

AMERICAN
EDUCATION
PUBLISHING

GRADES 1-3

THE COMPLETE BOOK OF ANIMALS

- Over 100 Animals
- 12 Pull-Out Storybooks
- 12 Color-Your-Own Pictures
- Makes Learning Fun!





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Pronunciation Key

As you read, you may find words that you do not know or words that are difficult to pronounce. In this book, the difficult words are respelled the way you say them. A syllable in CAPITAL LETTERS will have the most stress. The key below gives examples of how words are respelled.

Letters	Example	Respelling	Letters	Example	Respelling
a	sat	(sat)	m	moose	(moos)
ah	mop	(mahp)	n	nature	(NAY cher)
ahr	car	(cahr)	oh	no	(noh)
air	fair, pear	(fair), (pair)	oi	foil, toy	(foil), (toi)
aw	law, all	(law), (awl)	oo	moon, blue	(moon), (bloo)
ay	pay, late	(pay), (layt)	or	corn, more	(corn), (mor)
b	bat	(bat)	ow	now, house	(now), (hows)
ch	chin, beach	(chihn), (beech)	ng	sing	(sihng)
d	dime	(dighm)	p	pen	(pehn)
eh	net	(neht)	r	ring	(rihng)
ee	see, eat	(see), (eet)	s	say, cent	(say), (sehnt)
er	fern, stir, turn	(fern), (ster), (tern)	sh	ship, brush	(shihp), (bruhsh)
f	fan, phone	(fan), (fohn)	t	tail	(tayl)
g	gate, dog	(gayt), (dahg)	th	three	(three)
h	hat	(hat)	u	book	(buk)
ih	him	(hihm)	uh	sun	(suhn)
igh	fine, buy	(fighn), (bigh)	v	valley	(VA lee)
j	jeep, gem,	(jeep), (jehm)	w	win	(wihn)
k	kit, can	(kiht), (kan)	y	yes	(yehs)
ks	fox	(fahks)	yoo	few, mule	(fyoo), (myool)
kw	quit	(kwiht)	z	zebra, size	(ZEE bruh), (sighz)
l	lamp	(lamp)	zh	treasure	(TREH zher)

ARCTIC and ANTARCTIC



LAND and SEA ANIMALS



Wolverine



Walrus



Orca



Caribou



Lemming



Ermine



Snowy Owl



Penguin



Polar Bear



Musk Ox



Seal



Caribou

Caribou (CAIR ah boo) are sometimes called “reindeer.” They are large animals weighing 300 to 600 pounds. Both male and female caribou have very large antlers. In fact, the female caribou is the only female member of the deer family able to grow antlers. Caribou have long hair and woolly fur. They are great long-distance runners and can easily outrun a pack of wolves. Their wide hooves help them walk easily through snow. Caribou can also swim.



In summer, caribou feed on grass, leaves and other low-growing plants of the tundra, the flat, treeless land of the arctic. In winter, caribou migrate to wooded areas and feed on small, dry plants that grow on rocks and trees called lichens (LEYE kuhnz).

Think and Learn

1. How much do caribou weigh? _____
2. Caribou are members of the _____ family.
3. Where do caribou migrate in winter? _____
4. What do caribou eat during summer? _____



Ermine

Ermine (ER mehn) are members of the weasel family. They are tiny animals, weighing less than a pound. Ermine have huge dark eyes and long whiskers. They have smooth, silky fur. During the spring and summer, their fur is brown. When autumn approaches, ermine grow a new coat of thick, snow-white fur. This white fur helps ermine blend in with their snowy environment.



Ermine live in northern regions of North America along riverbanks and at the edges of forests. They are good hunters and feed on small animals, such as rabbits and rats. In April, ermine have litters of 3 to 13 fuzzy white babies. By late summer, these babies are fully grown.

Think and Learn

1. During spring ermine have _____ fur.
2. What color fur do ermine have in winter? _____
3. Where do ermine live? _____

4. What do ermine eat? _____



Lemming

Lemmings are chubby little animals belonging to the rodent family. They look very much like hamsters and guinea pigs. Lemmings dig in the soil to build their nests, which they line with grass. They eat plants and live in areas where food is often scarce.



An old legend about lemmings says that every few years lemmings march to the ocean, jump in and drown. Scientists have learned that some lemmings will move to a new area when the number of lemmings in an area is too high. Lemmings always migrate in a straight direction, crossing anything in their path. If they come to a river, they jump in and swim across it. When they come to the ocean and jump in, they cannot swim across it, so they drown.

Think and Learn

1. What other animals do lemmings look like? _____

2. Where do lemmings build their nests? _____
3. What do lemmings eat? _____
4. When do lemmings migrate? _____



Musk Ox

Musk oxen are huge animals with large heads and short legs. They grow to 5 feet tall at the shoulders and weigh up to 900 pounds. Musk oxen have long dark brown hair that almost touches the ground. Thick woolly fur under the hair keeps them warm and dry. They use their hooves to scratch through the snow to find grass, willows and other plants to eat.



Musk oxen live together on the tundra in herds of 20 to 100. When danger is near, the adult musk oxen gather in a circle, facing outward. The calves stay in the center of the circle for protection. When the adult oxen lower their heads, showing their enormous horns, even a pack of wolves will not come near.

Think and Learn

1. Musk oxen have _____ legs.
2. Musk ox hair almost touches the _____.
3. How do musk oxen find food? _____

4. How big are herds of musk oxen? _____



Orca (Killer Whale)

The black and white orca (OR kuh) is a large dolphin that is often called a “killer whale.” It grows up to 30 feet long and weighs 3 to 10 tons. The orca has 40 to 48 large pointed teeth that it uses to catch and hold its prey. It eats over 100 pounds of food every day.



Orcas live and travel in family groups called pods. They are affectionate animals and are often seen touching each other. Female orcas give birth to one baby every 3 to 10 years. The baby will stay with its mother for 10 years. Orcas are very intelligent animals. They communicate with each other by making sounds.



Think and Learn

1. Is an orca a dolphin or a whale? _____
2. What color is an orca? _____
3. How much food does an orca eat each day? _____
4. Orcas travel in family groups called _____.
5. Orcas communicate by making _____.

PENGUINS

Pull-Out Storybook





What animal seems dressed for a fancy party? A penguin, of course. The penguin's black-and-white coloring looks like a tuxedo. There are 17 different kinds of penguins. The emperor penguin is the largest. It can weigh up to 90 pounds and grow to be 4 feet tall. The little blue penguin is the smallest. It weighs 2 pounds and is about 1 foot tall.

Emperor Penguin



Little Blue Penguin





Penguins have bodies that are built for water. Their short wings serve as flippers. A penguin uses its tail as a rudder to steer. Penguins get their food from the sea. Their favorite foods are krill, which are small shrimplike animals, fish and squid, which they catch and eat underwater.



If there is snow, penguins like to get around by tobogganing. They flop on their bellies and slide, using their wings and feet to paddle forward. Some penguins can leap from the water several feet into the air! Imagine if you could pop out of a pool like a penguin!





King Penguin chicks

Like all other birds, a penguin's feathers wear out. So, each year, the penguin sheds its old feathers and grows new ones. During this time, a penguin cannot go in the cold water because it is no longer waterproof. Therefore, it cannot eat. Penguin chicks shed their downy feathers when they are about a year old. The feathers underneath are waterproof.



Most penguins build nests to keep their eggs safe. Emperor penguins, however, do not build nests. The egg is kept warm on the tops of the parents' feet. The fathers huddle together to keep the eggs warm while the mothers go to the sea to feed. The mothers return after the chicks have hatched, and the fathers go to the sea.





A penguin chick must peck its way out of the eggshell. Both the mother and father penguins will care for the chick. Penguin parents must go to the sea for fish, then come back to feed their hungry chicks. When chicks get older, they gather in groups for warmth and protection. Once a young penguin molts, or sheds its feathers, it grows adult feathers. Then, the penguin is ready to feed and live on its own.

Here are a variety of penguins. The giant **emperor penguin** and the little **Adelie** (AD uh lee) penguin both live in Antarctica. The **black-footed penguin** lives off the southern coast of Africa. Like other warm-water penguins, it brays like a donkey. The **rockhopper** is an aggressive little penguin that will bite humans or slap them with a flipper if they get too close. The **Galapagos** (guh LAH puh gohs) **penguin** lives on islands where temperatures reach 100°F. **Chinstraps** are noisy penguins that hiss, growl and stamp their feet! The **gentoo** is the shyest penguin. The **little blue penguin** lives in Australia and New Zealand. The **yellow-eyed penguin** is the rarest penguin. Fewer than 5,000 are left.

Emperor Penguin



Adelie Penguin

Black-Footed Penguin



Rockhopper Penguin



Galapagos Penguin



Chinstrap Penguin



Gentoo Penguin



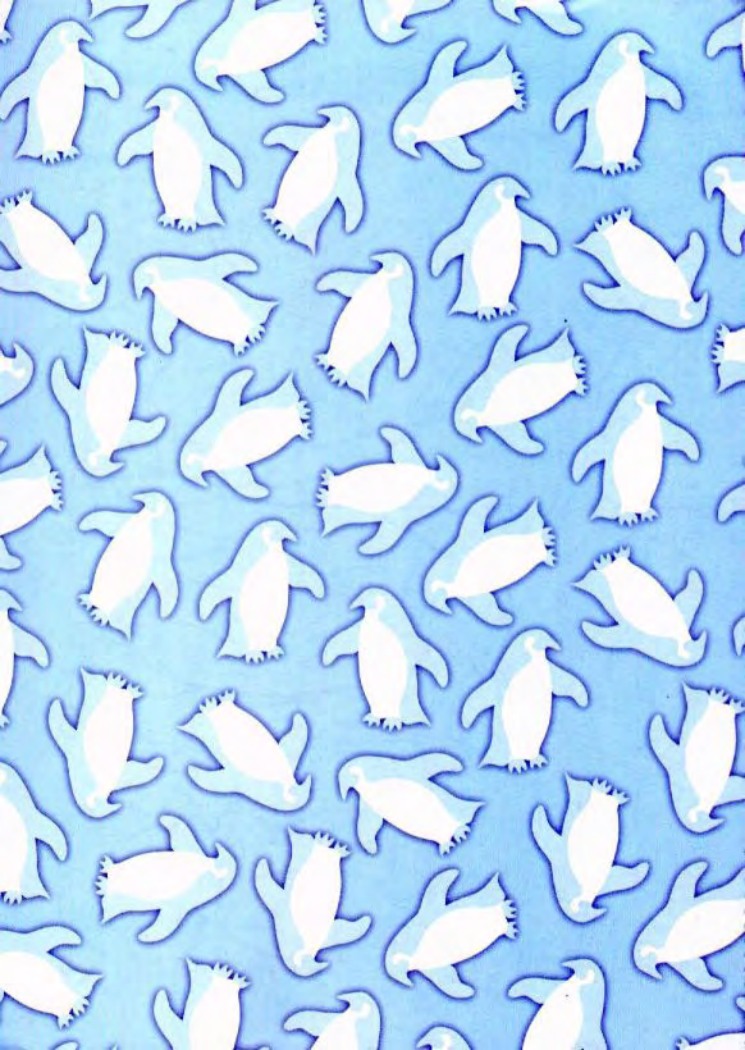
Little Blue Penguin



Yellow-Eyed Penguin









Polar Bear

Polar bears are the world's largest four-legged meat-eating animals—9 feet tall and 1600 pounds! They have special features to help them live in the arctic. Their thick fur and a layer of fat keep them warm. Their small ears lose less body heat. Pads on the bottom of their feet keep them from slipping on ice. Polar bears are excellent swimmers. Webbing between their clawed toes helps them swim. Polar bears hunt seals, walrus, small whales and fish. In the summer months, they eat berries and plants.



Female polar bears make dens in ice caves or in snow banks. They give birth to one to three cubs, weighing 1 pound. The cubs stay with their mother for 2 years.

Think and Learn

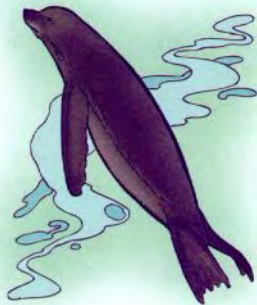
1. What features keep polar bears warm? _____

2. Polar bears have webbed toes to help them _____.
3. What do they eat in the summer? _____
4. How long do polar bear cubs stay with their mother.



Seal

Seals are animals with special features to live in water. Their flippers move them quickly and gracefully through water. Their bodies are covered with oily fur and a layer of blubber, or fat, to keep them warm. There are two kinds of seals—sea lions and true seals. Sea lions have ears outside their heads, but true seals have no outer ears. While sea lions can move easily on land, true seals must use their chest muscles to move on land. True seals never have to leave the water.



True seals hunt underwater for their food. They eat shrimp, crab, fish and seabirds. Seals give birth to white baby seals, called pups. Their coloring helps hide them from polar bears. As the pup grows, its white fur will turn dark brown like its parents' fur.

Think and Learn

1. Seals are adapted to live in _____.
2. _____ move seals quickly through water.
3. What keeps seals warm? _____
4. Which kind of seal moves easily on land? _____
5. What color are sea pups? _____



Predator and Prey

Polar bears live along frozen shores and on ice floating in arctic waters. The polar bear is a predator (PRED uh tur) because it hunts other animals for food. The animals hunted by predators are called prey. When hunting for seals, polar bears like to wait by a seal's breathing hole in the ice. The seal may not see the polar bear waiting by the breathing hole. The polar bear's white fur helps it blend in with its snowy environment. When the seal comes up to breathe, the polar bear catches it. Seals are dark brown to help them blend in with their environment. When a polar bear looks down into the water, the water reflects the color of the ocean bottom, which is dark brown or black. Sometimes the polar bear does not see the seal.



1. Color the picture to show how the animals blend into the environment.
2. Label the predator and the prey in the picture.



Snowy Owl

The snowy owl gets its name from the snow-white feathers covering its body. It has thick feathers covering its feet and legs for warmth. Like other owls, snowy owls must turn their heads to look around because their eyes cannot move. Their ears are tiny slits on their faces. Owls raise their face feathers when they are listening.



Snowy owls hunt for rats and arctic hares, but lemmings are their main food source. If lemmings are plentiful, snowy owls will lay more eggs. When lemmings are scarce, snowy owls may not lay any eggs. Snowy owls live on the treeless tundra, so they build their nests on the ground in places where they can watch for predators.

Think and Learn

1. Snowy owls have _____ covering their feet and legs.
2. Why must owls turn their heads to look around? _____

3. What is the main food source for snowy owls? _____
4. Snowy owls build nests on the _____.



Walrus

The walrus is a huge animal, weighing between 2 and 3 tons. Its thick skin and layer of blubber protect it from the cold. Both male and female walruses have ivory tusks. They use their tusks to pull themselves across ice and for protection against polar bears.

Walruses are excellent swimmers. They can stay out at sea for days. They feed on the ocean floor by using their “moustache” bristles to feel for clams. Then, they use their snouts to dig the clams out. Walruses live together in herds containing thousands of walruses. One of their favorite things to do is sleep. When one walrus is awakened, it slaps another walrus. This goes on until the whole herd is awake. In time, they will fall back to sleep.



Think and Learn

1. How much does a walrus weigh? _____
2. Why are the tusks of a walrus important? _____

3. What do walruses eat? _____
4. Walruses live together in _____.



Wolverine

The wolverine is the largest member of the weasel family. It reaches a height of 1 foot at the shoulder and weighs 30 to 50 pounds. Wolverines are covered with long, shaggy, dark brown hair. Water does not freeze to their fur.

For their size, wolverines are probably the strongest and fiercest animals of the North. Often, wolverines chase away a bear or a mountain lion from its food so they can eat the food. After a wolverine eats a large meal, it will not eat again for a few days. Female wolverines give birth to two or three cubs in a litter. They are born in early summer already covered in woolly fur coats. By winter, the cubs can live on their own.



Think and Learn

1. The wolverine is the largest member of the _____ family.
2. What is special about wolverine fur? _____
3. Why are wolverines thought of as fierce animals?

4. When are wolverine cubs born? _____

NORTH AMERICAN

ANIMALS



Moose



Bald Eagle



Porcupine



Beaver



White-Tailed Deer



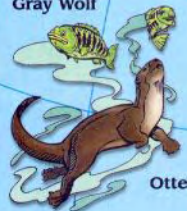
Gray Wolf



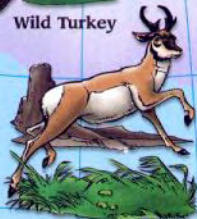
Wild Turkey



Grizzly Bear



Otter



Pronghorn



Striped Skunk

Bald Eagle

The bald eagle is a bird of prey, or a bird that catches and eats other animals. It is a large bird, with a wingspan reaching 8 feet. The bald eagle is well known for its white head and neck. Most bald eagles live near water because they love to eat fish. Their hooked bills and long, curved claws help them to catch fish.

Of all the eagles, bald eagles build the largest nests. Some nests have been measured at 8 feet across! Eagles lay two ivory-white eggs. The eaglets are born brown. They do not look like adults until they are three years old. The bald eagle has been the national bird of the United States since 1782. It is a symbol of freedom and courage.



Think and Learn

1. The bald eagle has a wingspan of _____.
2. What color is the bald eagle's head? _____
3. What helps bald eagles catch fish? _____

4. The bald eagle is the national bird of _____.

Beaver

The beaver is a member of the rodent family. It grows to a length of 2 feet and usually weighs 35 to 40 pounds. The beaver has dark brown fur that keeps the animal warm and dry. Its strong jaws have two cutting teeth, called incisors. The incisors keep growing all through a beaver's life so that these teeth are never worn down. Beavers use their incisors to cut down trees. Beavers eat twigs and bark from trees that grow near water.



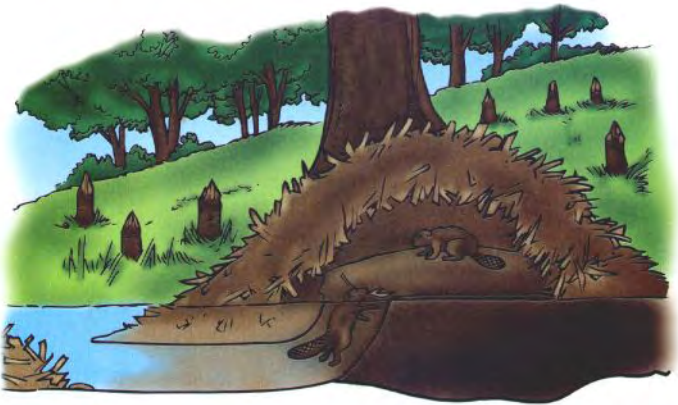
Beavers are graceful swimmers. They move easily through the water with their webbed toes. Their tail helps steer them. Beavers mate for life and live in colonies. All the beavers in a colony work together and build lodges as their homes.

Think and Learn

1. What are the beaver's cutting teeth called? _____
2. What do beavers eat? _____
3. How does a beaver use its tail? _____
4. What is a beaver home called? _____

Beaver Lodges

Beavers in a colony work together to build their lodges. Lodges are made of tree branches and grass. Beavers use mud to keep the branches in place. A lodge can be 3 to 6 feet high and 7 feet across. It has two rooms. The living room is above the water. It is where the beavers sleep and keep warm. The underwater storage room is where they keep their food. If the water level drops, beavers build dams. Dams raise the water level around the lodge so the storage room stays under water.



1. In the beaver lodge above, label the entrance, the living room and the storage room.
2. Is the entrance above water or below water? _____

Gray Wolf

The gray wolf is the largest member of the wild dog family. This animal can reach a length of 4 feet and can weigh 100 pounds. Gray wolves live in northern forests. They hunt for deer, elk and moose in packs of 3 to 24. Wolves, like other members of the dog family, can go for several days without food.

The leader for the wolf pack is the strongest male. Other wolves show respect by lowering their ears and putting their tails between their legs. Wolves mate for life. A female gives birth to a litter of 3 to 13 young, called pups. The pups are helpless at first. Other members of the pack help the parents care for the cubs.



Think and Learn

1. The gray wolf is a member of the _____ family.
2. Where do gray wolves live? _____
3. Gray wolves hunt in _____.
4. How do wolves show respect to the leader? _____



Word Search

Find the names of North American animals in the puzzle. They are written **across** and **down**.



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

caribou

fox

wolf

bat

beaver

skunk

deer

weasel

eagle

bear

rabbit

antelope

armadillo



pronghorn

porcupine

WOLVES

Pull-Out Storybook





What do you think of when you hear the word *wolf*? A sly animal that tricks girls in red hoods? Wolves have had a bad reputation. But wolves are actually shy animals that avoid people. With each other, they are caring, protective and loyal.



There are two main species, or kinds, of wolves—the gray wolf and the red wolf. Male wolves are larger than females. The wolves below are timber wolves—a type of gray wolf.





Wolves look like large dogs. In fact, they are members of the dog family. Wolves have longer legs and bigger paws than dogs. Their fur is also thicker and bushier. This helps keep them warm in freezing temperatures.

Wolves have excellent eyesight and a keen sense of hearing. They can hear sounds 10 miles away. Wolves also have an excellent sense of smell.



Gray wolves live in family groups called packs. Most packs have between 6 and 20 wolves. Pack members care for and protect each other. They work together to hunt food. They also help raise the wolf pups.



Wolves are curious, intelligent animals. They sometimes remind us of dogs. But as friendly as wolves may look, they are wild animals and do not make good pets.





Wolves communicate in many ways. A wolf pack howls to tell other wolves to stay away. They may howl to signal the start of a hunt. Wolves also howl to call each other back to the pack.

Wolves often communicate with their bodies. A happy wolf has its ears forward, its tongue hanging out of its mouth and its tail wagging. An angry wolf has its ears forward, its teeth bared and its tail up. A frightened wolf has its ears back, its mouth closed and its tail down.



Wolves are carnivores, meaning they eat other animals. Wolves use their excellent sense of smell to help them find deer, beavers, rabbits and other prey. When the wolves spot their prey, they chase it until the prey tires. Then, the wolves surround it.

Wolves can run at speeds of up to 40 miles per hour. But many times the pack does not catch its prey. Some animals can outrun the wolves.





Wolves are caring parents. The mother wolf finds or digs a den before her pups are born. Wolf pups are born blind and helpless. The mother cares for the pups inside the den for a few weeks. She feeds them milk from her body. In the meantime, the father wolf brings food for the mother.

Wolves belong to a group of animals that also include foxes, coyotes, jackals, wild dogs and pet dogs. The **maned wolf** of South America is called the "fox on stilts." Can you see why? The **husky dog** looks like the wolf but is smaller. **African wild dogs** live in packs. They hunt large animals like zebras. The **gray fox** will climb a tree to escape from danger or search for prey. Thousands of years ago, the **dingo** was brought to Australia as a tame dog. Since then, it has become wild. **Coyotes** usually live alone or in pairs. Although the wolf's range has decreased, the areas where coyotes live have increased. The **raccoon dog** has a face like a raccoon. This small foxlike animal lives in eastern Asia.



Dingo



Coyote



Raccoon Dog



Maned Wolf



Husky

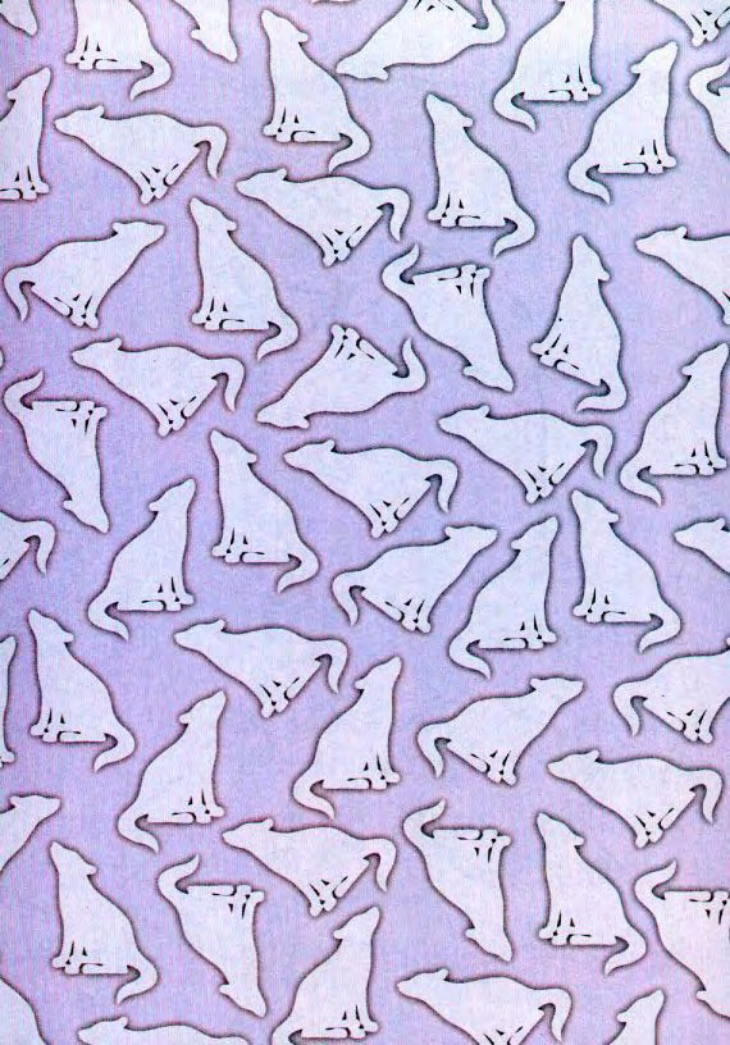


African Wild Dog



Gray Fox





Grizzly Bear

Grizzly bears once lived in large numbers from Canada to Mexico. Now, most grizzly bears live in national parks. Male grizzly bears stand 8 feet tall and weigh 800 to 1000 pounds. Grizzly bears have very good senses of smell and hearing. These senses make up for their poor eyesight.

