



Name _____

Date _____

CLASSIFYING ANIMALS

Did you know that there are over 1,000,000 different species, or types, of animals? With so many species, scientists have to find a way to sort them into groups. Two of the main groups are vertebrates and invertebrates.

Vertebrates are animals that have a backbone. Humans are in this group. Also in this group are whales, monkeys, birds, and frogs. Just about any pet you have in your home is a vertebrate. Dogs, cats, goldfish, hamsters, and snakes are vertebrates.

Invertebrates have no backbone. Many of them live in the ocean. Clams, jellyfish, squids, and octopuses are invertebrates. Those that live on land are spiders, worms, and insects.

Scientists are finding new species of animals every day. Every one of them can be put into one of these two groups.

STORY QUESTIONS

1. What are two ways, according to this passage, animals are classified or sorted?
 - a. land and water animals
 - b. mammals and jellyfish
 - c. invertebrates and vertebrates
 - d. color and shape
2. Based on the passage, which is the best definition of invertebrates?
 - a. animals that have several backbones
 - b. animals that have one backbone
 - c. animals that have no backbones
 - d. animals that prefer to swim in the ocean
3. Human beings are in the category of . . .
 - a. invertebrates.
 - b. vertebrates.
 - c. neither of these.
 - d. both of these.
4. Which of the animals below would fit into the category of invertebrates?
 - a. giraffe
 - b. bird
 - c. squid
 - d. pig



Name _____

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PLANTS

It is important for scientists to sort animals into groups. It just as important to sort plants. Scientists sort them by how they make another plant like themselves. This is called reproduction. Scientists have decided to sort plants into three groups.

The first group of plants reproduces with spores. Spores are parts of the plant that break away and travel in the wind. Each one grows into a new plant if it lands on soil that is wet and rich. Ferns and mosses are plants that make a copy of themselves with spores.

Other plants reproduce with seeds. They are the second group. Seeds fall from the trees. They become part of the soil and grow into new plants. Evergreens, pine trees, and fir trees are plants that reproduce with seeds.

The third group is the plant that reproduces by flowering. Before seeds can form, the pollen inside the flower needs to move from one part of the flower to another. The seeds form inside the flower. Birds and insects help this by moving the pollen when they land on the flower. Some of the flowering plants grow into fruits to eat. The seeds are hidden inside the fruit. Apples, oranges, cherries, daisies, and roses are plants that have flowers.

STORY QUESTIONS

1. Which group of words mean the same as the word *reproduction*?
 - a. make a copy of itself
 - b. helps us understand
 - c. plants the flowers
 - d. flowering and pollen
2. Scientists have broken plants into three different groups:
 - a. colors, sizes, and shapes.
 - b. spores, flowers, and seeds.
 - c. vertebrates, invertebrates, and seeds.
 - d. cherries, grapes, and oranges.
3. How do the plants that have spores reproduce?
 - a. by seeds falling on the ground
 - b. by floating in the wind from place to place
 - c. by bees moving the pollen inside the flowers
 - d. by pushing their roots into the ground
4. Which type of plant group needs help from birds or insects?
 - a. plants that reproduce with spores
 - b. plants that reproduce with flowers
 - c. plants that reproduce with leaves
 - d. plants that reproduce with sunlight



Name _____

Date _____

FORESTS

Forests can be found all around the world. There are many different plants and animals that use the forest as their home.

In the forest, small animals eat the fruits, nuts, mushrooms, and insects. They race around from tree to tree and jump from branch to branch. Larger animals eat smaller animals. Other animals eat seeds and shrubs. Even though most animals are scared of humans, they are never far away. An ant, bat, robin, snake, deer, or turkey may be hiding among the leaves. They may be sitting in the trees. They might be running on the ground.

Many different types of trees live in the forest. Trees drop their leaves during the fall to save water on the floor of the forest. The soil is made up of fallen leaves, dirt, and animals that have died. After the animals and plants die, their bodies break down. This makes the earth rich with nutrients.

Forests are fun places to visit. A person who wants to see and hear the real sounds of the forest must sit quietly and listen with his or her eyes and ears.

