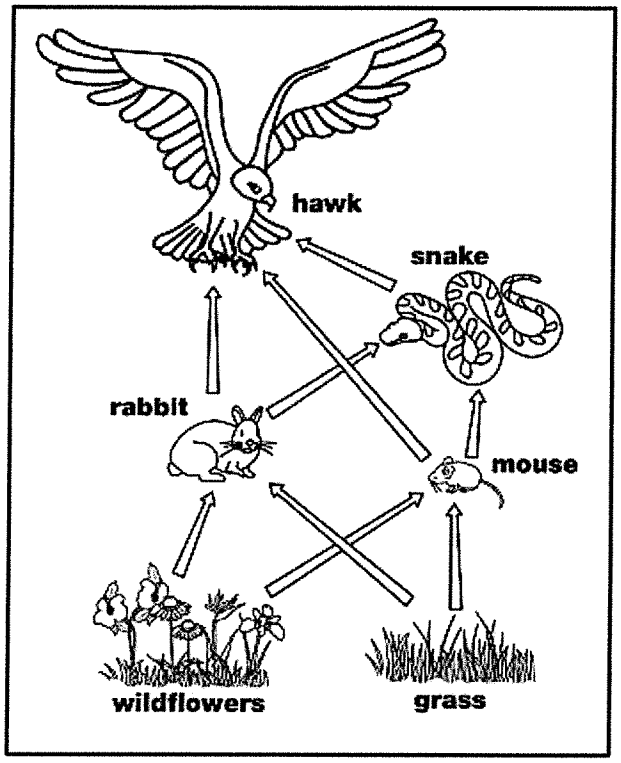
Name: _____

Characteristics of Vertebrate Groups

	Birds	Fish	Mammals	Reptiles	Amphibians
Covering What type of body covering do animals in this group have? (ex: scales)					
Blood Are animals in this group warm-blooded or cold-blooded?					
Breathing Do the animals in this group breathe air (lungs) or water (gills)?					
Birth Do the young hatch from eggs or are they born alive?					
Milk Do the young drink milk from their mother?					
Backbone Do animals in this group have a skeleton with a backbone?					
Examples List some animals in this group.					

Name: _____

Food Web



A food web shows how energy is passed on from one living thing to the next. It shows the feeding habits of different animals that live together in an ecosystem.

In the food web pictured on the left, energy is passed from the grass to the mouse to the snake to the hawk.

Producers are living things that make their own food with sun and air. The producers are pictured at the bottom of the food web.

Consumers are living things that eat other living things.

Use the food web in the picture above to answer the questions.

1. Name the living things in the food web that are producers. _____

_____

2. Name the living things in the food web that are consumers. _____

_____

3. Which living things does the snake eat? _____

4. Which living things does the hawk eat? _____

5. What is eaten by the rabbit? _____

Name: _____

Vertebrate Classifications

mammals	reptiles	amphibians
birds	fish	

Use the clues to identify the vertebrate group.

1. _____ These animals are warm-blooded. They lay eggs and take care of their young.

2. _____ These animals are warm-blooded. They have hair or fur on their bodies. Their young do not hatch from eggs.

3. _____ These animals are cold-blooded. They breathe with gills when young, but they grow lungs when they become adults.

4. _____ These animals are cold-blooded. They breathe with gills throughout their lives.

5. _____ These animals are cold-blooded. They have dry, scaly skin. and breathe air through lungs.

To which vertebrate group does each animal below belong?

6. elephant _____

7. salamander _____

8. penguin _____

9. shark _____

10. lizard _____

11. alligator _____

12. ostrich _____

13. tree frog _____

14. whale _____

15. human _____

Name: _____

Vertebrate Classifications

Tell whether each sentence is *true* or *false*.

16. _____ All birds have feathers.

17. _____ All mammals have hair or fur.

18. _____ Reptiles are warm-blooded.

19. _____ All birds can fly.

20. _____ All birds have a beak or bill.

21. _____ All birds have 2 feet.