Grizzly bears are omnivores—they eat both plants and animals. Their favorite foods are berries, leaves, fish and small animals. In autumn, grizzly bears spend a lot of time eating. They are fattening up to get ready for their winter sleep, or hibernation. Grizzly bears hibernate differently from other animals. Their body functions do not slow down, and they are easily awakened.



Think and Learn

1. Where do most grizzly bears live today? _____
2. Which senses make up for the grizzly bear's poor eyesight?

3. What do omnivores eat? _____
4. How do grizzly bears get ready for hibernation? _____

Dot-to-Dot

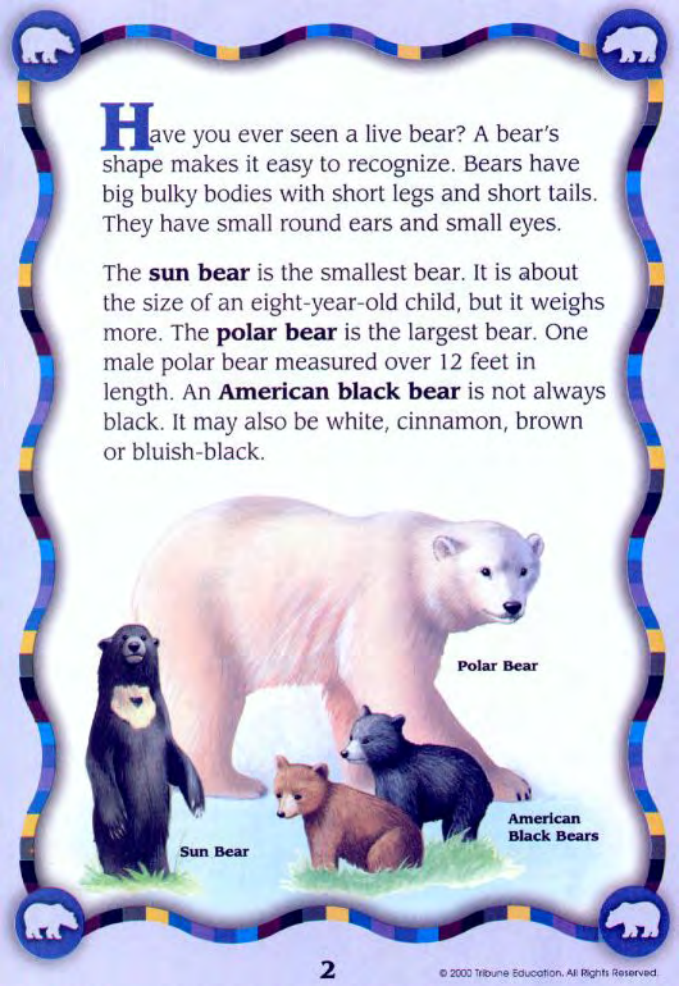
Connect the dots. Color the picture.



BEARS

Pull-Out Storybook





Have you ever seen a live bear? A bear's shape makes it easy to recognize. Bears have big bulky bodies with short legs and short tails. They have small round ears and small eyes.

The **sun bear** is the smallest bear. It is about the size of an eight-year-old child, but it weighs more. The **polar bear** is the largest bear. One male polar bear measured over 12 feet in length. An **American black bear** is not always black. It may also be white, cinnamon, brown or bluish-black.



Bears may look big and clumsy, but they can move fast. Some run faster than 30 miles per hour. Many bears are strong climbers and most are good swimmers. A **polar bear** has webbed feet and a long shape that make it a champion swimmer. **Grizzly bears** can climb trees when they are cubs. But as adults, most are too big and heavy. The **spectacled bear** lives in trees in the Andes Mountains of South America.

Spectacled Bear

Grizzly Bears

Polar Bear







A hungry polar bear will wait patiently at a hole in the ice until a seal comes up for air.

Bears are omnivores, meaning they eat both plants and animals. A bear's diet depends on where it lives. Polar bears eat more meat than other bears since there are few plants in the Arctic. Brown bears and black bears eat many different foods, including grass, nuts, berries, insects, fish and deer.

The sloth bear does not have front teeth. This helps it catch its favorite food—termites. After digging up a termite nest, the bear sticks its mouth in and sucks up the termites like a vacuum cleaner.



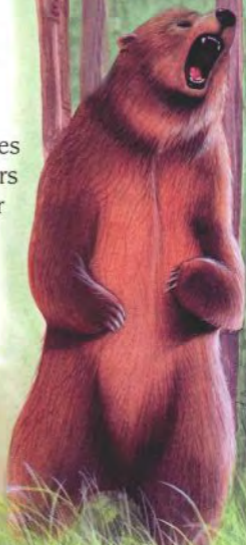


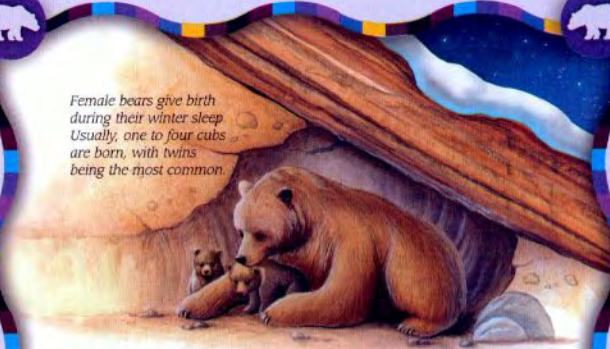
Bears spend most of their time alone. Mother bears with cubs are the exception. They spend between 1 and 3 years together.

Bears are generally peaceful animals. A bear may make a warning sound if another animal comes too close. When bears meet, the younger or smaller bear often runs away.

When a grizzly bear stands tall and shows its teeth, few animals will challenge it.


Sometimes adult polar bears will wrestle and play together.





Female bears give birth during their winter sleep. Usually, one to four cubs are born, with twins being the most common.

Bears living in places where food is scarce in the winter go through a period of winter sleep, or hibernation. To get ready for hibernation, a bear eats a lot of food in the fall. The food is stored as fat in the bear's body. Then, the bear finds or builds a den where it sleeps and stays warm until spring.




A mother polar bear will dig a snow cave to keep herself and her cubs warm.

Most bear cubs are born in dens. They are tiny and helpless at birth but are soon able to nurse on their own. A mother bear is devoted to her cubs. She cleans them and keeps them warm. Like other mammals, she feeds the cubs milk from her body. The cubs are ready to leave the den in spring. Mother bears teach their cubs many things—how to find food, how to swim, how to escape from danger and more. Bear cubs are playful! They enjoy running, wrestling, climbing and swimming.







There are eight main groups of bears. They are found only on four continents—North America, South America, Europe and Asia. Some species of bears are endangered, such as the giant panda and the spectacled bear.



The giant panda lives in a small area of bamboo forest in China.




Sun bears live in the lowland forests of Southeast Asia.




The American black bear is one of the most numerous bears in North America.

Asiatic black bears live in the mountain forests of southern and eastern Asia. They are sometimes called "moon bears" because of the moon-shaped markings on their chests.


Brown bears live primarily in the northern regions of North America, Europe and Asia. There are several different kinds, including the grizzly.



The scraggly sloth bear makes its home in the jungle areas of India, Pakistan and Sri Lanka.



The polar bear lives in areas bordering the Arctic Ocean.



The spectacled bear is South America's only bear. It gets its name from the markings around its eyes that look like glasses.





Moose

The largest member of the deer family is the moose. These huge animals are 10 feet long and weigh about 1,800 pounds. Male moose have very large, flattened antlers. Every year they shed their antlers and grow a new pair in spring. Moose enjoy water and are excellent swimmers. They usually live near marshes, lakes or in moist forests.



During the summer months, moose eat water plants, roots, leaves and grass. In winter, moose walk easily through the deep snow. They find tree shoots and twigs to eat. Moose live alone in the summer. When winter arrives, it is common for small bands of moose to stay together in the woods for warmth and protection.

Think and Learn

1. The moose is a member of the _____ family.
2. Each year moose shed their _____, then grow a new pair.
3. Where do moose usually live? _____

4. Why do moose stay together in small bands in winter?

Otter

Otters are members of the weasel family. Their long bodies have special features, or adaptations, that allow them to live most of the time in water. Otters have flat tails and webbed feet that help them swim. Their coarse, outer fur is waterproof. They also close their nostrils and ears when underwater.



Otters make their homes by digging burrows or finding caves near water. They mainly eat fish that they catch while swimming. But they also eat crayfish, frogs, snails and insects. Otters are fun to watch because they are so playful. They love to slide on their bellies down banks of mud or snow and splash into the water. They communicate with each other by barking, chirping and growling.

Think and Learn

1. Where do otters spend most of their time? _____
2. Otters have _____ feet.
3. What do otters eat? _____

4. How do otters communicate with each other? _____

Wild Turkey

Wild turkeys are large birds that live mainly on the ground. Males, or toms, may weigh as much as 24 pounds. Females, or hens, weigh only 12 pounds. Tom turkeys look different from hens. They have a flap of skin, called a snood, that falls over the beak. They also have a wattle, a flap of skin that grows from the throat. Both toms and hens have short rounded wings and heavy bodies. They fly for only short distances. They also have strong feet with four toes. This makes them very fast runners.



Wild turkeys live in woods near water. They eat seeds and insects but sometimes eat frogs or lizards. When threatened, they usually run away and hide. Wild turkeys sleep in tree branches at night.

Think and Learn

1. Where do wild turkeys live? _____
2. What features do toms have that hens do not? _____

3. What makes turkeys fast runners? _____

4. Where do wild turkeys sleep? _____

Porcupine

The porcupine (POR kyoo pighn) is a gnawing animal that is best known for its strong, sharp quills. Quills are bunches of hair that have grown together. The quills are white with black tips. They cover a porcupine's tail, sides and back. Porcupines are rather small, weighing between 15 and 20 pounds. They are also peaceful and never attack other animals.



Porcupines are nocturnal. This means they sleep during the day and are active at night. They spend most of the night in trees looking for food. They might climb 60 to 70 feet up a tree to reach young leaves. In summer, they eat seeds, fruits and leaves. In winter, they eat twigs, leaves, bark and pine needles.

Think and Learn

1. What are quills? _____
2. Why don't porcupines attack other animals? _____

3. Porcupines are _____, they sleep during the day.
4. What do porcupines eat during the summer? _____

Color Me



I am a _____.

Striped Skunk

The skunk is known for its black and white fur and its horrible odor. The striped skunk is the most common kind of skunk. It gets its name from the white stripes running down its back. Skunks are about the size of a small cat, measuring 15 inches long. They weigh 5 to 6 pounds. Skunks have short legs, an arched back, a long bushy tail and a patch of white fur on the forehead.



Skunks make their dens in burrows, hollow trees and under buildings. They are found in forests, grasslands and in towns. Even though skunks annoy people with their odor, skunks are very helpful animals. Skunks eat harmful insects, rats, mice and other small animals that damage crops and fields.

Think and Learn

1. What two things are skunks known for? _____

2. A skunk is about the same size as a small _____.
3. Where are skunks found? _____
4. How are skunks helpful to people? _____

Animal Defenses

Skunks and porcupines have adaptations that help them defend themselves. Because of their coloring, skunks do not blend in with their environment. If an animal threatens a skunk, the skunk warns the animal by stomping its feet. If the animal does not leave, the skunk sprays the animal with a bad-smelling liquid.



Porcupines ignore most animals. However, if a porcupine feels threatened, it raises the quills on its sides and back. Then, it swings its quill-covered tail at the animal. The quills are barbed. They get stuck in the skin of the animal and are very painful.

Think and Learn

1. How does a skunk warn an animal to go away? _____

2. What does a porcupine do when it feels threatened?

White-Tailed Deer

The white-tailed deer is easy to recognize by its snow-white tail. White-tailed deer are found throughout North America, but they are most common in southern Canada and northern United States. Only the males, called bucks, grow antlers. These antlers are shed each winter. White-tailed deer eat nuts and berries, as well as the buds and twigs from trees.



White-tailed deer are fast runners and great jumpers. Bucks frequently fight during mating season. They use their antlers and hooves as weapons. Female deer, called does, give birth to one to three fawns in the spring. The fawns are covered with white spots that disappear in six months.

Think and Learn

1. What are white-tailed deer recognized by? _____
2. Only bucks grow _____.
3. What do deer eat? _____
4. How is a fawn's coloring different from an adult deer?

Pronghorn

The pronghorn is North America's fastest animal. It can run about 40 miles per hour and jump very high. The pronghorn is mostly covered with reddish-brown fur and has white fur on the lower parts of its body, including the tail. The pronghorn lifts its fur straight up to cool its body in hot weather. In cold weather, it holds its fur flat against its body for warmth. The pronghorn has long horns that it never sheds.



Pronghorn live in the grasslands of western United States and Canada. They eat shrubs, sagebrush, grass and twigs. In summer, they live in small groups. As winter comes, they form large herds of 100 or more.

Think and Learn

1. The pronghorn is North America's _____ animal.
2. How does a pronghorn keep cool in hot weather?

3. Where do pronghorn live? _____

4. What do pronghorn eat? _____

Compare and Contrast

Read about the white-tailed deer and the pronghorn. Then, use the Venn diagram and the facts you have learned to compare and contrast these two animals. Write facts that tell only about the white-tailed deer on the left, facts that tell only about pronghorn on the right and facts that tell about both in the middle.

White-Tailed Deer



Both

Pronghorn



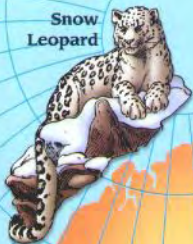
ASIAN

ANIMALS



Giant Panda

Snow
Leopard



Gibbon



Sloth Bear

Tiger



Malayan Tapir



Chevrotain



Water Buffalo



Orangutan

Wild Boar



Chevrotain

Chevrotains (SHEHV ruh taynz) are very small animals with cowlike hooves. They are sometimes called “mouse deer” because they look like tiny deer. Chevrotains have two long tusklike teeth and no other upper teeth. They use their long upper teeth to defend themselves from other animals.



Chevrotains live in the tropical forests of India and Southeast Asia. They eat at night, keeping hidden in the underbrush. They feed on fruit, leaves, twigs and grass. During the day, chevrotains hide behind rocks or in the bushes. They are quiet, timid animals. Chevrotains live alone except during the mating season. A female chevrotain usually gives birth to two babies, called fawns.

Think and Learn

1. Chevrotains are also called _____.
2. What do chevrotains use to defend themselves? _____

3. Where do chevrotains live? _____

4. When do chevrotains eat? _____



Giant Panda

The giant panda is a very large black and white furry animal. Scientists used to classify pandas as part of the raccoon family. Now, they classify pandas as bears. The giant panda is found in bamboo forests in the mountains of west central China.



Pandas reach a height of 5 feet and weigh about 200 pounds. They easily climb trees and spend most of their time eating bamboo plants. They eat every part of the plant. Pandas have a special thumblike toe on their front feet used for holding bamboo stems. Their teeth are large and wide to help them grind up the bamboo.

Think and Learn

1. Scientists now classify the giant panda as a _____.
2. Where do giant pandas live? _____
3. Pandas eat all parts of the _____ plant.
4. How do pandas use the thumblike toe on their front feet?

A Vanishing Act

The panda is one of many endangered animals. Endangered animals may soon disappear from Earth. That's what happened to dinosaurs, dodo birds and passenger pigeons. They disappeared, or became extinct.

Write the letter that comes before each letter in the alphabet to decode the names of some endangered animals.

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

N P V O U B J O H P S J M M B

B G S J D B O F M F Q I B O U

X I P P Q J O H D S B O F

C M B D L S I J O P

H J B O U Q B O E B

T F B M J P O

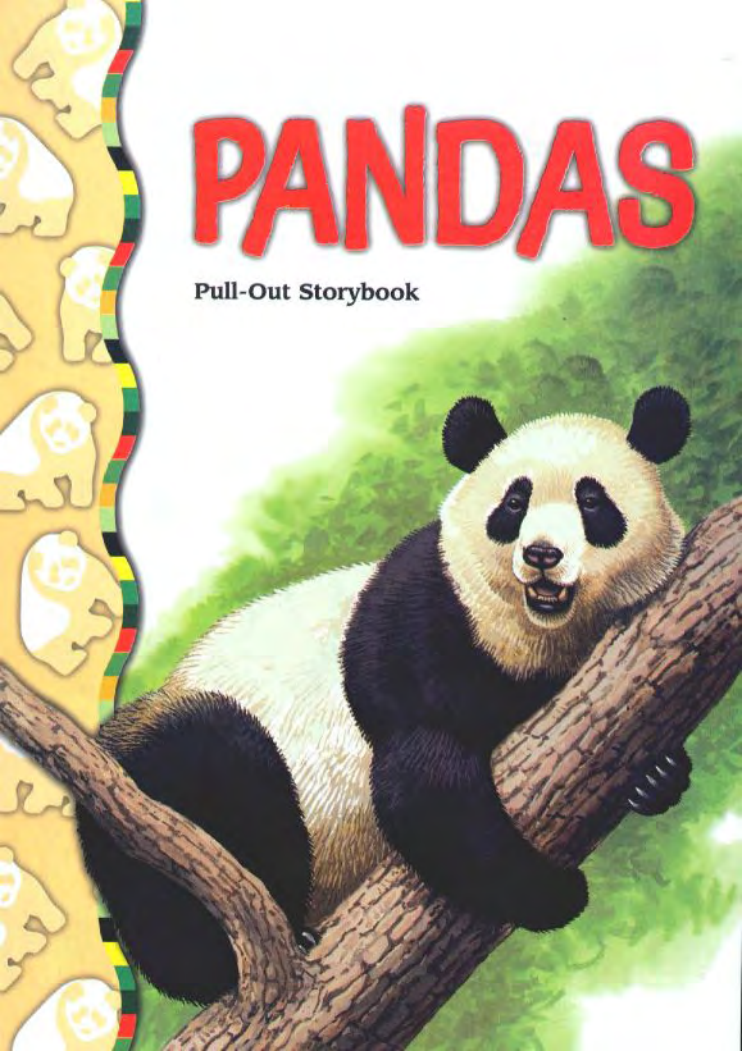
H S B Z X P M G

D I F F U B I



PANDAS

Pull-Out Storybook



Giant pandas live in China. They look like teddy bears with their large heads and chubby, furry bodies. Whenever pandas are shown off at a zoo, crowds of people come from everywhere to see them. The Chinese people have made the giant panda a symbol for their country.



Giant pandas are easy to recognize with their black-and-white coloring. A panda's fur looks soft, but it is actually stiff and coarse. The thick, waterproof fur keeps the animal warm in cold weather and dry in the rain.





Giant pandas can spend 12 to 16 hours a day eating! They feed mainly on bamboo, which grows in the forests where they live. They prefer to eat the tender shoots and leaves. But, they will eat the thick, large stems, too. The panda uses its strong teeth to strip away the stem's outer covering to eat the soft insides.



A female panda has one or two cubs at a time. The mother panda gives birth in a den. The den is usually in a cave or hollow tree. As soon as a cub is born, the mother cuddles it in her arms. For the first few days, she holds her baby day and night, not leaving the den even to eat. Panda cubs are helpless for the first few months of their lives. Their eyes don't open for 40 days. They don't start crawling until they are about 3 months old.





A panda cub grows quickly. By 5 months, it starts to eat bamboo. At 7 months, the cub can run and climb trees. As the cub grows, its mother takes it along on feeding trips. She carries the cub by the neck and places it in a safe spot. Most young pandas stay with their mothers until they are 18 months to 2 years old. During that time, the mother teaches her cub the skills it needs to survive.



Giant pandas, both young and old, have flexible bodies that they can bend and twist in many directions. A giant panda can stand on its head. It can turn somersaults, and will often roll over again and again. Touching its head with its foot is easy for a panda. It's easy for a giant panda to stand on its head. While lying on its back, a giant panda can scratch one foot with the other.





Giant pandas are endangered, or could die out. Hunting pandas and destroying bamboo forests have greatly reduced the panda population. Today, fewer than 1,000 giant pandas live in the wild. The Chinese government is working to save the pandas. Hunting pandas in China is against the law. Also, nature reserves have been set up to protect the panda's habitat, or home. These reserves also protect the bamboo that pandas need for food.







Gibbon

Gibbons (GIHB uhnz) are the smallest members of the ape family. Gibbons are built for swinging through the trees. In fact, it is awkward for them to walk on the ground. Their long arms enable them to “fly” from branch to branch, with leaps over 30 feet.

Gibbons are found in the rainforests of Southeast Asia. They live in the trees, where they get most of their food. They eat seeds, leaves, fruits, young birds and insects. Gibbons live in family groups made up of a male, a female and their young. Gibbons mate for life. At night, the gibbon family huddles together for safety.



Think and Learn

1. Gibbons are the smallest member of the _____ family.
2. How are gibbons built for swinging through trees?

3. Where are gibbons found? _____
4. Gibbons live in _____ groups.



Rainforest Maze

Help the gibbon swing through the maze.



Malayan Tapir

The Malayan tapir (muh LAY uhn TAY per) is related to the horse and the rhinoceros. It canters and gallops like a horse. Its snout is an upper lip that works much like an elephant trunk. It has a pig-shaped body and weighs about 650 pounds. Its coat is brownish-black and cream-colored.

Malayan tapirs are found in Sumatra and Malaysia in tropical rainforests near rivers and lakes.

At night, they look for leaves, grass and water plants to eat. Malayan tapirs love to dive and swim in the water. They lie in mud holes where they get relief from ticks and insects.



Think and Learn

1. To what animals are the Malayan tapirs related?

2. Describe the tapir's snout. _____

3. When do Malayan tapirs find food? _____

4. What do tapirs do in water? _____

Orangutan

Orangutan (oh RANG uh tan) is a Malay word that means "forest man." Do you think an orangutan looks like a person? It is a large animal that grows to be 5 feet tall. Its arms, hands and feet help the orangutan to live in the trees. An orangutan is easily identified by its long, shaggy, reddish-brown hair.

Orangutans are found in Borneo and Sumatra. They eat fruits, nuts, seeds and leaves, as well as lizards, tree frogs, eggs, young birds and insects. Orangutans build sleeping platforms in the trees. They sometimes use large leaves as blankets when it rains. Orangutans do not live in family groups like other apes.



Think and Learn

1. What does the word "orangutan" mean? _____
2. Where do orangutans live? _____
3. What color is orangutan hair? _____
4. What do orangutans build for sleeping? _____
5. How do orangutans sometimes use leaves? _____

Sloth Bear

The sloth bear is a huge, shaggy bear. It has a mane of fur around its neck. Sloth bears have very long snouts. They live in the rocky canyons and hills of India and Sri Lanka. They hunt for termites and bee nests at night. A sloth bear can climb any tree to find food. It uses its long claws to rip open a termite or bee nest. The sloth bear is so noisy when it eats that people can hear it 600 feet away!



Sloth bears sleep in caves during the day. They are also very noisy sleepers. They snore as loud as they eat! Sloth bears live in family units. Both parents care for the cubs. The cubs stay with their parents for 3 years.