STORY QUESTIONS

1. Which type of area is the article describing?

a. mountains	c. desert
b. ocean	d. forest

2. If you were to close your eyes in the forest, which one of these sounds might you hear?
 - a. a squirrel chattering with its friend
 - b. breaking glass
 - c. waves crashing on the rocks
 - d. sea gulls screeching

3. The purpose of this passage is . . .
 - a. to entertain the reader with forest crafts he or she can make.
 - b. to inform the reader of interesting facts about a forest.
 - c. to persuade the reader to travel to a forest on vacation.
 - d. to encourage the reader to create his or her own forest.

4. A good **synonym** for the word *shrub* could be . . .
 - a. dog.
 - b. bush.
 - c. bird.
 - d. sand.



Name _____

Date _____

OCEANS

Are you looking for some place new to explore? The ocean is an amazing part of our earth. There are many parts to the ocean and many different types of animals that live in it.

Coral reefs give food and shelter to small animals that live near the top of the water. Coral reefs are warm and usually have plenty of light. Starfish, sea anemones, and clams live here.

The seashore is the part of the ocean most of us know best. It includes the sand but also tide pools along the rocks. Animals that live on the rocks have special arms and legs that help them when the waves crash over them. They use these arms and legs to hold onto the rocks around them. Other animals, like crabs and some birds, move every time the waves crash back and forth. Smaller animals stay alive by quickly digging holes into the sand.

Many sea animals live in the open ocean where the waters still have some light. Many types of plants, as well as sharks, fish, turtles, and seals live here.

Deep down in the ocean it is very cold. There is very little light. In the deepest parts of the ocean, it is completely dark. Some animals that live down there actually create their own light to attract other fish!

STORY QUESTIONS

1. Why would you probably not find a coral reef in the deep ocean?
 - a. Reefs need cold water to live.
 - b. Reefs need light and warm water to live.
 - c. Reefs need to live in dark parts of the ocean.
 - d. Reefs wouldn't have enough food in the deep.
2. How do some of the smaller sand animals survive on the seashore?
 - a. They grab onto the coral reef.
 - b. They roll with the waves.
 - c. They hold on to rocks.
 - d. They tunnel quickly down into the sand.
3. According to the passage, what can some animals that live in the deep ocean do?
 - a. They can go for long periods of time without eating.
 - b. They can create their own light.
 - c. They can swim with their eyes closed.
 - d. They can eat animals larger than themselves.
4. If you were to explore the seashore, which of these would you probably feel beneath your toes?
 - a. sand, ice, and snow
 - b. ice, snow, and mud
 - c. sand, small pebbles, and shells
 - d. large rocks, clay, and chunks of dirt



Name _____

Date _____

DESERTS

It might seem that very few things can survive in the desert. Most plants and animals that you see in your town probably wouldn't. But there are many different types of plants and animals that are perfectly suited to the hot, dry climate.

In the desert, there is very little water. The plants and animals that live in the desert have special features for living with little water. Plants like the cactus have short leaves. These leaves trap and store water. The cactus also has spines on its leaves. This is to keep animals from taking its water.

Animals that live in the desert are often nocturnal. This means they sleep during the day. They come out to eat at night when it is cool. Other animals, like the camel, are awake during the heat of the day. They have special eyelashes that keep the sand out of their eyes. They have nostrils that can close to keep the sand out of their noses. They can go for many days without drinking. Many animals that live in the desert can get all the water they need from the foods they eat.

STORY QUESTIONS

1. Which of these could be a title for this passage?
 - a. "A Cold Day in the Desert"
 - b. "How to Stay Cool in the Desert"
 - c. "Plant and Animal Life in the Desert"
 - d. "When You are Hot, Drink Water"
2. What makes camels a unique or special animal?
 - a. They are used to humans so they eat from our hands.
 - b. They are awake at night when it's cool.
 - c. They have special eyelashes and nostrils to help keep sand out of their bodies.
 - d. They live under rocks.
3. Animals that sleep during the day are called . . .
 - a. lazy.
 - b. desert creatures.
 - c. camels.
 - d. nocturnal.
4. If you wanted to visit the desert in the daytime, you might wear . . .
 - a. a heavy jacket, mittens, and a hat.
 - b. shorts, a tank top, and sunglasses.
 - c. long jeans, a sweater, and rain gear.
 - d. a swimsuit and goggles.