22. Is a bat a bird or a mammal? Explain.

_____

_____

23. Is a dolphin a fish, amphibian, or a mammal? Explain.

_____

_____

24. What is the difference between *cold-blooded* and *warm-blooded* animals?

_____

_____

Name: _____

Date: _____

Life Science Word Search:

Find and circle the words below in the word search puzzle. They are all related to life science.

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

carnivore
consumer
endoskeleton
gene
herbivore
meiosis
nucleus
organism
photosynthesis
chlorophyll
cytoplasm
eukaryotic
germination
heredity
metamorphosis
omnivore
producer
species
chromosome
decomposer
exoskeleton
habitat
invertebrate
mitosis
organelle

Grade 5 Survival of Organisms

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Flamingos only turn pink when they eat shrimp. Which causes this trait?
a. Diet
b. Heredity
c. Instinct and Habit
d. Environment and Genetics

____ 2. Small miniature trees called Bonsai Trees can be grown by cutting back limbs leaves and roots from regular trees as they mature. What trait will these trees pass on to their offspring?
a. A miniature size
b. Cuts from a knife
c. Shape of the leaves
d. Preference for indoor pots

____ 3. Which is an example of a learned behavior that helps an animal survive in its environment?
a. A duck building a nest for its eggs.
b. A bird coming to a bird feeder for food.
c. A skunk that sprays a predator with its scent to escape danger.
d. A raccoon that is active at night to safely find food away from predators.

____ 4. Scientists have decided that wooly mammoths once existed on earth. What evidence supports this conclusion?
a. Fossilized bones
b. History books
c. Photographs
d. Storytelling

____ 5. Which of the following is an example of an acquired trait?
a. Tattoos
b. Large ears
c. Blue eyes
d. Hairline shape

____ 6. Dinosaurs have become extinct. What major factor do scientists believe caused the drop in temperature that lead to their disappearance?
a. Asteroid
b. Drought
c. Flood
d. Volcano

____ 7. The table below displays class survey data on hair and eye color.

Classroom Survey of Hair and Eye Color Combinations					
		eye color			
		blue	green	hazel	brown
hair color	blond	4	1	5	4
	brown	2	0	3	7
	black	0	2	1	1
	red	1	0	0	2

What combination of hair and eye color occurs most in this classroom?

a. Blond hair – blue eyes
b. Brown hair – brown eyes
c. Black hair – hazel eyes
d. Red hair – brown eyes

Use the information below to answer questions 8 and 9:

Spiders existed for over 400 million years. Spiders release silk from silk glands called spigots to weave their webs. They can use these webs to trap insects as prey. As a response to the rise of winged insects, spider webs have changed from being on the ground to hanging suspended in the air.

____ 8. A spider's ability to spin silk is an example of which of the following?

a. an acquired trait
b. an inherited trait
c. a life cycle stage
d. a learned behavior

____ 9. According to the information above, what caused the spiders to change from ground webs to webs in the air?

a. Diet Adaptation
b. Social Structure
c. Natural Selection
d. Learned Behavior

____ 10. A scientist tried to breed a strain of mice with no tails. He did this by removing the tails of the parent mice and then observing the offspring from the tailless parents. He repeated this experiment many times and each time, all of the offspring were born with tails. Which conclusion is supported by these results?

a. acquired characteristics are not inherited.
b. physical characteristics cannot be changed.
c. tails are not part of genetic relatedness.
d. tails are determined by environmental factors.

Use the diagram below to answer questions 11, 12 and 13.

____ 11. The diagram above shows the fossil bones of two extinct horses and a modern day horse. What conclusion is best drawn from the evidence in this diagram?

a. Horses have become larger over time.
b. Ancient horses could run faster than modern horses.
c. In 35 million years, modern horses will become extinct.
d. Modern horses are predators and ancient horses were prey.

____ 12. What evidence did scientists use to decide that the ancient samples found should be classified together with modern day horses?

a. Acquired traits
b. Learned behaviors
c. Anatomical features
d. Environmental factors

____ 13. The changes observed in horse leg bones in the diagram above were caused by which of the following?

a. Ancient horses stretched to reach food on higher branches and grew taller.
b. Tall horses survived environmental changes better than other horses.
c. Tall horses moved into the area and chased away the other horses.
d. Ancient horses became extinct.