Think and Learn

1. Sloth bears have very long _____.
2. Where do sloth bears live? _____

3. What do sloth bears eat? _____
4. What do sloth bears do during the day? _____



Snow Leopard

The snow leopard (snow leopard) is a large cat that lives in the mountains of central Asia. It is 5 feet long and weighs about 90 pounds. The snow leopard is known for its beautiful fur. Its dense undercoat is covered with long gray and cream-colored hair and speckled with black spots. The snow leopard's large paws are padded for warmth.



The fierce snow leopard does not roar like a lion but purrs like a house cat. Like most cats, snow leopards hunt animals for food. The snow leopard is endangered. It has been overhunted for its fur. It has also lost its natural prey due to the clearing of land for farming.

Think and Learn

1. Where do snow leopards live? _____
2. The snow leopard's paws are padded for _____.
3. What sound do snow leopards make? _____
4. Why are snow leopards endangered? _____

Tiger

The tiger is the largest member of the cat family. It is known by its orange and black stripes. Tigers are found only in Asia. They live in different environments—from cold regions to rainforests. Tigers live alone. Every tiger claims its own territory. Tigers, like all cats, stalk their prey and swiftly attack. Tigers hunt at night. They hunt deer, antelope and wild pigs.



Female tigers, called tigresses, give birth every 2 years to a litter of three or four cubs. The tigress is a loving mother. She teaches her young how to hunt and care for themselves. The cubs stay with their mother for 2 years.

Think and Learn

1. The tiger is the largest member of the _____ family.
2. Tigers are found only in _____.
3. What animals do tigers hunt? _____

4. What do tigresses teach their cubs? _____



Hidden Pictures

The tiger's stripes help keep it well hidden in the jungle. Find the tigers hidden in the picture. Color the picture.



Water Buffalo

The water buffalo is a gigantic animal that is 10 feet long and 6 feet tall. It has thick, grayish-black skin. Water buffalo have large horns. The horns grow out of each side of the head and curve upward. Water buffalo love water. They are often found resting in water up to their noses. Water buffalo also roll in mud until they are covered with it. This helps protect them from insects.



Water buffalo are wild cattle. Some have been tamed and help with rice farming. Rice is grown in flooded fields. Water buffalo can easily pull a plow through water that is knee deep. Although they look like gentle animals, water buffalo can become very fierce. However, they are friendly to people they know.

Think and Learn

1. Large _____ grow out of a water buffalo's head.
2. What do water buffalo like to rest in? _____
3. Why do water buffalo roll in mud? _____

4. How do water buffalo help with rice farming? _____

Wild Boar

The wild boar is a wild hog found in forests throughout Asia. It can reach a length of 4 to 5 feet and weighs an average of 300 pounds. Its long piglike snout is used for lifting, pushing and digging. The wild boar has two long tusks that grow out of its lower jaw. These tusks are 1 foot long. Wild boars use their tusks to protect themselves.



Wild boars like to eat almost anything. They use their snout to search for leaves, fruit, roots, worms and insects. Wild boars can see and hear well. However, they rely mainly on their sense of smell. Male and female boars travel in separate herds. The female boars raise their young alone.

Think and Learn

1. Where are wild boars found? _____
2. How do wild boars use their snouts? _____

3. Wild boars use their _____ for protection.
4. Which sense do wild boars rely on most? _____

CENTRAL and SOUTH AMERICAN

ANIMALS



Jaguar



Spider Monkey



Giant Armadillo



Giant Anteater



Chinchilla



Woolly Monkey



Llama



Macaw



Two-Toed Sloth



Toucan

Chinchilla

Chinchillas (chihn CHIHL uhz) look like large mice, but they are actually related to squirrels. They have thick, soft fur. Their blue-gray color is beautiful. In the 1500s, Spanish explorers brought chinchillas back to Europe. The demand for chinchilla fur nearly caused this animal to be killed off. Today, a small chinchilla population lives in the Andes Mountains.



Chinchillas eat roots and grass. Water is scarce high in the Andes. However, chinchillas get enough water from the plants they eat. Chinchillas are nocturnal, or active at night. They sleep during the day. At sundown, they begin looking for food.

Think and Learn

1. Chinchillas are related to _____.
2. Describe chinchilla fur. _____

3. Where do chinchillas live? _____
4. How do chinchillas get water? _____

Giant Anteater

The giant anteater is an animal that eats ants and termites. Giant anteaters have three large claws on each paw. They use their claws to rip open ant nests. Giant anteaters have a sticky tongue that is 2 feet long. They push their tongue into an anthill to get the ants. Giant anteaters cannot see well. Instead, they find ants with their sharp sense of smell.



Giant anteaters are found only in Central and South America. They never dig burrows or make homes. Instead, they wander alone looking for food until they tire. Then, they lie down in a hidden place, cover their heads with their long bushy tails and fall asleep.

Think and Learn

1. What do giant anteaters eat? _____
2. How do giant anteaters use their claws? _____

3. Giant anteaters have _____ tongues.
4. Where do giant anteaters sleep? _____



Giant Armadillo

The giant armadillo (ahr muh DIHL oh) is the largest of all armadillos. It can reach a length of 5 feet and weigh as much as 130 pounds. Giant armadillos are found only near rivers in the eastern part of South America. Early Spanish explorers named the armadillo. The name means "little armored one." Armadillos are covered with hard bony plates called scutes.



Giant armadillos use their long curved claws for digging burrows and for finding food. They eat termites, worms, snakes and insects. Armadillos are quiet animals that prefer to live alone. When threatened, they either run away or crouch low. Their scutes protect their soft undersides.

Think and Learn

1. Where are giant armadillos found? _____

2. What does the word "armadillo" mean? _____
3. What are scutes? _____
4. What do armadillos use their claws for? _____

Jaguar

The jaguar (JAG wahr) is a member of the cat family. It is 6 feet long and weighs about 300 pounds. This beautiful animal has yellowish-tan fur with black dots encircled by black rings. Some jaguars are almost entirely black. The jaguar is found throughout Central and South America in many different habitats. It can live in shrub country, rainforests, mountains and woods.



Jaguars like to hunt almost any kind of animal, including fish, turtles, deer and wild pigs. They often lie on tree branches and wait until they can pounce down on their prey. Not only are jaguars skilled climbers, they are also great swimmers. They will often hunt in the water, especially when the rivers have flooded.

Think and Learn

1. The jaguar is a member of the _____ family.
2. In what habitats do jaguars live? _____

3. Where do jaguars often wait for prey? _____
4. Jaguars are skilled _____ and great _____.

Llama

Llamas (LAH muhz) belong to the camel family. They are 4 to 5 feet tall and weigh over 200 pounds. Llamas come in many colors—white, tan, brown and black. Llamas live in the semi-desert region near the Andes Mountains. They eat shrubs and other plants. Like the camel, a llama can live for weeks without water. The llama gets the water it needs from the plants it eats.



Llamas have been tamed for centuries. Their wool is used for making clothing, ropes and blankets. Llamas are useful pack animals. They travel easily through mountains carrying heavy loads. However, if a llama thinks it has worked long enough for one day, it sits down and refuses to move.

Think and Learn

1. Llamas belong to the _____ family.
2. What do llamas eat? _____
3. Llamas can live for weeks without _____.
4. Why are llamas useful pack animals? _____



Macaw

Macaws (muh KAWZ) are the largest members of the parrot family. They come in many bright colors. All macaws have powerful hooked bills. They use their bills to help them climb and to break open nuts and seeds. Macaws have four toes on each foot. Their feet are well suited for perching, climbing and holding objects. Macaws are only found in rainforests. They live in holes that they make in tree trunks.



Macaws are in danger of extinction, or dying out. They are losing their homes as the rainforest is destroyed. Laws protect these birds, but people still capture them to sell as pets. Macaws are not good pets because they like to scream and bite.

Think and Learn

1. Macaws are members of the _____ family.
2. All macaws have powerful, hooked _____.
3. What do macaws use their feet for? _____

4. Why are macaws in danger of extinction? _____

Spider Monkey

Spider monkeys are small monkeys well suited for living in trees. In fact, they rarely come down to the ground. These monkeys move quickly through trees by swinging and jumping from branch to branch. Spider monkeys have tails that are longer than their bodies. These tails can easily grab and pick up things.

Spider monkeys are found in rainforests from southern Mexico to the northern part of South America. They eat nuts and fruit and sometimes eggs. Spider monkeys live in groups, or bands, of 10 to 40 monkeys. Every band of monkeys lives in its own area, or territory. One band of monkeys will not go into the territory of another band.



Think and Learn

1. How do spider monkeys move quickly through trees?

2. Their _____ can grab and pick up things.
3. What do spider monkeys eat? _____
4. Spider monkeys live in groups called _____.



Dot-to-Dot

Spider monkeys live in rainforests. They usually run away and hide if another animal scares them. Connect the dots to find the hidden monkey. Then, color the picture.



Toucan

Toucans (TOO kanz) are birds with large colorful bills. Although a toucan bill looks heavy, it is really very light. The bill is hollow. It is made from a hornlike material. Toucans live in the rainforests of Central and South America. Toucans eat fruit, large insects, lizards and young birds. A toucan sits on a branch and reaches for fruit with its long bill. The curved end of the bill helps the toucan pick the fruit and hold on to it.



Toucans make their nests in the holes of trees. Both the male and female take turns sitting on the eggs. Newly hatched toucans are blind and have no feathers. After 6 to 7 weeks, the young toucans are ready to live on their own.

Think and Learn

1. Toucans have large colorful _____.
2. Where do toucans live? _____

3. What do they eat? _____

4. Where do toucans make nests? _____

Two-Toed Sloth

A sloth (slawth) is an animal that lives in trees. Sloths rarely go down to the ground. In fact, they cannot walk at all. The two-toed sloth has two long, curved claws on its front legs. Sloths use their claws to hold onto tree trunks and branches. They often hang upside down. Sloths move very slowly along tree branches, paw over paw, while hanging upside down.



Two-toed sloths are found from the southern part of Central America to central Brazil and Peru. They eat leaves, twigs and buds. Sloths are nocturnal, or active at night. It is hard to see sloths sleeping in the trees during the day. Green algae often grow on the sloths' fur, so the sloths blend in with the leaves.

Think and Learn

1. Sloths cannot _____ at all.
2. What do sloths use to hold onto branches? _____
3. When are sloths active? _____
4. How do sloths blend in with tree leaves? _____

Woolly Monkey

Woolly monkeys are named for their beautiful thick, woolly coats. They are found in forests along the Amazon River in Columbia, Ecuador, Peru and Brazil. They eat fruit, flowers and leaves. Unlike other tree-living monkeys, woolly monkeys are often found on the ground. While on the ground, they stand straight up, using their tails for support.



Woolly monkeys live in groups, or bands, of 10 to 30 monkeys. They move more slowly than other monkeys. When frightened, they swing through tree branches and hide. Woolly monkeys are friendly. They are often seen in the company of other kinds of monkeys.

Think and Learn

1. Woolly monkeys are named for their _____.
2. How do woolly monkeys stand while on the ground? _____

3. Woolly monkeys live in groups called _____.
4. Woolly monkeys move more _____ than other monkeys.

AUSTRALIAN

ANIMALS



Wallaby



Giant Gray Kangaroo



Koala



Dingo



Tasmanian Devil



Echidna



Kookaburra



Wombat



Dugong



Platypus

Dingo

The dingo (DIHNG goh) is the only wild member of the dog family found in Australia. Dingoes are about the same size as medium-sized dogs. Their ears stand up, and they have bushy tails. Dingoes cannot bark but can yelp and howl. Dingoes are excellent hunters. They hunt alone or in family groups for small animals to eat. Scientists think Aborigines, native Australians, brought dingoes to Australia thousands of years ago.



Dingoes give birth only once a year to three to six puppies. Both parents care for the puppies and keep them hidden. The Aborigines search for the puppies to train them for hunting. Adult dingoes cannot be trained.

Think and Learn

1. The dingo is a member of the _____ family.
2. Dingoes cannot _____, but they can yelp and howl.
3. What do dingoes hunt for? _____
4. Why do Aborigines look for dingo puppies? _____

Dugong

The dugong (*DOO gahng*) is related to the manatee. Dugongs are mammals, or animals that feed their young with their mothers' milk. Even though dugongs breathe air, they spend their entire life in water. They surface only to breathe about every 1 to 10 minutes. They have an unusual snout. It is rounded, with a large whiskered upper lip. Only male dugongs grow tusks.



Dugongs are found in the Indian Ocean, the Red Sea and off the northern coast of Australia. Dugongs eat only sea grass. They are often called sea cows because they graze on sea grass just as cows graze on field grass.

Think and Learn

1. What are dugongs related to? _____
2. Only male dugongs grow _____.
3. Where are dugongs found? _____

4. Dugongs are often called _____.

Echidna

The echidna (ih KIHD nuh) is sometimes called a spiny anteater. It is found throughout Australia in open forests. The echidna's body is covered with coarse hair and pointed spines. Echidnas sleep in hollow logs during the day. At night, they use their sharp claws to scratch up insects. They eat the insects by licking them up with their long sticky tongues. Echidnas do not have teeth.



Echidnas are mammals that lay eggs. Mammals are animals whose young feed on the mother's milk. Female echidnas lay one egg each year. The mother keeps the egg in her pouch, where it hatches. The baby stays in the pouch for several weeks, drinking the mother's milk and growing.

Think and Learn

1. What is another name for an echidna? _____
2. When do echidnas sleep? _____
3. How do echidnas eat insects? _____

4. Echidnas are _____ that lay eggs.

Giant Gray Kangaroo

The giant gray kangaroo is the largest of all kangaroos. It grows to 7 feet tall. Kangaroos have huge feet and long, powerful tails. When kangaroos stand, they lean on their tails for balance. Kangaroos are found in the open forest and bush country of Australia. They eat fruit, leaves and roots. Kangaroos travel in groups called mobs.



Kangaroos have excellent hearing, vision and sense of smell. They are gentle, timid animals. Their senses and speed help them escape from danger. Kangaroos are marsupials. This means that they carry their babies, called joeys, in pouches. At birth, a joey is the size of a bee. It lives in its mother's pouch for 1 year.

Think and Learn

1. What does a kangaroo use its tail for? _____
2. Where do kangaroos live? _____

3. Kangaroos travel in groups called _____.
4. A baby kangaroo is called a _____.



Australian Animal Scramble

Unscramble the words below to find the names of Australian animals. The words below will help you.

1. R A O K A O R B U K

2. A L K O A

3. L A B W Y A L

4. D I H A C E N

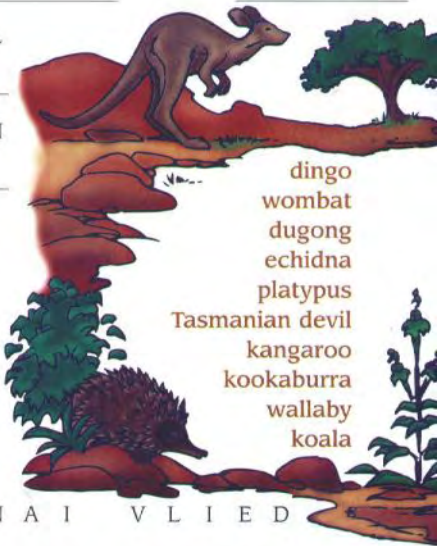
5. G O U D G N

6. O G N I D

7. B W O T A M

8. M A S T A N N A I V L I E D

9. G N A K A O O R 10. S Y P A L T P U



- dingo
- wombat
- dugong
- echidna
- platypus
- Tasmanian devil
- kangaroo
- kookaburra
- wallaby
- koala

Koala

Although many people call the koala (koh AW luh) a koala bear, it is not a bear. The koala is a marsupial—a mammal with a pouch for carrying its young. The koala has beautiful gray, woolly fur. If threatened, koalas defend themselves with their sharp claws.

Koalas eat the leaves of eucalyptus trees. Koalas are found in the eucalyptus forests on the east coast of Australia. The only time a koala climbs down from a tree is to move to another tree. They get the water they need from the leaves they eat. Koalas are nocturnal and sleep 18 hours during the day. Female koalas have one baby at a time. The baby crawls into the mother's pouch, where it stays for 6 months. Then, the mother carries the baby on her back for 4 or 5 months.



Think and Learn

1. What is a marsupial? _____

2. What do koalas eat? _____
3. When do koalas climb down a tree? _____
4. How long does a baby koala stay in its mother's pouch?

Kookaburra

The kookaburra (KOOK uh ber uh) is a bird that lives in forests in the southern parts of Australia. It is best known for its loud screaming laughter. The kookaburra screams its laughing sounds at dawn and at dusk. Kookaburras make their homes in holes in trees. They eat a wide variety of foods, such as caterpillars, fish, small mammals, frogs and worms. Insects, however, are their favorite food.



Kookaburras usually lay one to four eggs in spring. Male kookaburras protect the nest. Young kookaburras stay in their parents' territory for up to 4 years. The young kookaburras even help to feed their parents' new babies.

Think and Learn

1. The kookaburra is known for its loud screaming _____.
2. Where do kookaburras make their homes? _____

3. A kookaburra's favorite food is _____.
4. How do young kookaburras help their parents? _____

Platypus

The platypus (PLAT ih pus) is a mammal that has a bill like a duck and a flat, beaverlike tail. It is found near rivers and streams in eastern Australia and Tasmania. The platypus is awkward on land but swims gracefully. It has claws under its webbed toes. It uses its claws for digging burrows and getting food. The platypus eats large amounts of snails, worms, shrimp and small fish.



The male platypus is poisonous. It has a poison gland attached to a hollow claw on each hind leg. A scratch from this claw can kill an animal or make a human very sick. The female platypus lays her eggs in a burrow lined with leaves. When the babies hatch, she holds them with her tail. The babies drink milk from her body.

Think and Learn

1. The platypus has a _____ like a duck.
2. What does a platypus use its claws for? _____

3. The male platypus is _____.
4. How does a mother platypus hold her babies? _____

Tasmanian Devil

The Tasmanian devil is a marsupial—a mammal with a pouch to raise its young. It is found only on the island of Tasmania, off the southern coast of Australia. The Tasmanian devil looks somewhat like a small bear. It has a large head, stocky body and strong jaws and teeth. It is named for its bad temper and loud throaty growl.



The Tasmanian devil is nocturnal. It rests during the day in a hollow log or between rocks. At night, it hunts for food. It is a scavenger—it eats the remains of dead animals. It also eats sheep, chickens, reptiles and other small animals. The female Tasmanian devil keeps her young in her pouch for 15 weeks. When the furry babies come out, they still need their mother's milk for several months.

Think and Learn

1. The Tasmanian devil looks like a small _____.
2. What is the Tasmanian devil named for? _____

3. What does the Tasmanian devil do at night? _____
4. A _____ eats the remains of dead animals.

Wallaby

Wallabies (WAHL uh beez) belong to the kangaroo family. Like kangaroos, they stand on their hind legs and use their tail for balance. Wallabies are found in Australia, New Guinea and Tasmania. They live in grasslands or in woods. They graze on plants in the early morning and late afternoon. During the heat of the day, they rest in the shade. When the weather is very hot, wallabies lick their forearms and paws to cool themselves. Wallabies do not drink much water. They get enough water from the plants they eat.



Like other marsupials, wallabies carry their young in a pouch. The baby crawls through its mother's fur and climbs into the pouch after it is born. There, it drinks milk and grows.

Think and Learn

1. Wallabies belong to the _____ family.
2. During the heat of the day, wallabies rest in the _____.
3. How do wallabies cool themselves in hot weather?

4. Wallabies get water from the _____ they eat.

Wombat

A wombat (WAHM bat) is a marsupial that looks like a small bear. However, it acts more like a rabbit or a mouse. Wombats have two upper and two lower front teeth that never stop growing. They use their strong legs and claws for digging and burrowing. Adult wombats weigh up to 75 pounds.



Wombats live in dry climates in southern Australia and Tasmania. They can go without water for a long time. Wombats stay in underground burrows all day. At night, they come out to eat roots and leaves. A wombat builds a nest of leaves and bark, where it gives birth to one baby. The baby spends the first part of its life in its mother's pouch. A wombat can live up to 25 years.

Think and Learn

1. What do wombats use their claws for? _____

2. Wombats live in _____ climates.
3. When do wombats eat? _____
4. How long can a wombat live? _____

AFRICAN

ANIMALS

Lion



Vulture



Ostrich



Zebra



Gorilla



Chimpanzee



Black Rhinoceros



African Elephant



Hippopotamus



Giraffe





African Elephant

The African elephant is the world's largest land animal. A male, or bull, can grow to 11 feet tall and 24 feet long. It can weigh as much as 14,000 pounds. Females, called cows, are smaller. Elephants have trunks that they use like hands. They can easily pick up small fruits or lift tree branches with their trunks. Elephants spend



most of the day eating leaves, grass, small branches, bark, coconuts and berries. They also drink large amounts of water every day.

African elephants are found in the warm grasslands and forests of Africa. They live with other animals, such as lions, hyenas, giraffes and zebras. Lions and hyenas will attack baby elephants and sick elephants. Adult elephants are safe from most predators.

Think and Learn

1. The female elephant is called a _____.
2. Elephants use their _____ like hands.
3. What do elephants eat? _____

4. Adult elephants are safe from most _____.

Elephant Adaptations

Adaptations (ad ap TAY shuhnz) are special body parts or behaviors that animals have to survive in their environment. Some elephant adaptations help them live in hot places. They flap their large ears to cool off. They also do not have a thick layer of fat, like arctic animals have.



The most unusual elephant adaptation is its trunk. Elephants use their trunks to get food and water, cool off, breathe, touch things, smell, make sounds and “talk” to other elephants. Small “fingers” at the end of the trunk can pick up very small objects.

Think and Learn

1. Label the elephant adaptations in the picture.
2. How do elephants use their trunks? _____



Elephant Facts

Fill in the blanks on this page to make a fact sheet on African elephants.

What Elephants Look Like

1. Height _____
2. Length _____
3. Weight of an adult _____
4. What does an elephant look like? _____

Where Elephants Live

1. Where do elephants live? _____

2. What other animals are found where elephants live? _____

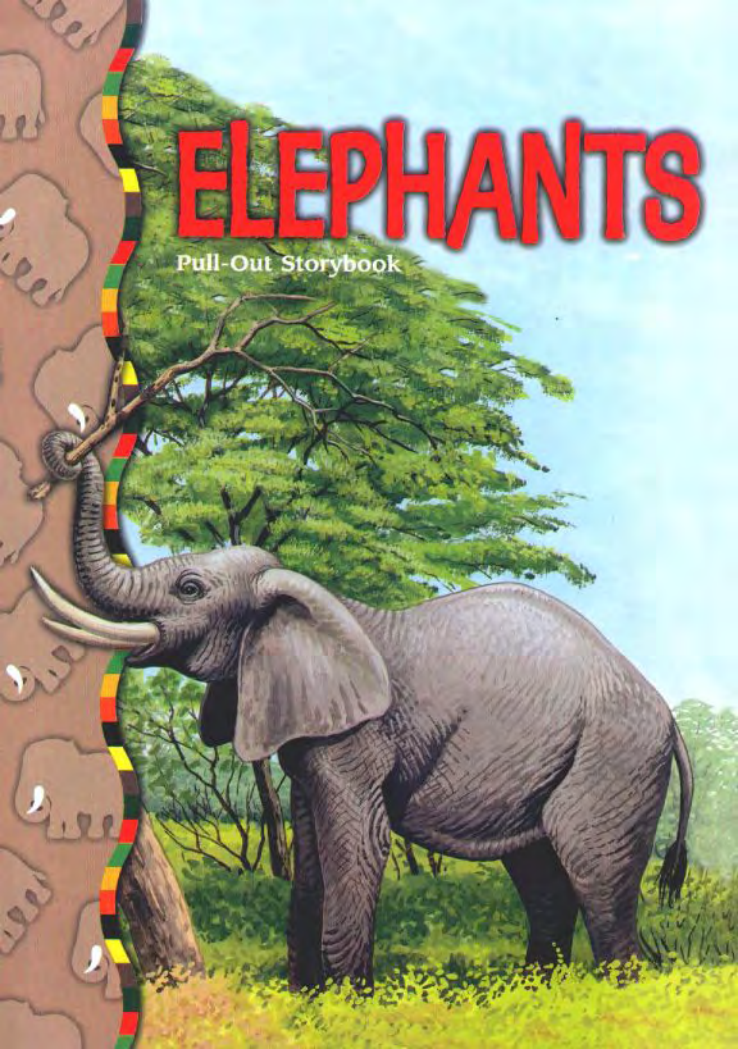
Eating Habits

1. What do elephants eat? _____

2. What eats elephants? _____

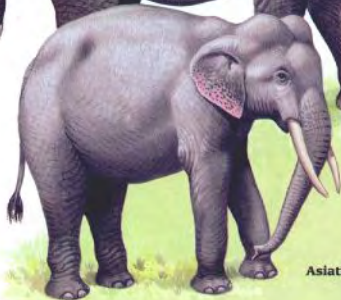
ELEPHANTS

Pull-Out Storybook





African Elephant



Asiatic Elephant

Elephants are the largest animals on land. They are the only animals with long flexible trunks. There are two kinds of elephants. The African elephant lives in Africa. The Asiatic, or Indian, elephant lives in India. It is easy to tell the two elephants apart. African elephants are bigger. Their larger ears cover their shoulders. Asiatic elephants have much smaller ears.