Name _____

Date _____

TUNDRA

Do you think the desert is the only place that has very little rain? The tundra doesn't get much rain either. It is different from the desert, though. The tundra is almost always frozen!

The tundra is one of the coldest habitats on the earth. Summer only lasts for two months. During this time, the ground thaws, or melts, a little. It is never very warm, though. During the winter, there are times when the sun doesn't shine at all.

Only a few plants are able to stay alive in this habitat. When the icy winds blow, they are only safe because they grow close to the ground. Animals such as reindeer, polar bears, and musk oxen are the only ones that can stay alive in this cold weather. They have very thick fur that keeps them warm. Some of these animals hibernate in the winter while others migrate south.

The plants and animals of the tundra have adapted to this harsh environment.

STORY QUESTIONS

1. Summer in the tundra is . . .
 - a. hot and dry.
 - b. very busy.
 - c. two months long.
 - d. cold and rainy.
2. If you were to visit the tundra, you might expect to see . . .
 - a. parks, benches, and swing sets.
 - b. flowers, trees, and large bushes.
 - c. low-lying plants and a few animals.
 - d. birds, cats, and dogs.
3. A person who plans to visit the tundra should probably wear . . .
 - a. shorts and sunglasses.
 - b. a light jacket and a baseball cap.
 - c. a heavy jacket, warm hat, and gloves.
 - d. skis.
4. How are the tundra and a desert similar?
 - a. They are not similar at all.
 - b. They both have lots of different types of plants.
 - c. They have the same types of plants and animals.
 - d. They both get very little rain.



Name _____

Date _____

TROPICAL RAINFORESTS

Rainforests are very warm, wet forests. Rain falls for days and even months. Rainforests have millions of different types of plants and animals. They live in the four different zones of the rainforest.

The first zone is called the emergent zone. This is high above the rainforest. Here, giant trees stretch higher than the average height of any of the other plants. Many birds and insects live here.

The second zone is the canopy. This is the leafy area of the tops of the trees. Most of the animals in the rainforest live here. You can find monkeys, parrots, and frogs up here. You can also find butterflies, snakes, and sloths. A sloth is a very slow-moving animal that hangs upside down from the trees.

The understory is the third zone. It is made up of mostly young trees and shrubs. It is dark and cool. It is under the leaves, but not on the ground.

The forest floor is the final zone of the rainforest. The largest animals, such as jaguars and even elephants usually live here. The forest floor is also home to millions and millions of insects!

STORY QUESTIONS

- In which zone would you most likely find a large animal, such as a jaguar?
 - emergent zone
 - canopy
 - understory
 - forest floor
- According to the passage, how many types of plants and animals live in the rainforest?
 - trillions
 - millions
 - kazillions
 - thousands
- Which is the highest zone in the rainforest?
 - forest floor
 - emergent
 - canopy
 - understory
- In this passage, *zone* probably means . . .
 - time zone.
 - area under water.
 - part or section.
 - area where no animals live.



Name _____

Date _____

BRAIN POWER

In 2001, Matt Nagle was a 25-year-old football star. Then one night he had a bad accident that resulted in his spinal cord being cut.

Matt was paralyzed from the neck down. He could not do anything alone. Matt couldn't even breathe by himself. Doctors kept working to make better equipment for people like Matt to stay alive. Science labs kept doing research to try and find answers. They were trying to make machines to help paralyzed patients. A company who does research on brains was searching for ways to use brain waves. They chose Matt as the first person to try a new technology. They wanted to do an experiment that used machines to carry out instructions from inside the brain.

In June 2004, the doctors implanted a chip into Matt's brain. This chip could run machines with his thoughts. Matt could send simple messages to a computer with this chip. He could change channels on the TV. Matt could play computer games and turn lights on and off. All of these things he could do just by thinking about them.

Matt worked for months to get the messages to move from his brain to the computer. It was very hard. The technology was difficult. The doctors were worried that the chip might injure Matt's body. They also worried that it might hurt his brain and his thinking. Matt wanted to fight to get better. Matt kept fighting in hopes of trying to help make things better for other people like himself.