____ 14. A chameleon is a specialized lizard that is often found in trees. According to the key above, which animal is most closely related to the chameleon?

a. fish
b. bird
c. snake
d. mammal

____ 15. What must be the same for a set of teen age identical twins?

a. Hair color
b. Blood type
c. Skin color
d. Body weight

____ 16. Why are whales and a porpoises both classified as mammals?

a. They eat similar diets.
b. They have hair follicles.
c. They swim in the ocean.
d. They both communicate with song like sounds.

____ 17. Which of the following traits do scientists use to classify organisms?

a. Body size
b. Eye color
c. Hair color
d. Skin covering

____ 18. Fossils of sea organisms that no longer exist are sometimes found in high mountain areas. How so scientists explain these discoveries?

a. A new climate caused an ocean to disappear.
b. The mountains were lifted from low, wet areas.
c. The fossils were carried there by flowing rivers.
d. The samples were left behind from volcanic eruptions.

____ 19. A snake, a dog and a bird are all classified in one group because the share which of the following traits?

a. blood type
b. vertebrae
c. protective instincts
d. reproductive behaviors

____ 20. A scientist is interested in learning more about how the environment and genetics influence traits of an individual. Which of the following is the best scientific question for her to investigate?

a. How do school lunch menus compare with healthy diet guidelines?
b. How do parents' eating habits affect their children's health?
c. How does diet impact the weight of identical twins?
d. How is health related to diet?

____ 21. Polar bears have thick footpads on the soles of their feet. How do these pads, shown above, benefit the bear?

a. They help the bear catch more seals.
b. They help the bear climb trees to look for food.
c. They help the bear swim faster when hunting fish.
d. They help the bear walk on ice and protect it against cold.

____ 22. What information **CANNOT** be learned from studying an animal fossil?

a. the animal's habitat
b. how long ago the animal lived
c. how much the animal weighted
d. the number of offspring the animal had

Use the information below to answer questions 23, 24 and 25.

Some areas of the Earth are experiencing warmer than normal temperature due to Global Climate Change. One example is the Cloud Forest area of Costa Rica. This unique mountain area is called a cloud forest because it is normally very warm and wet. It gets a lot of rain and is often covered in a heavy fog. Many plants, insects and animals live in this area that do not live anywhere else on Earth. The forest is very thick and dark. Some of the plants, like orchids, are able to get their moisture and minerals from roots hanging in the air from tall trees. Others that need cooler temperatures to live higher in the mountains.

____ 23. How might environmental changes caused by Global Climate Change affect the sensitive plants living in this ecosystem?

a. They would become extinct.
b. They would become more diverse.
c. They would adapt quickly to the new climate
d. They would move to another ecosystem in the area.

____ 24. Which describes why some plants in the Cloud Forest hang from trees with "air roots?"

a. Growing in trees keeps plants safe from animals.
b. Plants that can grow higher can get more sunlight.
c. Minerals that plants need can only be found in the air.
d. The soil does not have enough moisture for regular roots

Essay

25. What evidence would scientists need to collect to support the claim that Global Climate Change is affecting organisms in the Cloud Forest?

Use the information below to answer the next two questions:

The arctic fox is dark gray in the summer. In the winter its fur is creamy white. It has a long bushy tail, a short nose and small curled back ears. It has short, stubby legs and thick fur. The arctic fox also has thick fur and hair on its paw pads. When the arctic fox is sleeping, it protects its nose from the cold by curling its bushy tail around its body. The arctic fox moves from place to place looking for food. It will eat just about whatever it comes across. In the winter it often follows polar bears and wolves and eats their leftover kill.

26. How do the arctic fox's physical traits help it survive in its environment? Include a specific trait and advantage in your explanation.

27. How do the arctic fox's behavioral traits help it survive in its environment? Include a specific trait and advantage in your explanation.