Almost everything about an elephant's body is huge. An elephant's trunk can be 5 feet long. Elephant tusks are actually upper front teeth that never stop growing. The tusks can grow to 8 feet long. An elephant's heart is five times bigger than a human heart. Its large stumplike legs are strong enough to support the elephant's weight—about the weight of 100 people.





Elephants use their trunks in many ways. They use them to sniff the air and ground to find food. They use them to reach into treetops and pull down branches and leaves. They even use them like straws to drink water. Did you know that an elephant's trunk holds more than 2 gallons of water? Elephants also use their trunks to take a "shower." They fill up their trunks with water and spray themselves.



Elephants give birth to one baby at a time. When the baby is born, the other females in the herd sniff it and touch it gently. Later, they help look after the baby as it grows. A baby elephant stands about 3 feet at birth and weighs about 200 pounds. The baby grows quickly, gaining 30 pounds a month. Baby elephants stay with their mothers until they are 12 to 14 years old.



Baby elephants love to play. They chase and push one another. They grab each other's tail with their trunks. They also climb on top of each other and have "play fights." As the young elephants play, an older sister or aunt usually watches them. Playing helps young elephants learn the rules of the herd. It also teaches them how to get along with other elephants.





Elephants communicate, or “talk,” to each other by making different kinds of sounds. They also communicate by touching each other. Elephants show fondness by rubbing their trunks together. They might also stand with their heads touching. Mother elephants touch their babies gently with their trunks to comfort them or to get their attention. When elephants meet, they twist their trunks together and sniff each other.

For thousands of years, people have trained elephants to help them do work. In India and other parts of Asia, elephants are still used in the logging industry to move fallen trees. Working elephants are generally found in places where the ground is too rough for trucks and machines. In some Asian countries, elephants also take part in religious ceremonies. These elephants are colorfully painted or dressed. Then, they are led in parades.

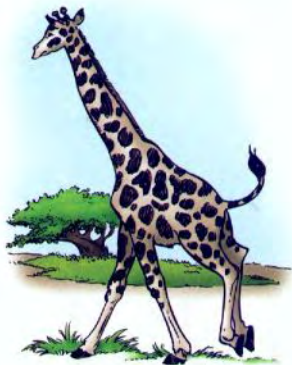






Giraffe

Giraffes are the tallest of all animals. They stand over 18 feet tall and weigh over 4,000 pounds. Even though their necks are so long, they have the same number of neck bones as other animals. Giraffes have sharp eyesight. They can see in all directions without moving their heads. Every giraffe has a different pattern of patches, just as every human has different fingerprints.



Giraffes live in herds on the dry grasslands in Africa. They mainly eat leaves from acacia (uh KAY shuh) trees, which are the most common trees in the area. Giraffes can go weeks without water. When they drink, giraffes spread apart their front legs and lower their long necks to reach the water.

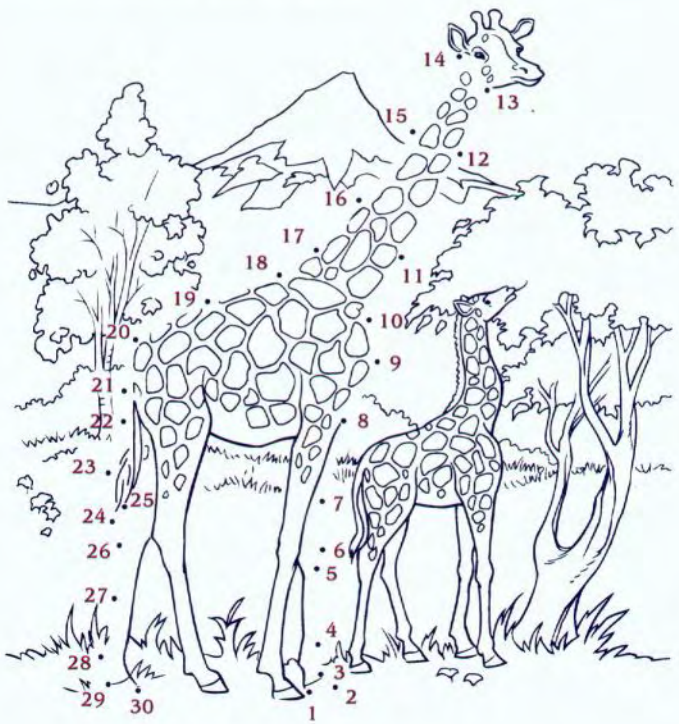
Think and Learn

1. Giraffes are the _____ of all animals.
2. Compare the number of neck bones in giraffes to other animals. _____
3. What do giraffes eat? _____
4. How do giraffes bend down to get a drink? _____



Dot-to-Dot

Connect the dots. Color the picture.



Chimpanzee

Chimpanzees (chihm pan ZEEZ) belong to the ape family. They are found in rainforests in Africa. Like apes, they can walk on two feet. However, they prefer to move about on all four legs like monkeys do. Chimpanzees have hands that look like human hands, but their thumbs are shorter. Chimpanzees eat fruit, leaves and insects.

Chimpanzees are one of the few animals that make and use tools. To get termites, chimpanzees trim sticks and put them inside termite hills. Then, they eat the termites that cling to the stick. Chimpanzees also build platforms in trees for sleeping. To communicate, or "talk," to each other, chimpanzees use different sounds.



Think and Learn

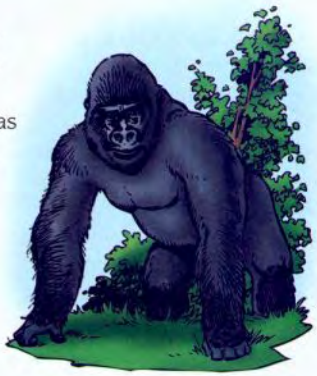
1. Is a chimpanzee a monkey or an ape? _____
2. Where are chimpanzees found? _____

3. What do chimpanzees eat? _____
4. What can chimpanzees do that most other animals cannot do? _____



Gorilla

The gorilla is the largest member of the ape family. Adult males grow to 6 feet in height and weigh 400 pounds. Females are smaller. Gorillas have broad chests, wide shoulders, long arms and short legs. Their entire body, except for the face, is covered with dark fur. Gorillas are peaceful animals that live in family groups. An adult male always leads the group. Females and their babies make up the rest of the group.



Gorillas are found in different parts of central Africa. Some live in mountain forests. Others live in forests on low ground. Gorillas spend most of the day eating leaves and fruit. At night, gorillas build sleeping platforms on the ground or in trees.

Think and Learn

1. Gorillas belong to the _____ family.
2. What makes up a gorilla family group? _____

3. Where are gorillas found? _____
4. Where do gorillas sleep? _____



Apes and Monkeys

Apes and monkeys are the animals most closely related to humans. Apes and monkeys are different. Monkeys have tails. Apes do not. Apes have larger brains than monkeys. Larger brains allow for more difficult actions.



Even though they are different, apes and monkeys are alike in some ways. Both monkeys and apes can stand up on two legs. This keeps their hands free to do some kind of task. They both have hands and feet that look like human hands. Their hands and feet have "thumbs" that move in opposite directions to their fingers. This action lets apes and monkeys use their hands and feet to pick up things and hold them.



Think and Learn

1. Label the monkey and the ape in the picture.
2. In what ways are monkeys and apes different? _____

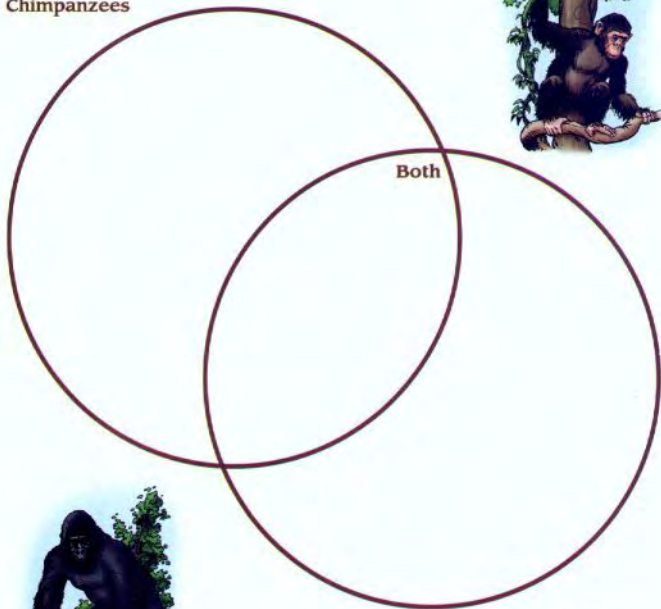
3. How are monkeys and apes similar? _____



Compare and Contrast

Read about the chimpanzee and the gorilla. Then, use the Venn diagram and the facts you have learned to compare and contrast these two animals.

Chimpanzees



Gorillas



Hippopotamus

The hippopotamus (hih uh PAHT uh muhs) is second only to elephants in size. Hippos are about 12 feet long and weigh up to 8,000 pounds. Hippos have very thick, bluish-gray skin. They have small eyes and ears on their large heads. Their enormous mouths can open 3 to 4 feet wide.



Hippos live by streams and marshes in many parts of Africa. During the day, they rest and sleep in the water. They keep their entire body under water, except for their eyes, ears and nose. Hippos are very graceful swimmers. At night, they leave the water to eat grass. They spend up to 6 hours a night eating. Hippos live in herds with 15 to 30 members.

Think and Learn

1. Hippos have very thick _____.
2. Where do hippos live? _____

3. What do hippos do during the day? _____

4. Hippos are very graceful _____.

Lion

The lion is one of the largest and fiercest members of the cat family. Lions range in size from 270 to 500 pounds. Only male lions have a mane, the thick fur around the head. The mane protects lions when they fight to defend their territory, or area in which they live.

Lions sleep during the day and hunt at night. They hunt for antelope, zebras, young elephants and other smaller animals. Lions are social animals. They live in groups called prides. A pride is usually made up of one to six males and four to twelve females with their cubs. Each pride has its own territory. The members of a pride hunt only in their territory.



Think and Learn

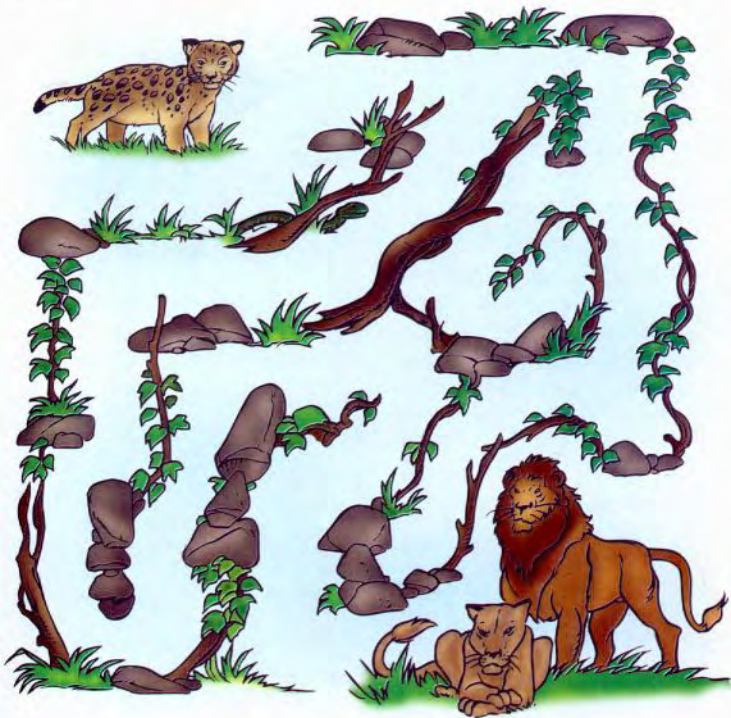
1. Why do male lions have manes? _____

2. When do lions hunt? _____
3. Lions live in groups called _____.
4. Each pride hunts in its own _____.



Lion Maze

Complete the maze to help the lion cub find its way back to its pride.



Ostrich

The ostrich (AHS trihch) is the world's largest bird. It stands 8 feet tall. Ostriches cannot fly. Their wings are too small. However, ostriches run very fast. They can run as fast as 45 miles per hour. Ostriches have very good eyesight. Their large eyes and long necks help them to see for several miles.

Ostriches live on dry, grassy plains and sandy deserts in Africa. They can go for a long time without water. Ostriches eat leaves, seeds, flowers, insects and small animals. Ostriches live and travel in flocks. A flock is usually made up of one male and several females. The male ostrich digs a hole as a nest. Each female lays as many as ten eggs in the nest.



Think and Learn

1. How tall is an adult ostrich? _____
2. How fast can an ostrich run? _____
3. Where do ostriches live? _____

4. Ostriches live and travel in _____.



Hidden Pictures

Find the ostriches hidden in the picture. Color them.



Black Rhinoceros

The black rhinoceros (right NAHS er uhs) has tough, wrinkled skin and a two-horned snout. A rhinoceros grows to 12 feet long and weighs about 2 tons. It is a relative of the horse. Surprisingly, it can run as fast as a horse for short distances. Rhinoceros horns grow from the same material as hair and claws. Rhinos use the longer front horn to dig and to defend themselves. They use the smaller back horn to dig up bushes and small trees to eat.



The black rhino stays hidden during the day. It comes out at night to search for food and water. Rhinos have very poor eyesight. They rely mostly on their sense of smell. A new odor or sound can cause a rhinoceros to charge.

Think and Learn

1. The black rhinoceros is related to the _____.
2. How does a rhinoceros use its front horn? _____

3. What do rhinoceroses eat? _____
4. What sense do rhinoceroses rely on most? _____

Vulture

Vultures (VUL cherz) are large birds of prey, or birds that eat animals. Their wingspan can reach 6 to 9 feet. Vultures have bare, wrinkled skin on their heads and necks. Their bills are slightly hooked. Vultures live in mountains, grasslands and deserts. They generally do not live in forests or in areas that receive a lot of rain.

Vultures are scavengers. Scavengers feed on the remains of dead animals. Vultures use their sharp eyesight and keen sense of smell to find dead animals. When one vulture finds food, other vultures are quick to follow. Vultures are strong fliers. They come from miles away when food is found.



Think and Learn

1. Vultures are large birds of _____.
2. Where do vultures live? _____

3. What do vultures eat? _____
4. How do vultures find food? _____

Zebra

The zebra is a striped animal related to the horse. The zebra's stripes help the animal blend in with its surroundings. A zebra standing in tall grass is very hard to see. Each zebra has its own stripe pattern, like each human has his or her own fingerprints.

Zebras are found in the deserts and grasslands of eastern and southern Africa. They mainly eat grass, and they spend most of their time eating. Zebras live in herds made up of a male, several females and their babies. Zebras protect themselves by staying together in a herd. If they are in danger, they try to run away. Zebras can run as fast as 45 miles per hour.



Think and Learn

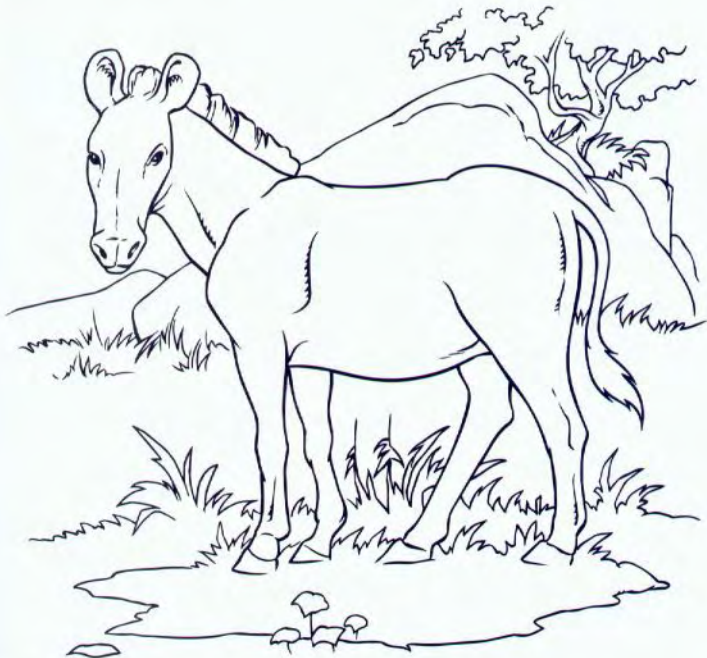
1. A zebra's _____ help it blend in with its surroundings.
2. Where are zebras found? _____

3. Zebras live in _____.
4. What do zebras do when they are in danger? _____



Zebra Stripes

Every zebra has a unique pattern of stripes. Design your own pattern on this zebra.





Word Search

Find the names of African animals hidden in the puzzle. The animal names are written **across** and **down**.

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



gorilla
vulture
giraffe
elephant

lion
ostrich
zebra

chimpanzee
rhinoceros
hippopotamus

INSECTS



Butterfly



Cricket



Fly



Grasshopper



Bee



Beetle



Mosquito



Moth



Ant



What Is an Insect?

All insects have three main body parts—head, chest and abdomen. An insect has eyes, a mouth and antennae on its head. Its legs and wings are joined to the chest. The abdomen holds all of the insect's organs, such as the heart and stomach. An insect's body does not have a skeleton, or bones, on the inside. It has a hard covering on the outside called the exoskeleton.



All adult insects have six legs. Different kinds of insects have different legs. For example, some insects have long legs for jumping. Others have legs for digging. Most adult insects have wings. Some, like flies, have one pair of wings. Others, like butterflies and bees, have two pairs.

Think and Learn

1. What are the three main body parts of insects? _____

2. Legs and wings are joined to the insect's _____.
3. What is the hard covering on the outside of an insect's body? _____
4. How many legs do insects have? _____



Ant

Ants are social insects that live and work together in large groups. Ants have two bent antennae on top of their heads. The antennae are used to taste, touch and smell. An ant is helpless if its antennae are damaged. Ants have very strong jaws that are used for digging and for getting food.



Ants are found all over the world, except for the North and South poles. Ants build different kinds of homes. Some ants live in trees. Some build nests in wood or under leaves. Others burrow under rocks. It is common for ants to dig homes in the dirt. Some dig underground tunnels and rooms in the dirt. Others build large anthills that look like tall mounds of dirt.

Think and Learn

1. Why are ants called social insects? _____

2. Ants have two bent _____ on top of their heads.
3. Ants use their jaws for _____ and for getting food.
4. Where do ants NOT live? _____



Ant Colonies

Ants live in groups called colonies. There are three different groups of ants in a colony—the queen ants, the workers and the males. Each ant in the colony has a special job. The queen ants are the largest females. Their only job is to lay eggs. The worker ants are usually females that do not lay eggs. The workers have many jobs. Some workers are nursery ants who care for the eggs. Other worker ants find food and bring it back to the colony. The largest workers are soldier ants who guard the nest. Male ants live in the nest only at certain times. Their job is to mate with the queen ants. After mating, the male ants soon die.



1. Label the ant in the colony that is a nursery ant. Label the soldier ant.
2. What are the three different groups of ants living in an ant colony? _____

Bee

Bees are the only insects that make a food that people eat. Bees have a special stomach, called a honey stomach, where they store nectar, the sugar from flowers. Their long, hollow tongues work like straws to suck up nectar. Female bees have a stinger that they use for defense.



Bees live all over the world, except for the North and South poles. Bees build their homes in hollow trees or in beehives. Some bees live in social groups like ants. The queen bee lays eggs. The worker bees build the hive, care for the eggs, find nectar and pollen and defend the hive. The drones are male bees that mate with the queen.

Think and Learn

1. What is a honey stomach? _____

2. Female bees have a _____ they use for defense.
3. Where do bees build their homes? _____

4. What are drones? _____

Honeybees

Some farmers build wooden hives for honeybees. Then, the bees move in and make honeycombs. Honeycombs look like a wall with many six-sided rooms. Worker bees build the honeycomb out of beeswax, which they make in their stomach. The rooms in the honeycomb are used for storing eggs, young bees and honey.



Worker bees make honey from the nectar they collect from flowers. As bees collect nectar from flowers, they spread pollen from one flower to another. Pollen grains are the male sex cells of a flowering plant. A flower needs pollen to form fruit and seeds. Farmers often keep bees to help spread the pollen on their fruit trees. Then, the fruit trees will have a lot of fruit. Farmers also collect the honey.

Think and Learn

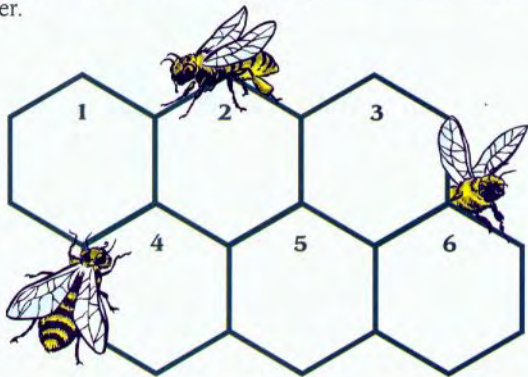
1. What are honeycombs made of? _____

2. Why do farmers keep bees? _____



BZZZ, BZZZ, BZZZ

Complete the sentences below by filling in the missing words. Then, write each word in a cell of the honeycomb with the matching number.



1. Bees collect nectar to make _____.
2. The bees that take care of the hive and make honey are called _____.
3. The bee that lays all the eggs is called the _____.
4. Male bees are called _____.
5. A honeycomb cell has _____ sides.
6. Honeycombs are made out of _____.



Beetle

Beetles are the largest group of insects and come in every color of the rainbow. All beetles have two pairs of wings. The outer wings are hard. They protect the inner, or flight, wings. The flight wings are thin and clear. They stay folded under the outer wings until needed for flight. Beetles have very strong jaws to grab and chew food.

Beetles are found all over the world. Beetles make their homes in many different places, from in water to under the ground. Beetles can be harmful or helpful to people, depending on what they eat. Some beetles damage the plants in gardens and farmers' fields. Other beetles eat harmful insects.



Think and Learn

1. Beetles are the _____ group of insects.
2. Which wings do beetles use for flight? _____

3. Beetles have strong _____ to grab and chew food.
4. How are beetles helpful to people? _____



Butterfly

Butterflies are beautiful insects. The body of a butterfly is long and slender. They have knobs at the ends of their antennae, which are used for smelling. Their wings are covered with tiny scales that give the wings their color. All butterflies hatch as caterpillars, which look like worms. The caterpillars change to adult butterflies in a cocoon, or paperlike case.



Butterflies are found everywhere. They live on mountains and in deserts. As caterpillars, they eat leaves and fruit, often damaging crops. As butterflies, they cannot bite or chew. For food, they drink nectar, the sugary liquid, from flowers. Butterflies fly only during the day. When resting, they fold their wings straight up.

Think and Learn

1. What do butterflies use their antennae for? _____
2. Tiny _____ give butterfly wings their color.
3. What do caterpillars eat? _____
4. When do butterflies fly? _____



Cricket

Crickets are jumping insects. Most crickets are either black or brown in color and are about 1 inch long. Crickets have two pairs of wings. Both pairs of wings lie flat over the cricket's back. Only male crickets make the chirping sound that crickets are known for. They make the sound by rubbing their wings together. They make this sound to attract female crickets. Crickets hear sounds with a special body part on their front legs.



Crickets are found in many parts of the world. They hide during the day and are active at night. This is when they chirp and search for food. Crickets eat grain and the remains of other insects.

Think and Learn

1. Crickets are _____ insects.
2. How do male crickets chirp? _____

3. How do crickets hear? _____

4. When do crickets search for food? _____



Fly

Flies are very common insects. People see and hear them everywhere. There are many different kinds of flies, such as house flies, fruit flies, gnats and deer flies. Flies have only one pair of wings. The buzzing sound you hear when a fly flies by is the sound of its wings beating together. Flies use their antennae to touch and smell things. Flies have tiny, hairy pads on the bottoms of their feet. These help flies cling to walls and walk upside down on ceilings.