STORY QUESTIONS

1. "Implanted a chip into Matt's brain" means . . .
 - a. planted a flower in his brain.
 - b. placed a computer chip into his brain.
 - c. added cookies to his brain.
 - d. placed tortilla chips in his brain.
2. What did the doctors worry would happen when they put the chip into Matt's brain?
 - a. There would be damage to his mind and to his body.
 - b. He would get cancer.
 - c. He would start singing and dancing.
 - d. He would start swimming and golfing.
3. What can Matt use his mind to do?
 - a. type letters, dial the phone, and play cards
 - b. run, jump, and dance
 - c. turn lights on and off, switch TV channels, and play computer games
 - d. play football
4. From reading this passage, we can guess that Matt was a person who . . .

a. didn't like to do hard things.	c. never gave up.
b. was a show off.	d. yelled a lot.



Name _____

Date _____

SOFT T-REX

In 2005, there was an unusual discovery found in Montana. Twenty-four different kinds of dinosaurs were uncovered in this one place. One kind was different than all of the others. Most dinosaurs that are discovered are just bones. This dinosaur still had soft tissue. It had cells and blood vessels. This was not known when the dinosaur was first discovered. A scientist discovered it when she examined it in the lab.

Before this discovery, scientists never thought that tissue in bones could survive more than 100,000 years. The scientists tested the bones. They found that they were 68 million years old. This was the oldest dinosaur ever discovered with tissue.

This type of tissue is found in bones of birds when they are ready to make eggshells. It contains calcium. It is found when birds are ready to lay eggs. The scientists realized they had found a female dinosaur. This dinosaur had laid eggs. The eggs from this dinosaur were very much like bird eggs today.

STORY QUESTIONS

1. An **antonym** for the word *unusual* would be . . .
 - a. regular.
 - b. strange.
 - c. odd.
 - d. bizarre.
2. Why was this dinosaur so important?
 - a. It had to be taken out with a helicopter.
 - b. It was the biggest dinosaur ever discovered.
 - c. It was the first dinosaur over 100,000 years old with soft tissue.
 - d. It was in the middle of a lot of other dinosaurs.
3. What did the bone have inside?
 - a. a bone that is long, thin, and yellow
 - b. a bone that cannot be broken
 - c. a material that has calcium inside
 - d. dinosaur babies
4. Why was this discovery so important?
 - a. It showed that this dinosaur laid eggs like our modern day birds.
 - b. It showed that this dinosaur laid eggs like our modern day crocodiles.
 - c. It showed that this dinosaur laid eggs like our modern day squirrels.
 - d. It showed that dinosaurs didn't lay eggs.



Name _____

Date _____

NEW PLANET?

On January 8, 2005, three scientists were studying the solar system. They were surprised to see something new in the sky. It was large and bright. Even people who studied the stars for fun were able to see it. These people are called amateur astronomers.

The object was much bigger than Pluto. Its orbit, or path, around the sun was different from the other planets. People started asking questions. Was it a planet or not? No one knew for sure. Everyone had his or her own opinion.

Michael A. Brown, one of the three scientists, believed it was a planet because of its size and distance. A man named Alan Boss did not agree. Alan is a theorist, a person who studies guesses. He believes that if we call it a "planet," we are not being fair to the bigger planets in the solar system.

Michael Brown has continued to collect information on the bright object. He feels sure it is a planet. He is trying to find out about how big it is. He wants to know how much it weighs. He wants to know what it is made of.

Michael has made up a name for the planet. However, he is keeping the name a secret. He won't tell until it is known if it is really a planet or just another bright light in the sky.

STORY QUESTIONS

1. What is an *amateur astronomer*?
 - a. a person who likes stars, ice cream, and cookies
 - b. a person who has a college degree in astronomy
 - c. a person who studies the stars and the sky for fun
 - d. a person who sits on his porch to catch snowflakes
2. A *theorist* is someone who . . .
 - a. enjoys talking about stars.
 - b. chats with friends about things they do not know.
 - c. studies guesses to find out if they are true.
 - d. studies the stars.
3. Why hasn't Michael told everyone the name he wishes to give the planet?
 - a. It hasn't been proven yet that it is a planet.
 - b. He might change the name.
 - c. He is too embarrassed.
 - d. He wants someone else to name it now.
4. Why were amateur scientists able to see this new object in the sky?
 - a. It cut off the sun for 10 minutes.
 - b. They knew it was coming.
 - c. They had read science fiction novels about it.
 - d. It was very bright and large.