Although flies look harmless, they can carry and spread germs. Some flies, however, are helpful. They spread pollen from flower to flower like bees do.

Think and Learn

1. What are some kinds of flies? _____

2. Flies have _____ pair of wings.
3. Flies use their _____ to touch and smell things.
4. Flies can carry and spread _____.



Grasshopper

Grasshoppers are built for jumping. Grasshoppers have long thin legs with powerful muscles. Most grasshoppers have large fragile wings that are protected by a second pair of wings. Like crickets, male grasshoppers make sounds by rubbing their wings together. Although grasshoppers can fly, they fly for only short distances. They move mainly by leaping and jumping.



There are two kinds of grasshoppers—long-horned grasshoppers and short-horned grasshoppers. Long-horned grasshoppers have long antennae. They eat plants and, sometimes, the remains of animals. Short-horned grasshoppers are locusts. They have short antennae and eat only plants. Some locusts damage crops.

Think and Learn

1. Grasshoppers are built for _____.
2. How far do grasshoppers fly? _____

3. Long-horned grasshoppers have _____ antennae.
4. Locusts are _____-horned grasshoppers.



Mosquito

The mosquito is a kind of fly. Like all flies, mosquitoes have only one pair of wings. Mosquito wings can beat 1,000 times each second. The mosquito's head is almost entirely covered by its two large eyes. The antennae, used for hearing and smelling, are located between the eyes. Female mosquitoes have thin antennae. Male mosquitoes have feathery antennae.



Mosquitoes are found in all parts of the world. Some mosquitoes in tropical parts of the world spread diseases. Mosquitoes are most annoying because their bites hurt and itch. Only female mosquitoes bite. They bite to get the blood they need for their eggs to grow.

Think and Learn

1. The mosquito is a kind of _____.
2. Mosquito wings can beat _____ times each second.
3. What do mosquitoes use their antennae for? _____

4. Why do female mosquitoes bite? _____

Moth

Moths are closely related to butterflies. Butterflies and moths are so much alike that it is sometimes hard to tell them apart. Unlike butterflies, moths have chubby bodies and usually fly only at night. Moth antennae look feathery. The antennae give moths their senses of touch and smell. Moths cannot bite or chew. They have a mouth that looks and works like a drinking straw. Moths eat sap and nectar.



Moths are found everywhere. They have many enemies, such as frogs, birds, snakes and spiders. Some moths protect themselves by flying away. Others blend into their surroundings. Some moths taste so awful that other animals leave them alone.

Think and Learn

1. Moths are closely related to _____.
2. When do moths fly? _____
3. Moth antennae look _____.
4. What are some enemies of moths? _____

INSECTS

Pull-Out Storybook





The Goliath beetle is the heaviest insect. It is 4 inches long and weighs as much as four mice.

Insects make up the largest animal group in the world. How do you know that you are not an insect? The easiest way to tell is to count your legs. An insect has six legs. It also has three main body parts—head, chest and abdomen. Insects usually have two antennae on their head. Most insects have wings, but some do not. The wings and the legs are attached to the chest.



There are about 20,000 different kinds of butterflies.



The silverfish is an insect that does not have wings.



The longest insect is a type of walking stick that lives in Indonesia. It can grow to more than 12 inches long.



The wings of moths and butterflies are made up of tiny overlapping scales.

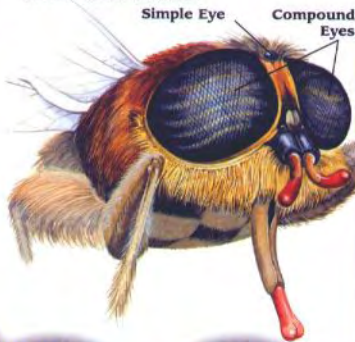


Most insects have two pairs of wings for flying. Insects fly for many reasons—to find food, to look for a place to live, to escape from danger and to find mates. Insects need to warm up their flight muscles before they can fly on cold days. Some insects open their wings to let the sun heat them. Others move their muscles very fast to get them going.

Dragonflies are the fastest insects. They can fly at speeds of up to 60 miles per hour.



Most insects have both simple eyes and compound eyes. Simple eyes see only light and dark. Compound eyes are made up of many little eyes. Each little eye sees something different. Together, the insect sees the whole picture. Insects have tiny hairs on their bodies that sense sound and air movement. Insect antennae also have hairs. Insect antennae can sense touch, smell and sound.



When ants meet, they touch each other's antennae. In this way, they can sense whether they are from the same nest.



The tiny hairs covering a bee's body help it judge air currents when it is flying.



A cricket has its ears on its front legs. They vibrate when sound waves hit them.



Using its antennae, a male moth can smell a female moth that is a mile away.

Some termites feed on wood and can damage buildings.


An adult mayfly lives for only a few hours or days.



Insects have different types of mouths, depending on the food they eat. Some insects chew plant or animal food. These insects have strong jaws for cutting and grinding. A praying mantis, for example, has chewing mouthparts. It also uses its front legs to hold its food. Other insects, such as butterflies, drink their food. They have special mouthparts for sipping. Still others, such as mosquitoes, have piercing mouthparts that let them suck fluids from their prey. Mayflies are insects that do not have mouthparts. They live only long enough to mate and lay eggs.

A praying mantis uses its front legs to grasp its prey.





Insects have tricks to help them hide or scare away enemies. Some insects blend in with their surroundings. They look like leaves, flowers, twigs or bark. Other insects, such as butterflies, have spots on their wings that look like eyes. Enemies stay away from them because they look like larger animals. Insects also have tricks for finding mates. Some give off a special odor. Others, such as crickets, make sounds. Fireflies flash signals to each other.



Most insects lay eggs. For many, the young that hatch from the eggs look like wingless adults. These young are called nymphs. A nymph eats, grows and molts, or sheds its outer layer, until it is an adult. Other insects, such as butterflies, go through a metamorphosis (meht uh MOR fuh sihs), or complete change. A caterpillar hatches from the egg. It eats and grows and eats and grows. Then, it makes a hard case, or cocoon, around itself. While inside the cocoon, the insect is called a pupa (PYOO puh). After great changes, the pupa becomes an adult. Finally, the adult crawls out of the case.



Insects are divided into many different groups. Beetles are the largest group of insects. There are about a half million different kinds of beetles. Insects have been around for a very long time. They first appeared on Earth over 100 million years before dinosaurs. Today, insects live all over Earth—from the poles to swamps to forests to deserts.

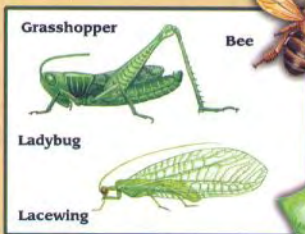


Butterfly



Earwig

Although most insects are helpful, some can be harmful. Some spread disease, and others destroy crops or buildings. Helpful insects eat harmful insects, provide food for other animals and pollinate, or fertilize, flowers.



Grasshopper

Ladybug

Lacewing

Bee



Treehopper

Fly







REPTILES



Chameleon



Tuatara



Alligator



Garter Snake



Turtle



Rattlesnake



Sea Turtle



Lizard



Crocodile



What Is a Reptile?

Reptiles are cold-blooded animals with scaly skin. Cold-blooded animals cannot control their body temperature. Their body temperature is the same as the temperature of their surroundings. However, many reptiles keep their body temperature even by moving to sunny or shady spots during the day.



The scales on the reptile's skin keep the skin from drying out. As reptiles grow, they shed their skin. Snakes shed their entire skin, while other reptiles have skin that flakes off. Most reptiles lay hard-shelled eggs. However, some reptiles give birth to live young. Scientists divide reptiles into four groups—tuataras, crocodiles, snakes and lizards, and turtles.

Think and Learn

1. _____ are cold-blooded animals with scaly skin.
2. How do some reptiles keep their body temperature even?

3. What keeps a reptile's skin from drying out? _____
4. Most reptiles lay hard-shelled _____.



Tuatara

The tuatara (too uh TAW ruh) looks like a lizard but is actually the last remaining animal in its group. Tuataras lived during the time of the first dinosaurs, about 220 million years ago. They have not changed since that time. Tuataras have a third eye on top of their head. They also have two rows of upper teeth. A row of horny plates runs along their back. These plates rise straight up when tuataras are frightened.



Tuataras are found only on some islands near New Zealand. They live in burrows made by seabirds. They can dig their own burrows but seem to prefer ones already made. Tuataras lay hard-shelled eggs that take 15 months to hatch.

Think and Learn

1. Tuataras lived during the time of the first _____.
2. How many eyes do tuataras have? _____
3. Where are tuataras found? _____

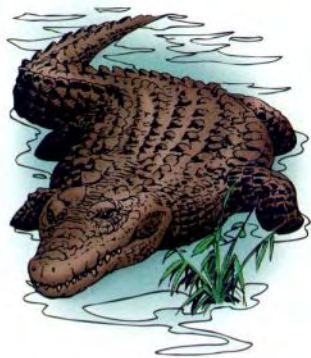
4. How long do tuatara eggs take to hatch? _____



Crocodile

Crocodiles (KRAHK uh dighlz) are the largest reptiles. They can reach 25 feet in length. Of all the animals belonging to the crocodile group, crocodiles are the most dangerous. Crocodiles have long narrow snouts. When their mouths are closed, their lower teeth show.

Crocodiles are found in the tropical parts of the world. They catch fish and small land animals for food. Like alligators, crocodiles are most active at night. During the day, they rest in the sun. Often a crocodile lies with its mouth open to help cool its body. When its mouth is open, the crocodile lets birds go in it and peck out leftover pieces of food.



Think and Learn

1. Crocodiles are the _____ reptiles.
2. Describe the shape of a crocodile's snout. _____

3. What do crocodiles eat? _____
4. How does a crocodile cool its body? _____



Alligator

Alligators (AL ih gay terz) belong to the crocodile group of reptiles. Although they are members of this group, alligators and crocodiles are two different animals. Alligators have wide rounded snouts. When their mouths are closed, their lower teeth are inside. Alligators are smaller than crocodiles. They grow up to 12 feet long.



Alligators are found in southeastern United States and in parts of China. They eat frogs, fish, snakes, turtles and small mammals. Like crocodiles, alligators are good swimmers. Alligators move through the water by moving their tails from side to side. Female alligators lay as many as 50 eggs and guard the eggs until they hatch. Mother alligators care for their young for up to a year.

Think and Learn

1. Alligators belong to the _____ group of reptiles.
2. Describe the shape of an alligator's snout. _____

3. How do alligators move through water? _____

4. Mother alligators care for their young for up to a _____.



Compare and Contrast

Read about crocodiles and alligators. Then, use the Venn diagram and the facts you have learned to compare and contrast these two animals.

Crocodile



Both

Alligator





Lizard

Lizards and snakes make up the largest group of reptiles. Most lizards have four legs with five clawed toes on each leg. Some lizards do not have legs. Lizards have movable eyelids and good eyesight. They do not have ears, but they have ear openings on the sides of their head. Lizards use their tongue for smelling.



Lizards are found in all parts of the world, except the North and South poles. Most lizards eat insects and small mammals. Some lizards eat plants. Lizards protect themselves by blending in with their surroundings, making their bodies look bigger, or making hissing sounds. Some lizards have tails that break off and keep wiggling, while the lizard escapes. Later, it grows a new tail.

Think and Learn

1. Lizards have _____ eyelids.
2. What do lizards use their tongues for? _____
3. What do most lizards eat? _____

4. Some lizards protect themselves by losing their _____.



Chameleon

Chameleons (kuh MEEL yuhnz) are lizards that can change their body color to match their surroundings. They can blend in so well that they actually look invisible! Chameleon bodies are flat on the sides. Their eyes are large and bulging. Each eye works separately from the other. They can look in different directions at the same time.



Chameleons are slow-moving lizards. They do not chase down their food. Instead, a chameleon sits quietly and waits for food to come to it. When a chameleon sees an insect, it shoots out its sticky tongue and catches the insect. Chameleons are found only in Africa and Madagascar.

Think and Learn

1. What changes on chameleons? _____
2. How can chameleons look in different directions at the same time? _____
3. Chameleons catch insects with their sticky _____.
4. Where are chameleons found? _____

Snake

Snakes are reptiles that have long bodies and no legs. Snakes move by sliding on their belly. Snakes cannot shut their eyes, because they do not have eyelids. Their eyes are covered with clear scales. Snakes do not have ear slits. Instead, they "hear" sounds by feeling the movement of air around them. Snakes have a long forked tongue that helps them smell.



Snakes eat other animals. The size of animal they can eat depends on the size of their mouth. A snake swallows its food whole. Snakes do not eat often. Most snakes eat only a few times a year. Snakes, like all other reptiles, lay eggs or give birth to live young. They do not take care of their young.

Think and Learn

1. How do snakes move? _____
2. What covers a snake's eyes? _____
3. Snakes use their long, forked _____ to help them smell.
4. How often do most snakes eat? _____



Garter Snake

Garter snakes are harmless snakes found in Central and North America. Female garter snakes grow 20 to 30 inches long. Males are slightly smaller. Garter snakes living in different areas look different from each other. They come in many different colors. However, most garter snakes have three stripes running along their body.



Garter snakes are most active in the spring and autumn. That is when most people see them in their yards or in parks. Garter snakes catch and eat small animals, such as frogs, salamanders and fish. Garter snakes do not lay eggs. Instead, they give birth to live young.

Think and Learn

1. Garter snakes are _____ snakes.
2. What feature do most garter snakes have? _____

3. When are garter snakes most active? _____
4. Garter snakes do not lay _____.



Rattlesnake

Rattlesnakes are poisonous snakes with “rattles” on their tails. The rattles are pieces of bone that are loosely connected. Each time a rattlesnake grows enough to shed its skin, a new section of the rattle forms. Many people believe that a rattlesnake will shake its rattle before striking. That is not always true.

Rattlesnakes are most commonly found in the desert areas of the United States and in the mountains of Mexico. Rattlesnakes eat small animals. They catch animals by pouncing on them and biting them. The poison in their fangs, or long front teeth, kills the animal. All rattlesnakes give birth to live babies. Young rattlesnakes can take care of themselves right away.



Think and Learn

1. Where are rattlesnakes found? _____
2. Their rattles are pieces of loosely connected _____.
3. What do rattlesnakes eat? _____
4. Rattlesnakes have _____ in their fangs.



Turtle

Turtles are reptiles with shells. Turtle shells are made of either horny plates or tough leathery skin. The shell protects the turtle's body. Many turtles can pull their legs and head inside their shell. Turtles do not have teeth. They cut their food with their hard sharp beak. They also breathe air with lungs. All turtles lay eggs and bury them in soil. The warmth from the sun helps the eggs hatch.



Turtles are found all over the world. Some turtles spend most of their time in water. Other turtles spend some time both in the water and on land. There are also turtles that live only on land. Turtles eat both plants and animals.

Think and Learn

1. Turtles are reptiles with _____.
2. How do turtles cut their food? _____

3. All turtles lay _____.
4. What do turtles eat? _____



Sea Turtle

Sea turtles are turtles that live in the ocean. Sea turtles are very large. They range in size from 2 to 8 feet and weigh from 100 to 1,800 pounds. Instead of claws, sea turtles have flippers to help them swim easily through water. Sea turtles have flat shells instead of rounded shells like land turtles. Flat shells also help them move more easily through water.



Sea turtles are found in warm oceans throughout the world. They eat fish, shrimp, crabs, jellyfish and plants. Sea turtles dig holes and lay their eggs on sandy beaches. The eggs lay buried in the sand for a couple of months before they hatch. When the eggs hatch, the babies dig out of the sand and head for the ocean.

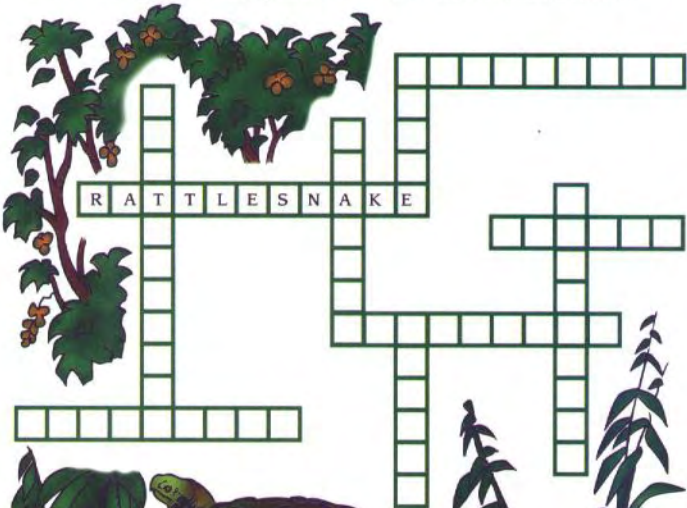
Think and Learn

1. Flippers and _____ shells help sea turtles move in the water.
2. Where are sea turtles found? _____
3. Sea turtles eat fish, shrimp, crabs, jellyfish and _____.
4. Sea turtles lay their eggs on sandy _____.



Reptile Puzzle

Fill in the spaces of the puzzle with the correct animal name.



snake
turtle
lizard

tuatara
alligator
crocodile

chameleon
sea turtle
garter snake

ANIMALS THAT LIVE IN THE WATER



Dolphin

Starfish



Sea Horse

Lobster



Jellyfish



Octopus

Shark



Crab



Salmon



Whale



Crab

A crab is a sea animal covered by a hard shell. Crabs have five pairs of jointed legs. The first pair of legs has large claws. Crabs use their claws to attract mates, defend themselves and get food. On crabs that swim, the last pair of legs is shaped like flippers. On land, crabs often walk sideways on their last four pairs of legs. Crabs come in all sizes, from less than 1 inch long to 12 feet long.



Crabs are found in oceans all over the world. Some crabs live on land but must lay their eggs in the sea. Their young grow in the sea until they are adults. Then, they move to the land. Crabs eat both plants and animals.

Think and Learn

1. Crabs have _____ pairs of jointed legs.
2. How do crabs use their claws? _____

3. Crabs walk _____ on their last four pairs of legs.
4. What do crabs eat? _____



Dolphin

Dolphins (DAHL fihnz) are small toothed whales that live in the ocean. They are mammals, not fish. A mammal is an animal whose young feed on its mother's milk. Dolphins also breathe with lungs, not gills like fish. They must come to the surface of the water to breathe. Dolphins have bodies well suited for living in water. They have long narrow bodies, flippers and fins on their backs.



Dolphins are social animals. They live together in groups. They also "talk" to each other using many different sounds. Dolphins are very smart animals. Many have been trained by humans to do different jobs and to entertain people. Dolphins mainly eat fish and squid.

Think and Learn

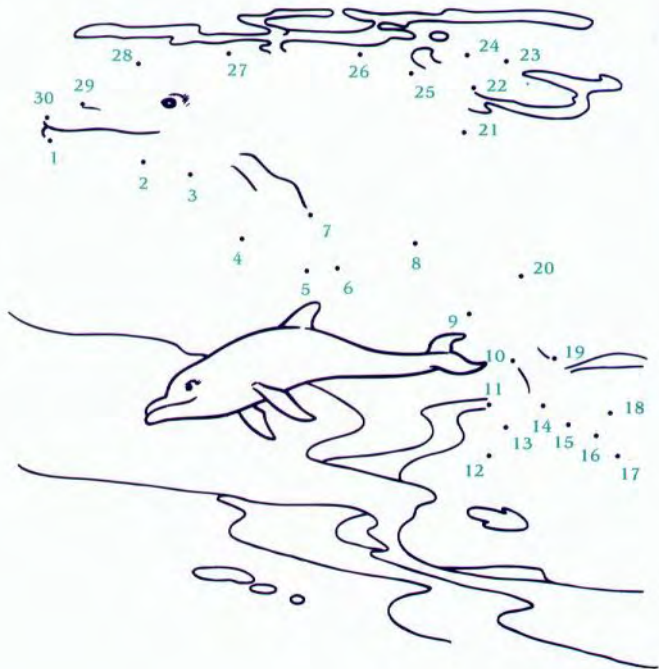
1. Dolphins are _____, not fish.
2. Dolphins breathe with _____.
3. How are dolphin bodies suited for living in water?

4. What do dolphins eat? _____



Dot-to-Dot

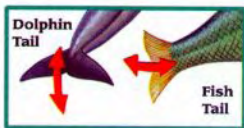
Connect the dots. Color the picture.



DOLPHINS

Pull-Out Storybook





A dolphin is a type of toothed whale. There are more than 30 different kinds of dolphins. Most kinds live in the ocean, but some live in freshwater rivers and lakes in South America and Asia. Although dolphins live in water, they are mammals, not fish. Dolphins flap their tails up and down when they swim. Most fish move their tails from side to side. Dolphins also must come to the surface of the water to breathe air.



**Bottlenose
Dolphins**



A dolphin uses its two flippers to steer and the dorsal fin on its back for balance. Instead of having a fur coat to keep it warm, a dolphin has a layer of fat called blubber under its skin. The blubber allows the dolphin to live in cold ocean water.

Like its whale cousins, a dolphin breathes through a blowhole at the top of its head. A dolphin usually comes to the surface two to three times a minute to breathe. It closes its blowhole underwater, just as you might plug your nose.

If dolphins could talk, their most common words might be "Let's play!" They race, leap, surf, spin, flop, splash, somersault and even do back flips in the air. They play tag, catch and tug-of-war. Play is a sign of intelligence. Dolphins enjoy playing games, learning new ones from each other and even teaching humans how to play.

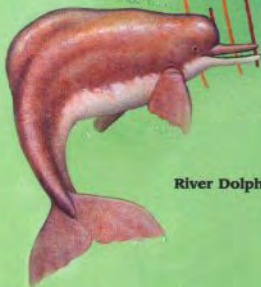
These spinner dolphins are amazing acrobats. They get their name from the spins they do in the air.







Dolphins are social animals that live in groups called pods or schools. Living in groups helps dolphins hunt for food and protect themselves from enemies, like sharks. And of course, it's more fun to play with a buddy. Dolphins "talk" to each other by making many different sounds. They also slap their tails on the water.

Dolphins will help another dolphin that is sick or hurt. They sometimes lift the dolphin in need to the surface so it can breathe.



River Dolphin

Dolphins probably have the best hearing of all animals. They use their sense of hearing to find their way, hunt for food and be aware of danger. Dolphins send out a series of clicking sounds. The sounds travel fast through the water. When the sounds strike an object, such as a fish or a rock, they bounce back as an echo. Dolphins can tell from the echoes the size, shape, speed and location of the object.



Mother dolphins are very good parents. A baby dolphin grows inside its mother for about 1 year. The mother dolphin, often with the help of another female dolphin, guides her newborn calf up to the surface for air. A baby dolphin can swim quite well within 30 minutes of birth.

A mother dolphin is very protective of her baby. When the calf is about 6 months old, it begins to eat fish scraps left by adults. Later, its mother teaches it to hunt. Dolphin calves stay with their mothers for up to 3 years.



Dolphins face many dangers throughout the world. Some are accidentally caught in nets set by fishermen searching for tuna and other fish. Other dolphins are hunted as food. In the past 30 years, efforts have increased to protect dolphins and their habitats.

**Spotted
Dolphins**



**Orca
(Killer Whale)**



**Chinese River
Dolphin**



**Harbor
Porpoise**



**Risso's
Dolphin**



**Spinner
Dolphin**





Jellyfish

Jellyfish are soft-bodied animals that live in oceans. Jellyfish get their name from the stiff, jellylike material that makes up their body. Jellyfish have no bones. Their body is shaped like an open umbrella. Their mouth hangs down from the center of their body. Long tentacles hang down around the outside of their body. These tentacles are poisonous.

Jellyfish swim by opening and closing their body. This action pushes the jellyfish through the water. To get food, jellyfish first swim upward. Then, as they float down to the bottom, they catch fish and other small animals by stinging them with their poisonous tentacles.



Think and Learn

1. What are jellyfish named for? _____

2. What are jellyfish shaped like? _____
3. Jellyfish have _____ tentacles.
4. How do jellyfish swim? _____

Lobster

Lobsters (LAHB sterz) are sea animals that are related to crabs. Like crabs, lobsters have hard shells and five pairs of jointed legs. The first pair of legs has claws. Lobsters use their claws to grab food and tear it apart. Lobsters have long bodies divided into three parts—the head, the thorax or middle, and the abdomen or tail.



Lobsters live on the ocean floor near the shore. They usually hide in holes or under rocks and wave their antennae outside. Lobsters have eyes on the ends of the stalks near their antennae. When a lobster senses that an animal is passing by, it pounces on the animal and grabs it with its claws. Besides small animals, lobsters also eat plants.

Think and Learn

1. Lobsters are related to _____.
2. How do lobsters use their claws? _____

3. Lobster bodies are divided into _____ parts.
4. Where do lobsters live? _____

Octopus

An octopus (AHK tuh puh) is a sea animal with a soft body and eight arms. These arms are called tentacles. The bottom sides of the tentacles are lined with suckers. Suckers are round and help octopuses stick to rocks. An octopus uses its arms and suckers to catch food and to move along the ocean floor.

Octopuses are found in oceans all over the world. They eat crabs, lobsters, clams and snails. Many other sea animals eat octopuses. An octopus defends itself by squirting a dark cloud to hide itself. It can also change colors to either scare an enemy or help the octopus blend in with its surroundings. An octopus can shoot out a jet of water from its body and move quickly away.



Think and Learn

1. An octopus has _____ tentacles.
2. How does an octopus use its tentacles? _____

3. What do octopuses eat? _____

4. Octopuses can change _____ to scare away enemies.

Salmon

Salmon are large fish that are born in freshwater streams. After birth, the young fish swim to the saltwater ocean. Some kinds of salmon go to the ocean right away. Other kinds stay in the streams for several years. Salmon live most of their lives in the ocean. When salmon are ready to lay eggs, they swim back to the freshwater stream where they were born. The return trip is not easy. Salmon must swim against strong river currents and jump up waterfalls.



Salmon are found in the Pacific and Atlantic oceans. They eat shrimp, squid and small fish. When they return to freshwater rivers and streams to lay eggs, they do not eat. They live off the fat that is stored in their bodies.

Think and Learn

1. Where are salmon born? _____
2. Where do salmon live most of their lives? _____
3. Why is the return trip to lay eggs not easy? _____

4. What do salmon living in the ocean eat? _____

Sea Horse

A sea horse is a small fish with a head that looks like a horse's head. Its body is only about 5 inches long. Sea horses have long tails. They use their tails to hold onto plants. Their spiny coat protects them like armor. Sea horses are not strong swimmers. They swim in an upright, or "standing up," position. They move through the water by moving their dorsal, or back, fin back and forth.



Sea horses are found in shallow ocean water in warm climates. They feed by sucking in small animals through their long snout. Female sea horses lay eggs in a pouch on the male sea horse's body. The male sea horse carries the eggs until they hatch.

Think and Learn

1. A sea horse is a small _____.
2. How do sea horses use their tails? _____
3. Sea horses swim in an _____ position.
4. Where do female sea horses lay eggs? _____

Shark

Sharks are fish that feed on other animals. Unlike most fish, sharks do not have bones. Instead, their bodies are supported with cartilage (KART I ij). Cartilage is a tough, bendable material. You have cartilage at the tip of your nose. Most sharks have mouths on the bottom side of their head. Some kinds of sharks have grinding teeth. Others have tearing teeth.



Sharks come in all sizes. Some are as small as 6 inches long. Others can grow to 40 feet long. Sharks are found in all parts of oceans. They are very good swimmers. Their long narrow bodies help them move easily through water. Their curved tails help them swim fast.

Think and Learn

1. Sharks are _____ that feed on other animals.
2. Sharks have _____ instead of bones.
3. Where are sharks found? _____
4. How do curved tails help sharks? _____



Starfish

Starfish are sea animals with spines on their skin. Starfish are sometimes called sea stars because they are shaped like stars. Many starfish have five "arms" pointing out from their body. However, some starfish have as many as 40 arms. Starfish have rows of tiny tube-shaped feet along their arms. These tube feet help starfish move and get food.



Starfish are found in oceans all over the world. They eat animals with shells, such as clams and oysters. A starfish opens up a shell by attaching its tube feet to both halves of the shell. Then, it pulls apart the shell and pushes its stomach through the opening in the shell.

Think and Learn

1. Starfish have _____ on their skin.
2. Starfish have a body shaped liked a _____.
3. How do starfish use their tube feet? _____

4. What do starfish eat? _____

Whale

Whales are large mammals that live in the ocean. Mammals are animals whose young feed on their mother's milk. Although whales look like fish, they are very different. Whales have lungs and must come to the water's surface to breathe. Whales also have tails that move up and down, not back and forth.

Some whales have teeth. These whales usually eat fish and other animals. Other whales do not have teeth. These whales feed on tiny plants and animals that float in the water. Whales are social animals that live in groups. Whales "talk" to each other by making many different sounds. Whales have a keen sense of hearing and can hear sounds from far away.



Think and Learn

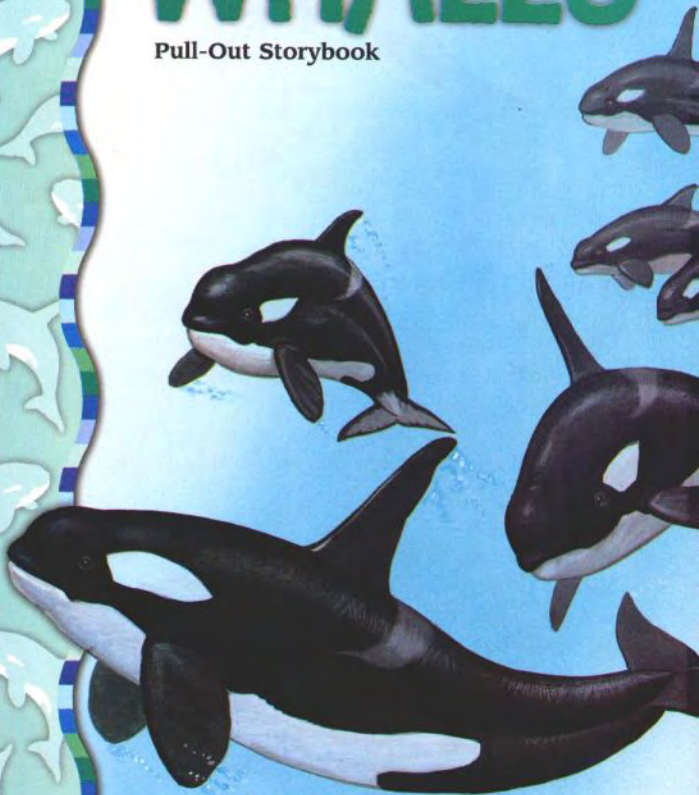
1. Whales are _____ that live in the ocean.
2. How are whales different from fish? _____

3. What do whales without teeth eat? _____

4. Whales have a keen sense of _____.

WHALES

Pull-Out Storybook





Humpback Whale



Beluga (White Whale)



Blue Whale

Whales are mammals that spend their entire lives in the sea. Like all mammals, whales are warm-blooded. This means that their body temperature stays about the same, even when the temperature around them changes. Whales give birth to live young and feed their babies milk.

Whales have been called “the giants of the deep.” The blue whale is the largest animal in the world. It can grow to a length of 100 feet. Not all whales are so large, however. The beluga whale is only about 16 feet long.

At first glance, whales look a lot like fish. Both have tails and fins. But there are some differences between the two. Whales have smooth firm skin. Fish have scales. Whales have tails, called flukes, that they move up and down when they swim. Fish have tails that they swing from side to side. Whales breathe with lungs and must hold their breath underwater. They come to the water's surface to breathe in fresh air. Fish, on the other hand, breathe underwater by using gills.

Pigmy Sperm Whale



Bluefin Tuna



Whales are divided into two groups—
toothed whales and baleen whales. Toothed
whales have teeth. These whales feed on
fish. Baleen (buh LEEN) whales do not have
teeth. Instead, they have long fringed plates,
called baleen, that hang down from the roof
of their mouth. The baleen traps tiny plants
and animals, called plankton.



*The killer whale,
or orca, is a
toothed whale.*



*The finback whale
is a baleen whale.*



Gray Whales

Most whales have one baby, or calf, at a time. One or more female whales may help the mother while she is giving birth. As soon as the baby is born, the mother pushes the calf toward the surface to take its first breath.

A baby whale stays with its mother for at least 1 year. During that time, the mother protects the calf from enemies. She also teaches the baby to dive and to find food on its own.



Many whales live in groups called pods. The members of a pod feed together, travel together and help look after each other's young. If a whale gets sick, the other whales in the pod help it.

Whales "talk" to one another by making sounds. Whales make sounds for different reasons, such as warning others of danger, calling for help or attracting a mate. Different kinds of whales make different sounds. For example, sperm whales make clicking noises, while blue whales make loud, moaning sounds.



A pod may have as many as 40 or more members.



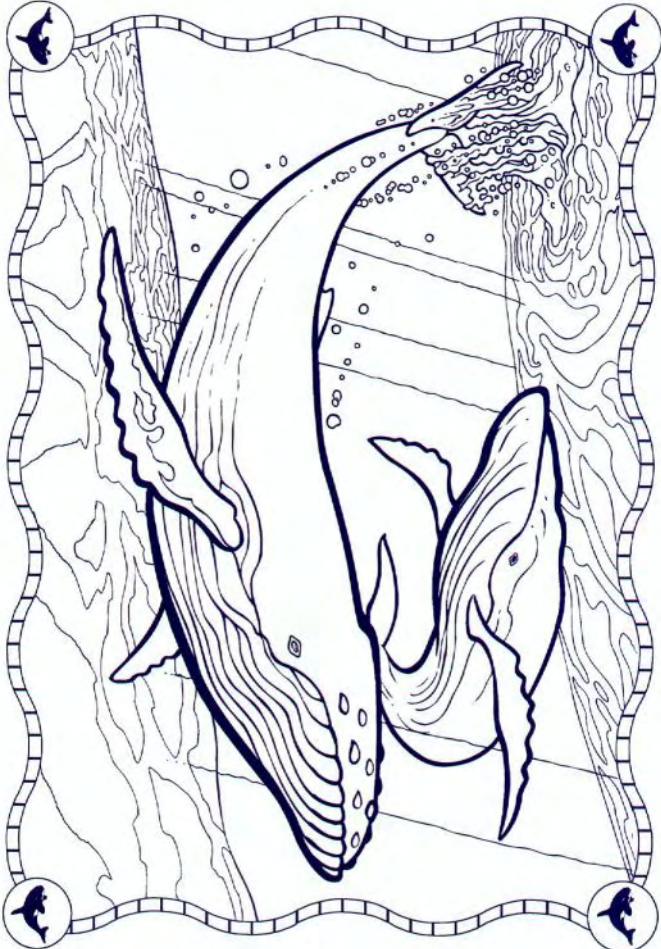
Whales sometimes leap out of the water and come down with a huge splash. This is called breaching. No one knows for sure why whales breach, but scientists think it is a way whales communicate. Whales usually breach when they are with other whales. Some people think that whales enjoy breaching and do it for fun.

When breaching, the whale first lifts itself out of the water. Once completely out of the water, the whale falls straight back or twists around in midair. The whale then crashes back into the water with a tremendous splash!



Whales are found in every ocean, but there are fewer whales now because of whaling. Not long ago, so many whales were killed each year that some kinds of whales almost died out. Today, laws protect whales. Most countries have banned whaling. The whale population is growing, but these animals still need people's help to fully recover from years of being overhunted.









Word Search

Let's go on a whale watch! Maybe you will see the largest animal on Earth, the blue whale. Find the whales and whale words in the puzzle. They are written **across** and **down**.



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

blue
killer
minke
fin

baleen
blubber
beluga
pod

bowhead
sperm
narwhal

humpback
blowhole
orca



Hidden Pictures

Find the ocean animals hidden in the picture. Color the picture.



FARM

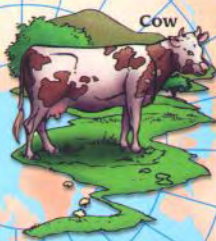
ANIMALS



Chicken



Duck



Cow



Horse



Pig



Sheep



Goat

Duck

Ducks are birds that spend part of the time in water. Their webbed feet act as paddles to move them easily through the water. Most ducks get their food from water or from the areas around water. Some ducks eat fish. Others eat water plants and small water animals. Ducks keep dry by oiling their top feathers with oil from a special gland near their tail. They have a layer of soft fluffy feathers, called down, under the top feathers. Down keeps the duck warm.



Farmers raise ducks for their feathers, eggs and meat. Duck feathers are used to stuff pillows and make winter coats. Ducks raised on farms do not get their food from water. The farmer feeds them a kind of food made just for ducks.

Think and Learn

1. What helps ducks move through water? _____
2. Most ducks get their food from _____.
3. What is down? _____

4. Farmers raise ducks for feathers, eggs and _____.

Pig

Pigs are farm animals with short legs and a long round body. Their body is covered with short bristles. Pigs cannot sweat to cool their body in hot weather. Instead, they lie in the mud during hot weather to cool off. Pigs have a sharp sense of smell but poor eyesight. The end of their flat snout is very sensitive to touch. Pigs use their snout for finding and digging up food.



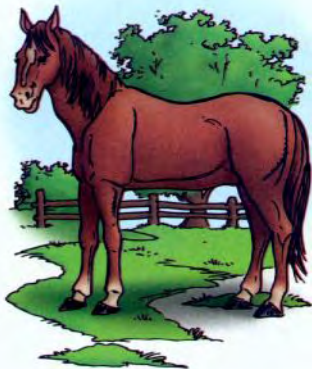
Farmers all over the world raise pigs. Pigs are raised for their meat, which is called pork. Many other products, such as leather, glue, soap, fertilizer and medicines, are made from other parts of the pig. Farmers feed pigs corn and other grains. Pigs also eat “pig food” made with meat scraps, milk, peanuts, soybeans and other foods.

Think and Learn

1. How do pigs cool themselves? _____
2. Pigs use their _____ for finding and digging up food.
3. Pigs are raised for their meat, which is called _____.
4. What are some other products made from parts of the pig?

Horse

The horse is a very useful animal. Long ago, people used horses to go places and move things. Now, many people use horses for fun. Some people, however, still use horses to herd cattle and sheep. Horses are built for running. They have long legs and strong feet. Their wide nostrils bring a lot of air into the lungs. They also have sharp senses of sight, hearing and smell.



Horses eat grass and grains. Their back teeth are wide and flat to grind grass into small pieces. These teeth never stop growing. Their front teeth are narrower and sharp. They help the horse bite off grass from the ground.

Think and Learn

1. What do people use horses for today? _____

2. Horses are built for _____.
3. What do horses eat? _____
4. How do horses use their back teeth? _____

HORSES

Pull-Out Storybook





There are more than 150 breeds of horses. These breeds are divided into three main groups, according to size. Light horses, such as quarter horses, are lean and athletic. Most weigh less than 1,300 pounds. Heavy horses, such as shires, are the biggest and strongest horses. Some weigh more than 2,000 pounds. Ponies, such as Shetland ponies, are the smallest horses. A pony stands less than 58 inches tall and usually weighs less than 800 pounds.



Shetland Pony

Quarter Horse

Shire



Horses are built for speed. In just a short distance, their strong legs can take them from standing still to a speed of 40 miles per hour. A horse also has a deep chest that holds a large heart and strong lungs. These body parts help the horse run fast for miles. The horse's long neck helps it to stay balanced while running.

When a horse gallops, each hoof touches the ground at a different time. At one point, all four hooves are lifted into the air for a split second before the horse lands with a thud.



Horses usually give birth to one baby at a time. A baby horse is called a foal. When it is born, a foal weighs about 100 pounds and is about 43 inches long. A few minutes after birth, a foal tries to stand up. At first, its long thin legs are wobbly. But soon, the foal is standing by itself. After only a few hours, the foal can walk and run next to its mother.





Foals are weaned, or separated, from their mother at about 6 months old. During this time, the young horses often are kept together to help them get used to being away from their mother.

Foals are very lively and playful. They love to jump, kick and run. They enjoy playing games or galloping across a field with other young horses.





Horses “talk” by making sounds and using body movements. Horses whinny or snort when they are excited. The position of a horse’s ears tells how the horse is feeling. Ears laid back show fear or anger. Ears pricked up show friendliness. Horses often circle and sniff each other when they first meet.





Horses have been helping people for thousands of years. At one time, horses were the fastest way of traveling on land. People have ridden horses to hunt for food, charge into battle and round up livestock. Horses have also been used to haul heavy loads, pull carts and carriages and plow land. Today, people use horses for fun and sport.





Horses belong to the animal family called Equidae. Other members of this family include zebras, donkeys and mules. Though these animals are different in size and color, they share many common features. For one thing, each member of the horse family has one hoof at the end of each leg. They also have long, powerful legs, pointed ears and manes that run down their necks. In fact, the body structures of horses and their relatives are so much alike that only an expert can tell their bones apart.



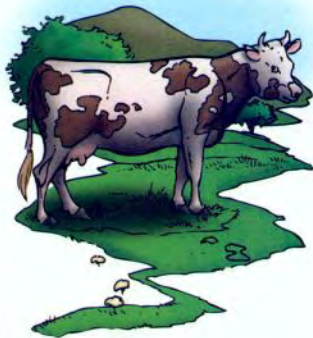




Cow



Cows are large farm animals with split hooves. They have long tails that help swat insects away. Cows eat grass, hay, corn and soybeans. They break down their food in a stomach that has four parts. When breaking down food, cows move it from the stomach back into their mouth to chew it again. The food that moves back into their mouth is called a cud. Cows chew the cud and swallow it again. Then, the food moves through the other parts of the stomach.



Cows are one of the most important farm animals. Farmers raise cows for their milk and their meat, called beef. Cow's milk is used to make cheese, butter, yogurt and ice cream. Other parts of a cow's body are used to make leather, soap and glue.

Think and Learn

1. What do cows eat? _____
2. Cows have a stomach that has _____ parts.
3. Meat from cows is called _____.
4. What foods are made from cow's milk? _____

Chicken

Chickens are ground birds. They have a plump body and rounded wings. Chickens can fly but for only short distances. They fly to get away from danger. Chickens have pointed beaks and strong claws that they use to scratch in the dirt and get food. Different kinds of chickens have feathers of different colors.



Chickens are raised on farms all over the world. Farmers raise chickens for their eggs and their meat, called poultry. Some chickens are raised only for their meat. Other chickens are raised just to lay eggs. Some farmers raise only baby chicks. They sell the chicks to other farmers who raise them for meat or eggs. Farmers feed chickens a mixture of ground corn, wheat and soybeans.

Think and Learn

1. Chickens fly for _____ distances.
2. How do chickens use their strong claws? _____

3. What are chickens raised for? _____
4. What do farmers feed chickens? _____

Sheep

Sheep are related to cows and goats. Like cows, sheep have a stomach that is divided into four parts. Sheep also have split hooves. Sheep do not need a lot of water to live. They like to eat grass and shrubs. When sheep eat, they bite off grass very close to the ground. If sheep are kept in the same pasture for a long time, they can kill all the grass.

Sheep are raised all over the world. However, the most sheep are raised in Australia and New Zealand. Sheep are very important animals because they give wool, milk and meat, called lamb or mutton. Wool is used to make clothing, blankets and rugs. Sheep's milk is used to make cheese.



Think and Learn

1. What other farm animals are sheep related to?

2. Sheep do not need a lot of _____ to live.

3. Where are the most sheep raised? _____

4. What are sheep raised for? _____

Goat

Goats are related to sheep and cows. Like sheep and cows, goats have split hooves and a four-part stomach. Goats have long shaggy hair. Most goats, both male and female, have a beard. Goats are known for eating almost anything. Because they have small mouths and flexible lips, goats can easily pick off only the healthful parts of a plant. They find food even in places where few plants can grow.



Farmers raise goats for their wool, milk and meat. People living in rocky, mountainous areas rely on goats for meat. People in the United States use goats mainly for wool and milk. Some people even keep goats as pets. Goat's milk is used for drinking and making cheese. The wool is used to make clothing and blankets.

Think and Learn

1. How are goats like sheep and cows? _____

2. Goats can pick off only the _____ parts of a plant.
3. Goats are raised for _____.
4. Goat's milk is used for drinking and making _____.

FAVORITE PETS



Cat



Rabbit



Guinea Pig



Toad



Frog



Dog





Dog

Dogs are popular pets throughout the world. Dogs have been bred through the years for certain jobs, such as guarding, hunting and herding. Some dogs have been bred just to be pets. Dogs come in all sizes, colors and personalities. When choosing a dog for a pet, the dog's qualities must fit in with the family's lifestyle.



Taking care of a dog is a big responsibility. Dogs need to be fed every day. They need clean, fresh water all the time and a warm, dry place to sleep. Dogs also need regular exercise, especially if they are big dogs. Dogs must be brushed and bathed regularly. Dogs also need medical check-ups every year. They must have vaccines and medicines to stay healthy.

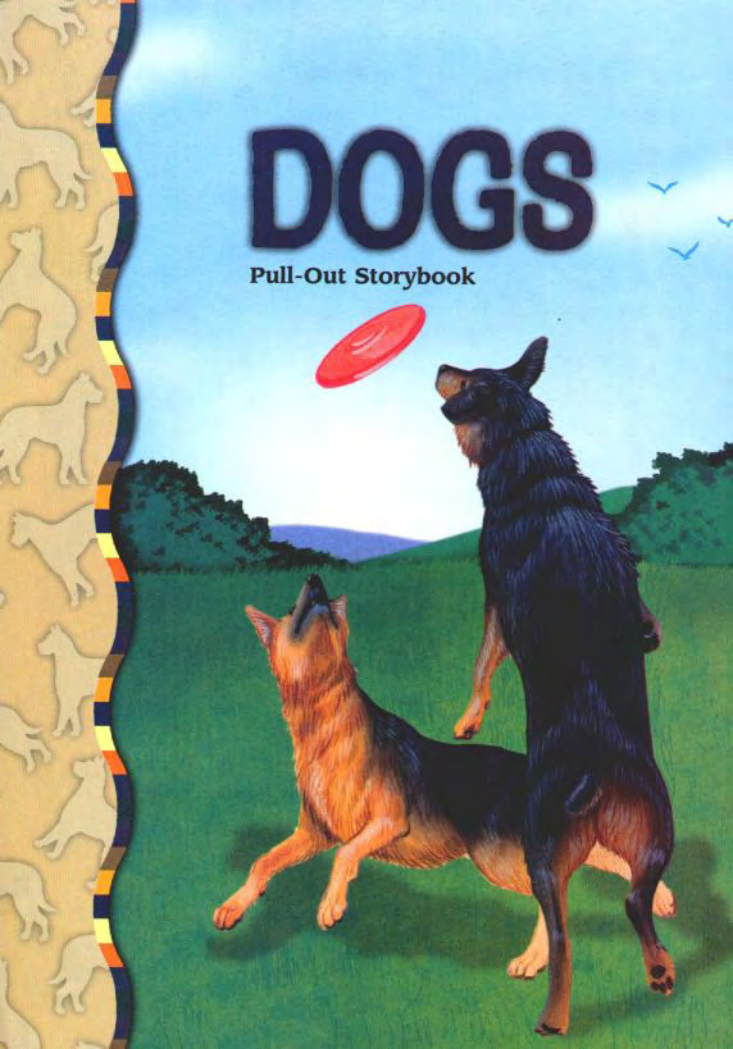
Think and Learn

1. What jobs have dogs been bred for? _____

2. Dogs should be fed _____.
3. Dogs need regular _____.
4. Every year, dogs need medical _____.

DOGS

Pull-Out Storybook





Irish Wolfhound





Saint Bernard





Chihuahua

Dogs were the first animals to be made into pets. The first pet dogs were wolves. Over the years, dogs have formed different characteristics from wolves. Now, there are more than 400 different breeds of dogs. These dog breeds have been divided into several main groups, such as herding dogs, sporting dogs, hounds, working dogs and toy dogs.



Dogs are champion long-distance runners. They have great strength and can run for miles without getting tired. In fact, some dogs have been known to travel hundreds of miles in search of owners they have been separated from. Dogs have strong hearts and lungs and powerful muscular legs. As they run, their paws firmly grip the ground. If necessary, dogs can gallop with great bursts of speed or stop quickly and change directions. Like their ancestors who hunted animals for food, dogs have bodies that were born to chase.





Dogs usually give birth to one to twelve puppies at a time. The mother dog feeds, cleans and protects her babies.

Puppies begin walking around and exploring at about 3 weeks of age. At 4 weeks, they start to play. Sometimes, their mother joins in their games. Through play, puppies learn to move and the rules of proper dog behavior. For example, if a puppy bites too hard while playing, its mother might growl and nip it back.



Dogs enjoy playing at any age. When they are young, play is an important part of their growth. Puppies who have played with other dogs and with people are more likely to become healthy adult dogs. Adult dogs need daily exercise to stay fit and healthy. Play also strengthens the bond between the dog and its owner.



Dogs use sounds and body language to show how they feel. A dog might bark or whine if it wants attention. A happy dog wags its tail and moves excitedly. A frightened dog flattens its ears back and hangs its tail between its legs. An angry dog shows its teeth and growls.





Dogs have been helping people for thousands of years. Dogs are good helpers because they are smart and easy to train. They are also devoted to their owners if they are treated well. Originally, people used dogs to guard homes or herd livestock. Over time, people used dogs for more jobs. In Arctic regions, people relied on dogs for pulling sleds and hunting. During wars, dogs were used to deliver messages or find injured soldiers. Today, some dogs are trained to help people who are blind or deaf. Others help the police find lost people or criminals and sniff out drugs.



Dogs belong to the animal family called Canidae. This family includes wolves, coyotes, foxes and jackals. Dogs and their wild cousins are found all over the world. They have special features that help them to live in their surroundings.



Coyote

African Wild Dog



Jackal

Fennec Fox

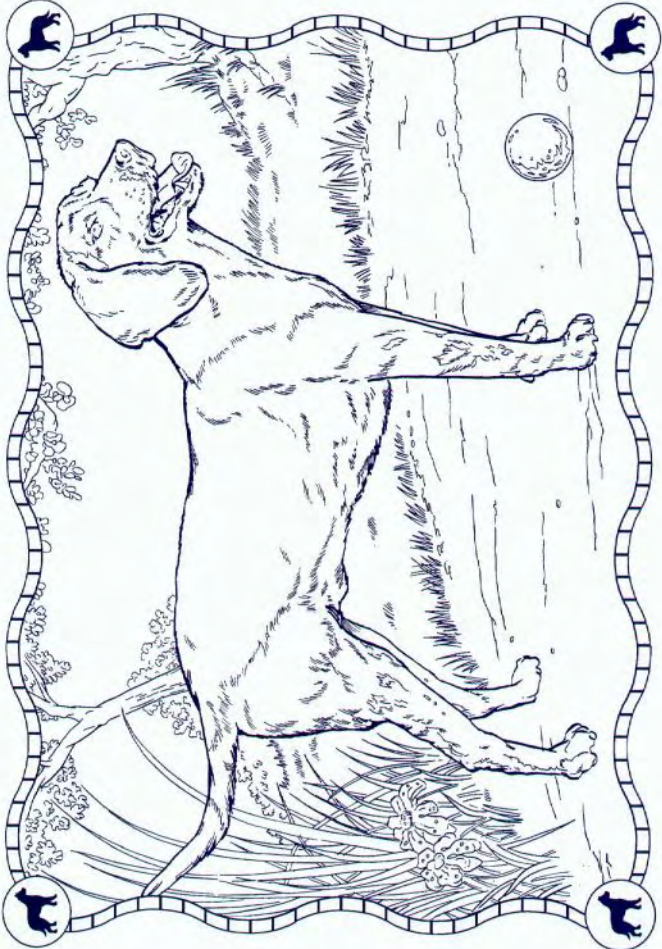
Arctic Fox



Gray Fox



Wolf





Cat

Cats have been favorite pets for thousands of years. At first, people had cats to get rid of pests, such as mice and snakes. Cats are skilled hunters. They have keen senses, sharp claws and the ability to jump and climb. Today, most people have cats to keep them company. Cats are smart but rather independent animals. They make good pets for people who are not home often.



Cats need to be fed every day. They must always have fresh water for drinking. Cats are clean animals and groom themselves often. However, cats should be brushed regularly to remove dead hair, especially if the cat has long hair. Cats must also be taken to the veterinarian for medical check-ups.

Think and Learn

1. Why did people first keep cats as pets? _____

2. Cats have keen senses and sharp _____.
3. Cats are clean animals and _____ themselves.
4. Cats must go to the _____ for check-ups.



Animal Friends

Plants, animals and people must share our world. How can you be kind to our animal friends? Under each picture, write one way that you can be kind to that animal.

Be Kind to Our Animal Friends





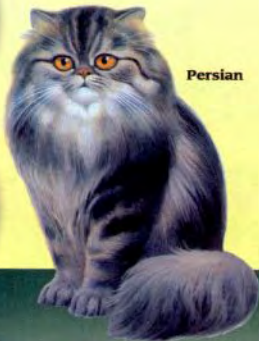


CATS

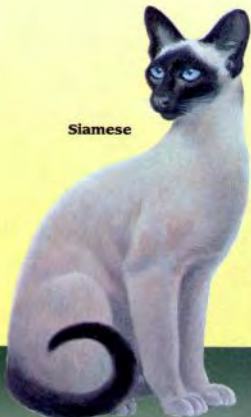
Pull-Out Storybook



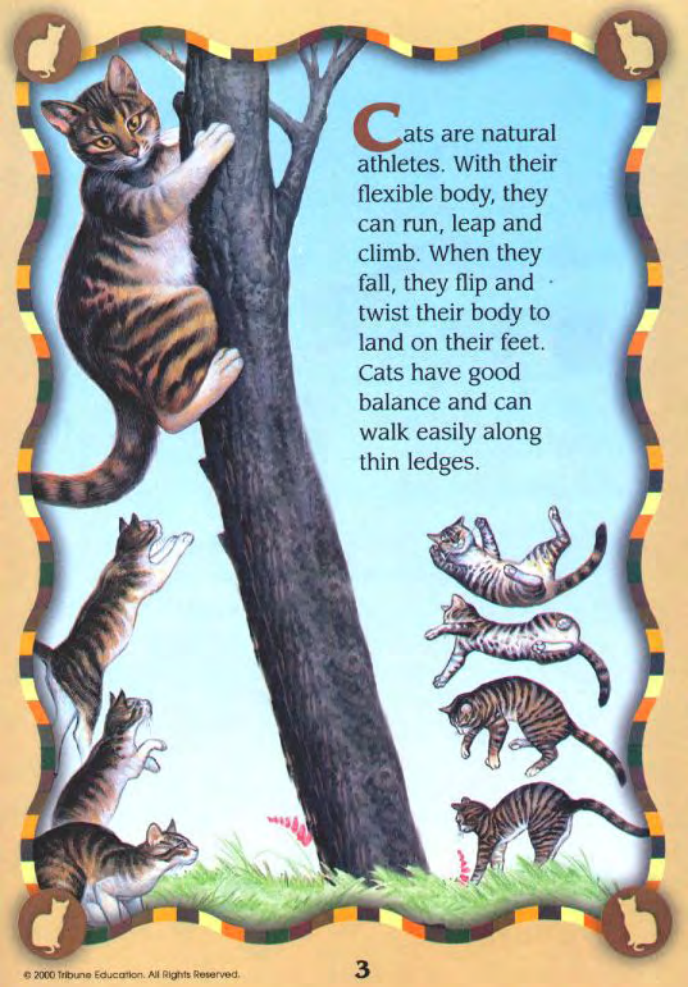
There are many different breeds of cats. Cats are divided into two main groups, depending on the length of their hair. Long-haired cats have long silky coats. These cats probably came from cold areas, where thick coats protected them from harsh winters. Short-haired cats have short sleek coats. These breeds are easier to care for because their coats need less grooming.



Persian



Siamese



Cats are natural athletes. With their flexible body, they can run, leap and climb. When they fall, they flip and twist their body to land on their feet. Cats have good balance and can walk easily along thin ledges.





Cats are excellent hunters. Cats have a keen sense of hearing that helps them to hear even the slightest movement of another animal. Cats also have sharp eyesight. During the day, a cat's pupils are narrow. The pupil is the dark part in the middle of the eye that opens and closes to let in light. At night, a cat's pupils widen to let more light enter. Cats have a mirror-like layer of skin at the back of each eye. This helps them to see even small objects in very dim light.

Cats usually have three to five kittens at a time. The kittens depend entirely on their mother to feed, clean and protect them. At first, the mother cat spends almost all of her time caring for her babies, leaving them only to eat or to use the litter box. As the kittens grow older and more independent, the mother leaves them for longer periods of time. Once the kittens are 6 to 10 weeks of age, they can be separated from their mother. By this time, the mother has taught her kittens how to live on their own.





Kittens love to play! When kittens play, they exercise their body to help it grow strong. Kittens learn to hunt when they stalk and pounce on objects. When they play-fight, they learn to defend themselves. All these play activities teach kittens how to live on their own.



Cats use their voice, face and body to communicate, or “talk.” Cats can make more than 60 different sounds, ranging from soft purrs to loud screams. Each sound has a different meaning. Purrs usually mean a cat is happy. Hisses and screams show that a cat is feeling angry or afraid.

A cat also shows how it’s feeling by the look on its face and the position of its body. A friendly cat rubs its face and body against a person. An angry cat curls up its lips and arches its back.



Cats belong to a family of animals called Felidae. There are more than 30 different kinds of cats. They include lions, tigers, ocelots and pumas as well as house cats. Most wild cats live alone. The lion is the only wild cat that lives in a group. The tiger is the largest member of the cat family. Ocelots are skillful climbers. The black leopard has a coat so dark that its black spots are invisible. The jaguar is very strong. It can drag an animal much heavier than itself.

Lion

Ocelot

Jaguar

Black Leopard

Tiger

Cheetah
House Cat

Puma







Rabbit

Rabbits are rodents with long ears and fluffy tails. Rodents are animals with front teeth that grow all the time. Pet rabbits must always have something to chew on. If not, their front teeth will grow too long for them to chew food normally.

Pet rabbits need a hutch, or a cage, to live in. They can be kept outside in a shady place during the summer. In winter, they must be kept in a heated garage or a cool basement. Rabbits eat pellets made just for them. They need fresh hay to eat every day. They also like fresh vegetables, clover and grass. A water bottle filled with clean water should always be kept in the cage. Most rabbits do not like to be held for a long time. Never pick up a rabbit by its ears.



Think and Learn

1. A rodent has front _____ that grow all the time.
2. What do pet rabbits live in? _____
3. What do rabbits eat? _____

4. Never pick up a rabbit by its _____.

Guinea Pig

A guinea pig is a small animal with a large head, short legs and small ears. They grow to 14 inches long and weigh about 1 pound. Guinea pigs are not really pigs. They are rodents. Rodents have front teeth that never stop growing. For this reason, guinea pigs must always have a piece of wood to gnaw on.



Guinea pigs make good classroom pets. They are easy to care for, and they don't often bite. Guinea pigs need a cage through which air can easily move. They should have food and fresh water in their cage at all times. Guinea pigs eat grain, fresh vegetables and hay. Guinea pigs are most active at night. They are quiet during the day and sleep in a burrow they make in their cage.

Think and Learn

1. Guinea pigs are not pigs; they are _____.
2. What is the length of a guinea pig? _____
3. Why do guinea pigs make good classroom pets? _____

4. Guinea pigs are most active _____.

Frog

Frogs are animals that spend part of their life in water. Some frogs live mostly in water. Other frogs live mostly on land. Almost all frogs lay their eggs in or near water. Tadpoles hatch from the eggs. Tadpoles swim and grow in water. As they grow, they change from a fishlike animal to an adult frog.

Pet frogs need a lot of care. Frogs are kept in aquariums. The kind of pet frog determines the environment in the aquarium. Some kinds of frogs live in half water and half land environments. Others live in all water environments. Still others live in all land environments. Frogs must be fed regularly. Many frogs eat live insects, such as crickets. Others eat frozen worms.



Think and Learn

1. Frogs spend part of their life in _____.
2. _____ hatch from frog eggs.
3. Where are pet frogs kept? _____
4. What do pet frogs eat? _____



Compare and Contrast

Read about frogs and toads in the "Frogs" storybook. Then, use the Venn diagram and the facts you have learned to compare and contrast these two animals.

Frog



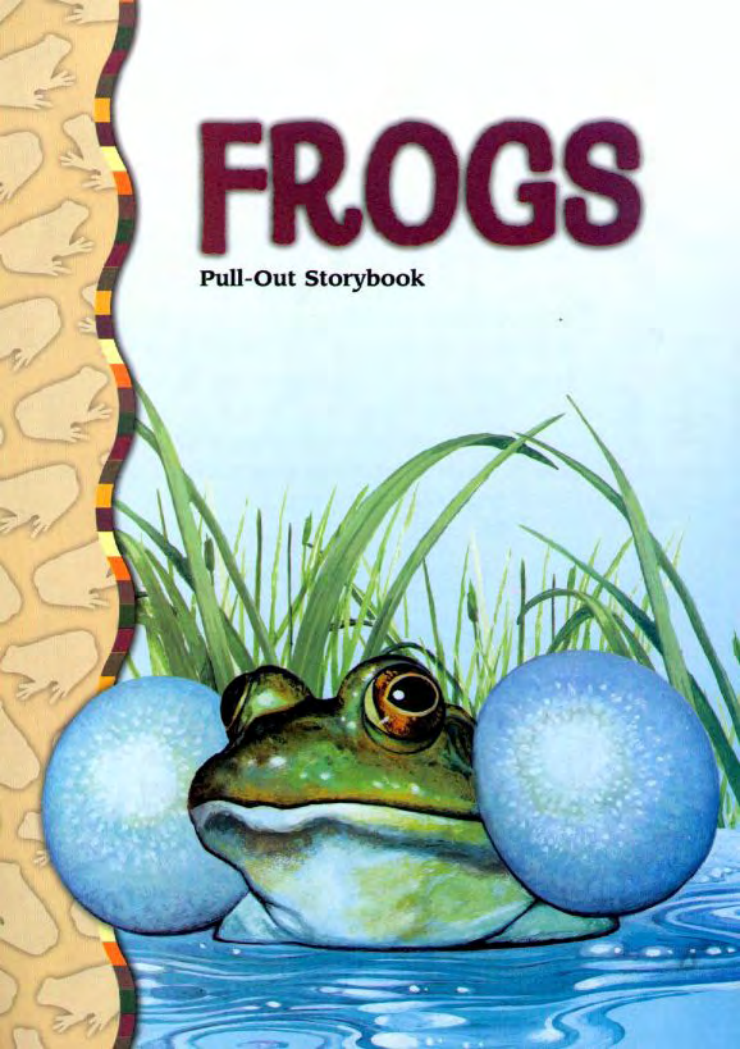
Both



Toad

FROGS

Pull-Out Storybook



Frogs are amphibians. Amphibians are animals that spend the first part of their life in water and the second part on land. Frogs and their cousins, the toads, make up the largest group of amphibians. Frogs and toads look alike but do have some differences. Generally, frogs have slender bodies and smooth, moist skin. Toads have plump bodies and bumpy, drier skin. Most frogs have long powerful hind legs that help them leap long distances. Toads, on the other hand, have short legs. They tend to waddle or hop.





Like all amphibians, frogs are cold-blooded. This means that their body temperature changes to match the temperature of their surroundings.

The smooth, moist skin of frogs does more than protect the body. Although frogs breathe with lungs, they also take in air through their skin. Frogs take in water through their skin, too. Instead of drinking with their mouths, they simply sit in water and soak it up like a sponge.



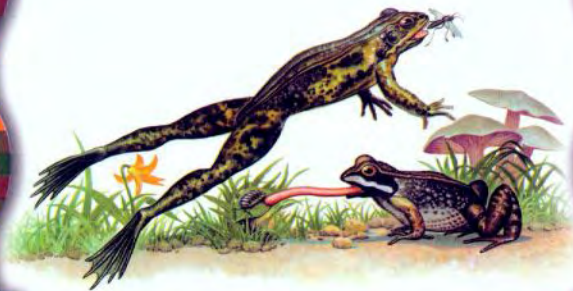
Frogs are expert swimmers. Their webbed feet act like flippers to push the water backward. As it swims, a frog kicks its hind legs back to push itself forward. Then, it draws its legs up to its body to get ready for the next kick.

Frogs that burrow and dig have pointy feet.
Frogs that climb trees have sticky feet.
Frogs that swim have webbed feet.



A frog's feet give clues about the way it lives.

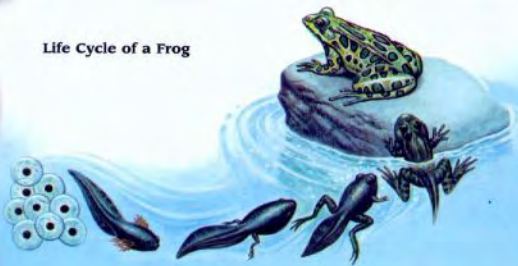
Most frogs eat insects. Large frogs even eat mice, rats and lizards. Frogs hunt mainly by sight. Their large bulging eyes can see the tiniest movements of their prey. When ready to attack, a frog flicks out its weapon—a long tongue with a sticky tip. The frog traps its prey on the end of its tongue, then whips the prey into its mouth. If the prey is too far for their tongue to reach, frogs jump up and grab the prey in their mouth.



Each kind of frog makes its own special sound. The sounds range from peeps and grunts to pops and whistles. When "speaking," a frog pumps air back and forth over its vocal cords. The vocal cords are bands of skin that lie between the mouth and lungs. Many male frogs also have an air sac called a vocal sac. The sac swells as the frog calls out, making the sound even louder. Some frogs have one vocal sac under the chin. Others have a vocal sac on each side of the head.



Life Cycle of a Frog



Frogs lay their eggs in water. They may lay hundreds, or even thousands, of eggs at a time. But only a few of these eggs develop into adult frogs.

The babies that hatch from the eggs are called tadpoles. With their round head, legless body and long tail, they look more like fish than frogs. Unlike adult frogs, tadpoles breathe with gills. As tadpoles grow, their lungs start to form, their legs appear and their gills and tail begin shrinking. Eventually, they lose their gills and tail altogether.



Flying Frog



Red-Eyed Tree Frog

Frogs and toads belong to a group of animals called Anura, meaning "tailless." There are more than 3,000 different kinds of frogs and toads around the world. Though many of these animals are easy to recognize as "froglike" or "toadlike," some have unusual features. Most of these features help the animals survive in their environments.

Hairy Frog



Bony-Headed Tree Frog

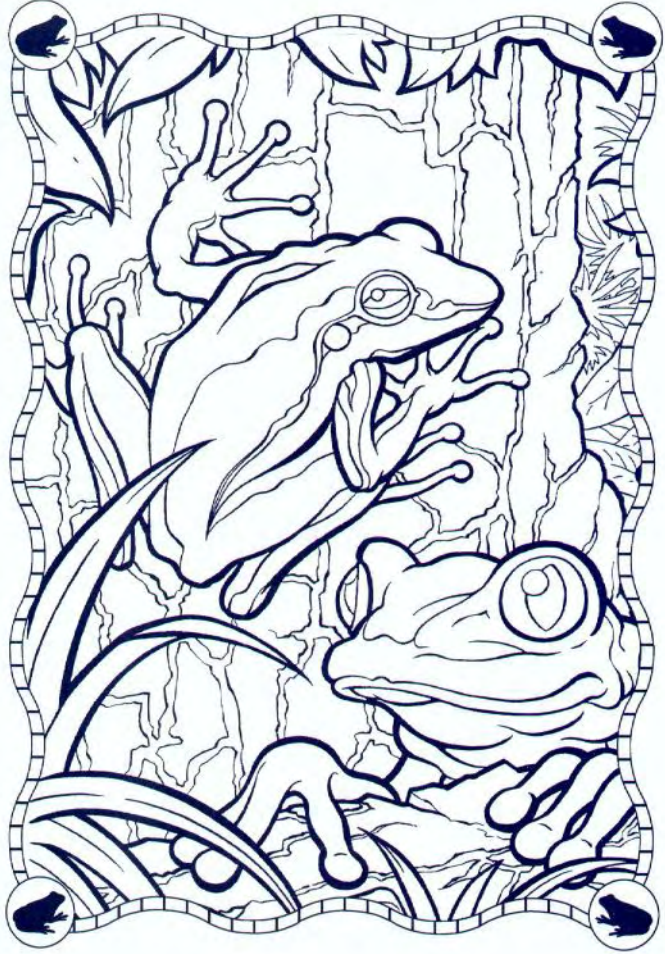


Poison Dart Frogs



Goliath Frog







SCIENCE

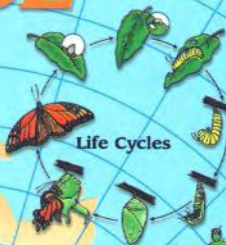
and ANIMALS



Vertebrates



Life Cycles



Food Chains



Reptiles



Amphibians



Invertebrates



Birds



Animal Adaptations



Fish



Mammals

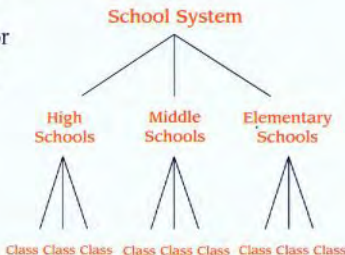




Classification Systems

Scientists divide all living things into major groups. Then they divide these major groups into smaller groups. And they divide the smaller groups into still smaller groups. This is called a classification system.

Your school uses a classification system, too. The whole school system includes all the schools in your area. High schools, junior high or middle schools and elementary schools make up the school system. You go to school in a certain elementary school. You are in a certain class within your school.



Think and Learn

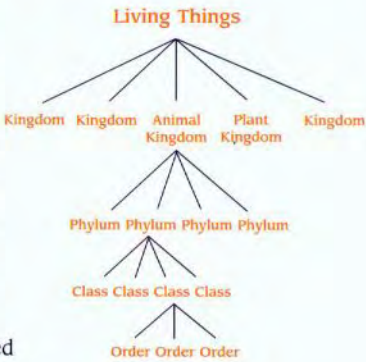
1. Scientists use a classification system to divide _____ into major groups and smaller groups.
2. What are the different kinds of schools that make up your school system? _____
3. What are elementary schools divided into? _____



Classifying Animals

Just as your school system includes the several different kinds of schools, all of Earth's living things make up several major groups. Scientists call these major groups kingdoms. Two of the kingdoms of living things are the Plant Kingdom and the Animal Kingdom. The Animal Kingdom contains all the animals in the world.

Scientists divide each kingdom into large groups called phyla (FIH luh). Each phylum (FIH luhm) is divided into smaller groups called classes. Each class contains smaller groups called orders. In this way, scientists classify all living things on Earth.



Think and Learn

1. What do scientists call the major groups of living things?

2. What are two kingdoms of living things? _____

3. Kingdoms are divided into large groups called _____.
4. Scientists divide phyla into _____.



Classifying Vertebrates

Animals that have backbones are called vertebrates (VER tuh bruhts). Scientists classify vertebrates into five main groups called classes. The five main classes of vertebrates are shown below. Write the correct class name under the picture. Then, color each of the vertebrates.

Birds have feathers and wings. Baby birds hatch from eggs.



Fish live in water and breathe through gills. Scales cover their body.



Amphibians live some of their life in water and some on land. Adults breathe with lungs.



Mammals have hair on their bodies. They feed milk to their young.



Reptiles live on land. They have dry scaly skin and breathe with lungs.



reptile
bird

fish
mammal

amphibian



Backbones

Animals with backbones are called vertebrates. Each skeleton below shows a different class of vertebrates. Color the backbone in each skeleton. Then, write the class below each animal.











bird
reptile

mammal
fish

amphibian



Classy Vertebrates

Scientists group the vertebrates into five main classes. Write the name of the vertebrate class for each picture.



reptile
bird

fish
mammal

amphibian



Animals With Backbones

Vertebrates are animals that have backbones. There are five main classes of vertebrates. Read the characteristics listed in the second column. Then, write the name of the class in the first column. Write an example of each class in the third column.

class	characteristics	example
	<ul style="list-style-type: none">• live in water• breathe with gills	
	<ul style="list-style-type: none">• live partly in water and partly on land• breathe with lungs as adults	
	<ul style="list-style-type: none">• have dry, scaly skin• breathe with lungs	
	<ul style="list-style-type: none">• have feathers and wings• breathe with lungs	
	<ul style="list-style-type: none">• body covered with hair• feed young with milk	

reptiles

fish

trout

amphibians

birds

mammals

bear

hawk

toad

turtle



Parts of a Fish

Fish make up one class of vertebrates. There are many different kinds of fish. They vary greatly in size and shape. Most fish have certain features in common, however.

Fish eat plants and other animals with a mouth. They see where they're going with their eyes. Fish breathe under water through structures called gills on the sides of their heads.



The bodies of fish are covered with tiny scales. Scales make fish smooth on the outside and help them swim easily through the water. Fish move through the water by using their fins. They have several body fins. The tail fin helps them move fast and in the direction they want to go.

Think and Learn

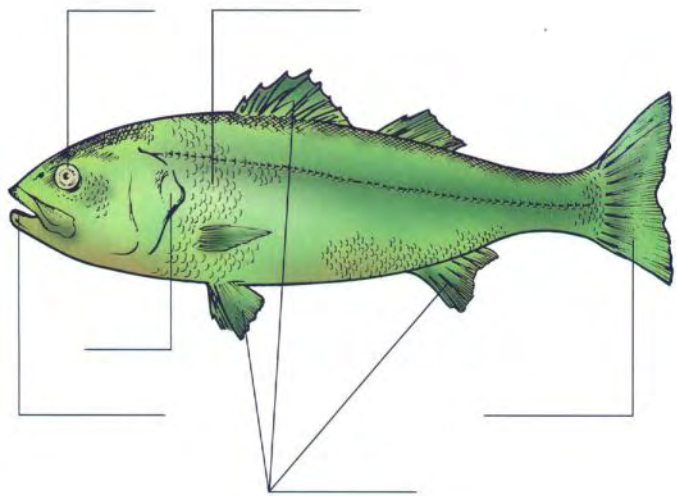
1. _____ allow fish to see underwater.
2. Fish use _____ to breathe underwater.
3. What do fish use their fins for? _____

4. Do all fish look alike? _____



Parts of a Fish

Label the parts of the fish.



mouth
eye

gill
scales

body fins
tail fin



Life Cycle of a Frog

Frogs are amphibians. They begin their lives as though they were fish but are more like land animals as adults. Frogs pass through stages during their lives. The series of stages in the life of an animal is called its life cycle.



A frog's life cycle begins when an adult frog lays a mass of eggs in a pond or stream. Each egg hatches one baby frog called a tadpole. A tadpole is in many ways like a fish. It has a tail, and it breathes underwater through gills. As the tadpole grows, it gradually grows legs and begins to lose its tail. Its gills slowly develop into lungs for breathing air. At this stage, the animal is called a tadpole frog.

A tadpole frog gradually develops into a young frog. A young frog lives in water and on land. It has legs, lungs and no tail. The young frog grows to become an adult frog. The life cycle begins again when a mother adult frog lays a mass of eggs in water.

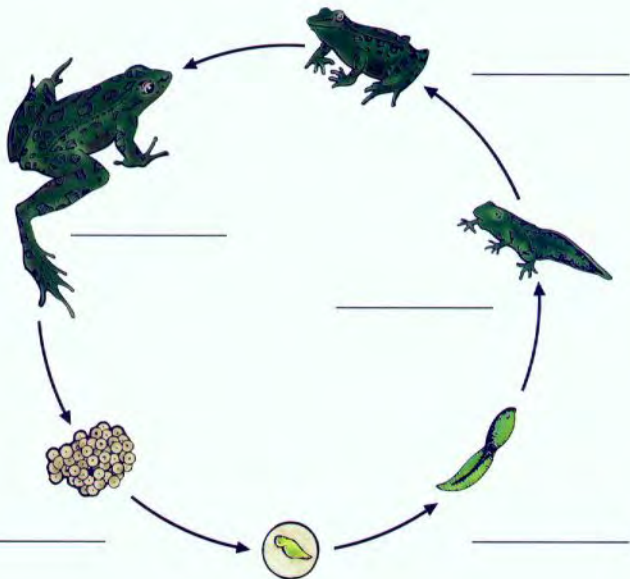
Think and Learn

1. A frog is called a _____ when it has a tail and breathes through gills.
2. When a tadpole becomes a frog, it grows legs and develops lungs. What does it lose? _____
3. The series of stages in the life of an animal is called its _____.



Life Cycle of a Frog

Label the steps in the life cycle of the frog.



tadpole
adult frog

egg
young frog

tadpole frog
egg mass



Parts of a Rattlesnake

Rattlesnakes are poisonous snakes. When they bite an animal they want to eat, they kill it with a poison called venom. Rattlesnakes store their venom in a venom sac in the back of their head. When they open their mouth wide, sharp teeth called fangs extend down from the top of the mouth. When the snake bites an animal, venom flows from the venom sac into the fangs and into the animal.



Rattlesnakes can see and smell. But they mainly sense other animals by feeling their warmth. These snakes have holes, called pits, on the sides of their head that can sense heat around them.

When a rattlesnake is afraid, it makes a noise with a rattle at its tail. When the snake shakes its tail, the rattle makes a loud buzzing sound.

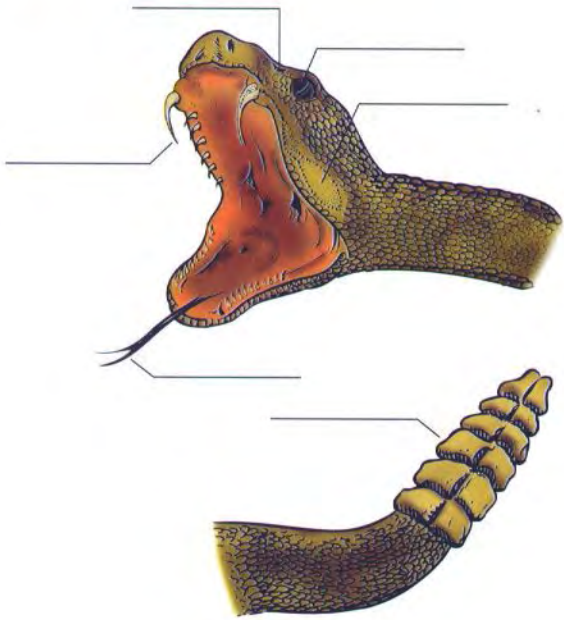
Think and Learn

1. A rattlesnake stores its poison in a _____.
2. A rattlesnake sends its poison into an animal through its _____.
3. A rattlesnake senses heat with its _____.
4. When a rattlesnake is afraid, it makes a noise with a _____ at the end of its tail.



Parts of a Rattlesnake

Label the parts of a rattlesnake.



fang
rattle

pit
eye

venom sac
tongue

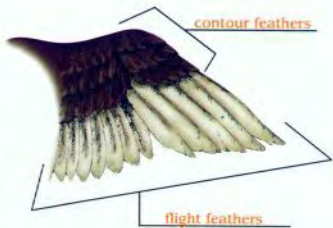


Parts of a Bird

Scientists and bird watchers use special terms to describe a bird. These terms can help you notice the different parts of a bird. In that way, you can begin to tell birds apart and identify different ones.

A bird's mouth area is called its beak. Above the beak are its eyes. The area on the top of the head is called the crown. The bird's neck area is called its throat. The chest area of a bird is called its breast. A bird also has a back and a belly, just as you do.

Feathers are important for a bird. They protect the bird from sun, wind and water, and they allow the bird to fly. The feathers that cover the outside of a bird are contour feathers. The long contour feathers on the wings are flight feathers. A bird's tail feathers help both in flying and in landing.



Think and Learn

1. The chest area of a bird is called its _____.
2. The top of a bird's head is called the _____.
3. What are the long contour feathers at the end of the wing called? _____



Parts of a Bird

Label the parts of a bird.



crown
eye
beak
belly

throat
breast
back

contour feathers
flight feathers
tail feathers



Bird Beaks

Bird beaks vary greatly in both shape and size. By looking closely at a bird's beak, you can often tell what kind of food that bird eats. Some birds feed on small animals, while other birds eat seeds. Their beaks are different, because they are used differently. Hawks, for example, have a beak made for tearing the meat of small animals, such as mice. The tiny hummingbird has a beak made for sucking liquid from flowers.

Cardinals have a strong beak good for cracking seeds. Fast-flying swallows have small beaks made for catching insects. Robins have pointed beaks for stabbing worms. Woodpeckers have strong beaks just right for pounding holes in wood as they look for insects.

Many water birds also have different kinds of beaks. A pelican has a large beak made for scooping up fishes. An aninga has a sharp beak good for stabbing fish that swim by.

Write how each bird uses its beak.



Hawk _____

Cardinal _____



Bird Beaks

Write how each bird uses its beak.



Pelican _____



Hummingbird _____



Swallow _____



Robin _____



Anhinga _____



Woodpecker _____



Feathered Friends' Feet

Just as a bird's beak can tell you what it eats, a bird's feet can tell you many things about its habits or home. Think about what you already know about the birds listed below. How do each of these birds use their feet in a special way?



Sparrow _____



Woodpecker _____



Duck _____



Hawk _____



Heron _____

for perching on branches
for wading in mud
for climbing

for catching small animals
for swimming



Strangers in the Night

It's much easier to identify a bird when you can see its color, size and shape. At night, however, it is difficult to see. Identify these birds just by their shapes, or silhouettes.



heron
robin
crow
gull

duck
hawk
owl

hummingbird
cardinal
blue jay



What's a Mammal?

When you think of an animal, you probably think about a mammal. Mammals live in every part of the world. They range from tiny mice to the largest animals on Earth, the whales. Mammals include dogs, cats, cows, bears, kangaroos, raccoons, rabbits, elephants, dolphins, and many others. Human beings are also mammals.



Mammals are the only animals with hair. Any animal with hair is a mammal. Even whales have a few hairs on their body. Most mammals are covered with hair. The hair keeps the body warm and dry. When mammals give birth, the mother feeds her young with milk from her body. No other animals feed their young with milk.

Mammals have large well-developed brains compared with other animals. These large brains make mammals very intelligent animals.

Think and Learn

1. Mammals have large well-developed _____.
2. The largest mammal on Earth is the _____.
3. How does hair protect a mammal? _____

4. Baby mammals get _____ from their mother's body.



What's a Mammal?



Think and Learn

1. Look at the picture above. How do you know the mother is a mammal? _____

2. In the picture above, what are the babies doing that only young mammals do? _____



The Mammal With Wings

Bats are the only mammals that can fly. Some squirrels can glide, but bats really fly like birds. They can fly because they have wings.

A bat wing is made of a thin layer of skin called a wing membrane. This skin stretches between the long fingers on a bat's hands. The thumb is the only finger not attached to the wing membrane. On most bats, the wing membrane also stretches between the hands and the legs. It even stretches across the tail between the legs. When bats flap their wings, they can fly.



Bats fly mainly at night, when they hunt flying insects. They can find insects in the dark by using their large sensitive ears. During the day, most bats sleep by hanging upside down.

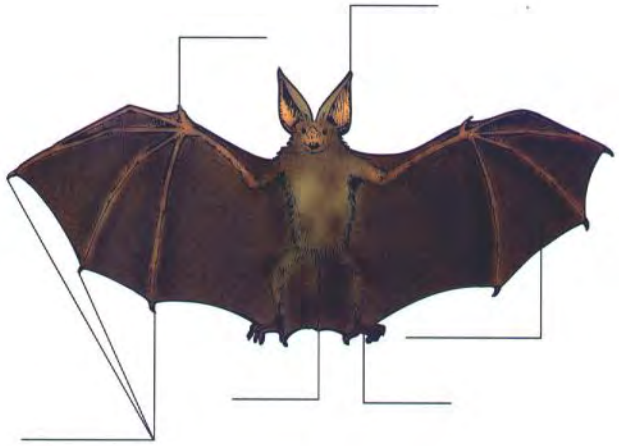
Think and Learn

1. Bats are the only mammals that can _____.
2. A _____ stretches between a bat's fingers.
3. When do bats hunt for food? _____
4. Bats sense where insects are flying with their _____.



The Mammal With Wings

Label the parts of a bat.



foot
thumb

ear
fingers

wing membrane
tail

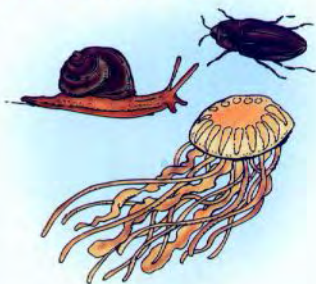


Animals Without Backbones

Animals that have a backbone are called vertebrates. Animals without a backbone are called invertebrates. There are many more invertebrates than vertebrates. More than nine out of ten animals on Earth are invertebrates.

The many different kinds of invertebrates vary greatly in shape and structure. They have only one thing in common. None have a backbone. Some, such as insects and lobsters, have a hard covering on the outside called an exoskeleton. Clams and snails have shells around their soft bodies. Other invertebrates, such as sponges and jellyfish, have no hard covering or shell.

What are some invertebrates you have seen? Sponges, jellyfish, earthworms, clams, snails, octopuses, starfishes, spiders, lobsters and insects are all invertebrates.



Think and Learn

1. Animals without a backbone are called _____.
2. Insects have an _____ on the outside of their body.
3. What are two invertebrates that have no outer covering or shell? _____



Animals Without Backbones

Write whether each animal is a vertebrate or an invertebrate.





Kinds of Insects

There are many kinds of insects. This table shows some common insects that represent different insect groups.

Insect	Characteristics
Stag beetle	large rounded insect with large mouth that looks like a deer's antlers
Dragonfly	large insect with huge front and back wings
Dog flea	tiny wingless insect that sucks blood from dogs
Moth	insect with feathery antennae and broad wings
Housefly	small two-winged insect found almost everywhere
Praying mantis	large insect with front legs that look like they are folded in prayer
Water bug	large rounded insect with wings folded back and pierce-sucking mouths
Wasp	large thin insect with narrow wings and a stinger at the rear



Kinds of Insects

Write the name of each insect on the line.

















moth
praying mantis
dog flea

wasp
housefly
water bug

stag beetle
dragonfly



Spiders and Insects

Both spiders and insects are invertebrates. But spiders are not insects, though many people think so. If you look closely at a spider and an insect, you can see how different they are.



An insect has three main body parts. The head is in front. The chest is the next part. The abdomen is behind the chest. Most insects have wings attached to the chest. Insects also have six legs attached to the chest, three on each side.

A spider has two main body parts. The head and chest together make up one part. The abdomen is behind. A spider has eight legs attached to the head-and-chest part, four on each side. Spiders do not have wings.

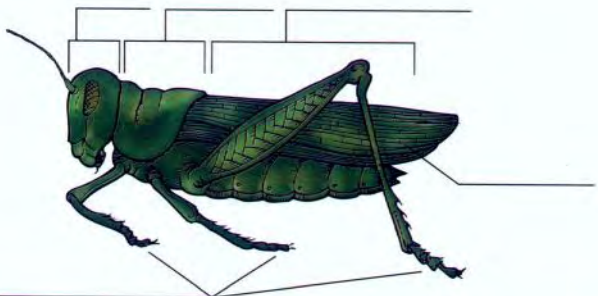
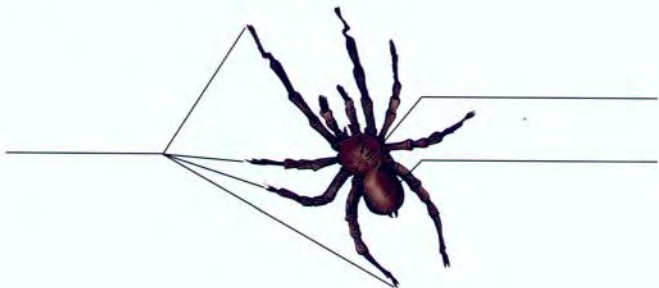
Think and Learn

1. Insects and spiders are both _____.
2. An insect has _____ main body parts.
3. A spider has _____ main body parts.
4. How many legs does an insect have? _____
5. How many legs does a spider have? _____



Spiders and Insects

Label the parts of the insect and the spider.



eight legs
abdomen
chest

wings
head

head and chest
six legs



Parts of a Honeybee

A honeybee is a flying insect. Like all insects, it has three main body parts. From front to back, it has a head, a chest, and an abdomen. The bee's wings are attached to the chest. Six legs—three on each side—are also attached to the bee's chest.

A bee senses its environment through its antennae and its eyes. The antennae are on the front of the head. A bee senses touch and smell with them. A bee also has several eyes on its head. The large eyes on either side are called compound eyes. A compound eye is made of many smaller eyes and sees in many directions.

A honeybee has a stinger at the end of its abdomen. The stinger is one way a bee protects itself.



Think and Learn

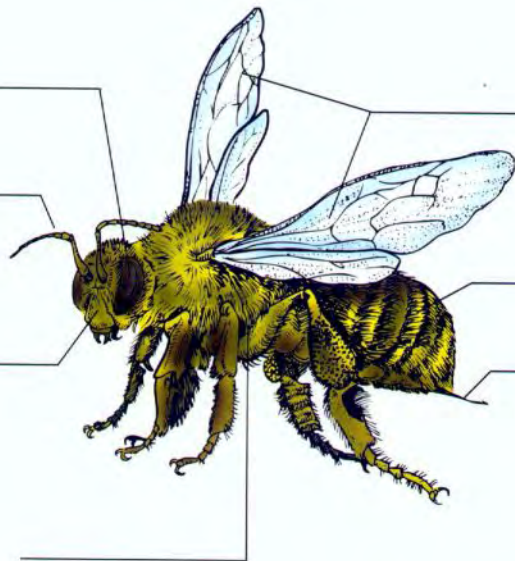
1. What are the three main body parts of a bee? _____

2. A bee has two large _____ eyes.
3. A bee defends itself with its _____.
4. A bee senses smell and touch with its _____.



Parts of a Honeybee

Label the parts of a honeybee.



stinger
wings
head

chest
antenna

compound eye
abdomen



Life Cycle of a Monarch

Monarch butterflies are beautiful insects. The monarchs you see flying from flower to flower are all adults. During a monarch's life cycle, its body changes shape from a wormlike animal to a lovely winged insect. This change is called metamorphosis (meht uh MOR fuh sis).



The life cycle of a monarch begins when an adult lays eggs on a leaf. A caterpillar, which looks like a worm, hatches from each egg. The caterpillar grows as it eats leaves and other food. When it grows large enough, the caterpillar begins wrapping itself in a silk covering called a cocoon. When it's inside the cocoon, the monarch is called a pupa. Great changes then take place. After a time, an adult monarch butterfly finally comes out of the cocoon. Metamorphosis is complete.

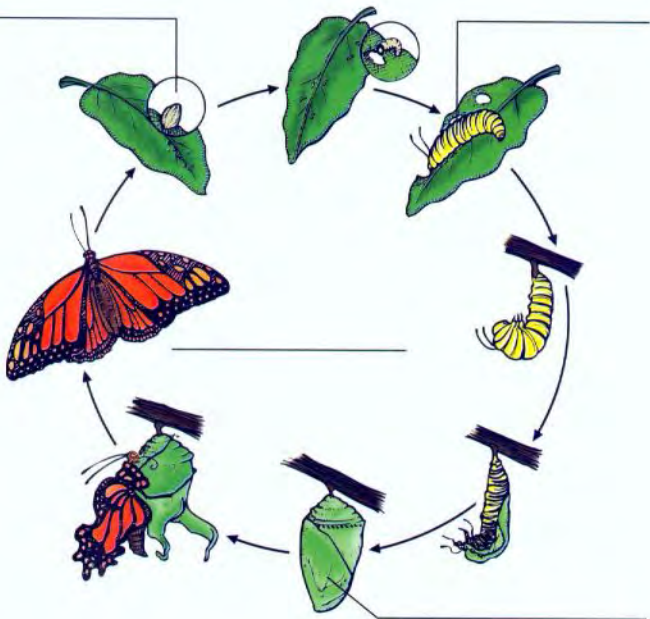
Think and Learn

1. The great change in body shape that happens during a monarch's life cycle is called _____.
2. A monarch egg hatches a _____.
3. The pupa is wrapped inside a _____ made of silk.
4. What comes out of a cocoon? _____



Life Cycle of a Monarch

Label the steps in the life cycle of a monarch.



egg
caterpillar

adult butterfly

pupa in a cocoon



Parts of a Clam

Clams are invertebrates that live in water. A hard shell surrounds the animal's soft body. Clams can move around by using a muscle called a foot. They stick the foot out of the shell and push against a lake or ocean floor.



Clams eat and breathe by pulling water inside their shells through a tube called a siphon (SIH fuhn). Sometimes, clams bury themselves in sand for protection. To eat, they extend a siphon up to the top of the sand and suck in water.

Most of the soft body inside the shell is called the mantle. The shell is attached to the mantle. When water comes through one siphon, it passes through the clam's gills. The gills collect oxygen and bits of food from the water. The water then leaves the animal through the second siphon.

Think and Learn

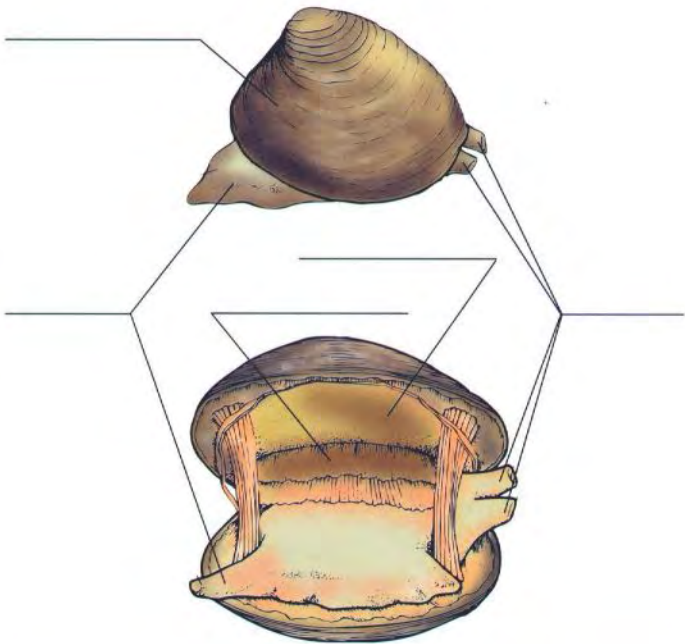
1. A _____ surrounds and protects a clam.
2. A clam moves by using its _____.
3. How does water flow into the clam? _____

4. The clam's _____ collect oxygen and food from water.



Parts of a Clam

Label the parts of a clam.



gills
shell

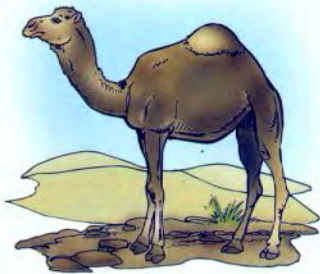
siphons
foot

mantle



Animal Adaptations

Each kind of animal has characteristics that allow it to survive in its environment. For example, a fish has gills for breathing underwater. If it had lungs like mammals, a fish could not survive underwater. Any characteristic that helps an animal survive in its environment is called an adaptation (a dap TAY shun).



Animals are adapted to their environment through their body structure. Some animals have wings to fly through the air. Others have claws to burrow into the ground. An animal's body must fit its environment if it is to live and survive. A good example is a camel's body, which stores water. This adaptation makes the camel well-suited to live in a desert, where water is scarce.

Think and Learn

1. Any characteristic that helps an animal survive in its environment is called an _____.
2. A fish's _____ are an adaptation that allow it to breathe underwater.
3. A bird's _____ are an adaptation for flying.



Animal Adaptations

Describe an adaptation of each animal that helps it live in its environment.



Clam _____



Polar Bear _____



Spider _____



Duck _____



Animal Defenses

Each of these animals has an adaptation that helps it defend itself from enemies. For each animal, describe its adaptation.



clam



skunk



honeybee



porcupine



walking stick



pigeon

hard shell
stinger
pointed quills

fast flyer
bad smell

blends in with
environment



Animal Locomotion

One important animal adaptation is the way in which an animal moves around in its environment. The way in which an animal moves is called locomotion.

Complete the table by writing a one-word description of each animal's main method of locomotion. Then, name the body part used to make this movement.

Animal	Method of Locomotion	Body Part Used for Movement
rabbit		
fish		
clam		
dragonfly		





Food Chains

Animals need energy to stay alive. They get this energy by eating food. Some animals eat plants. Some eat other animals. And some eat both plants and other animals. Think of all the living things that feed on one another in an environment. This is called a food chain. Each living thing in a food chain is a "link" in the "chain." The energy of food passes from one living thing to another through the food chain.



The food chain shown on this page begins with underwater plants in a pond. The plants make up the first link in the food chain. A fish eats the plants. The fish is the second link in the food chain. Finally, an eagle swoops down and catches the fish. The eagle becomes the last link in this food chain.

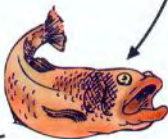
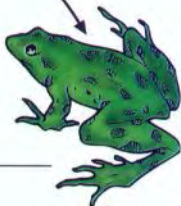
Think and Learn

1. What are all the living things that feed on one another in an environment called? _____
2. Each plant or animal in a food chain is one _____ in the chain.
3. What kind of living thing almost always begins a food chain? _____



Food Chains

The living things in one food chain are shown below. Write the name of each on the lines.



bear
fish

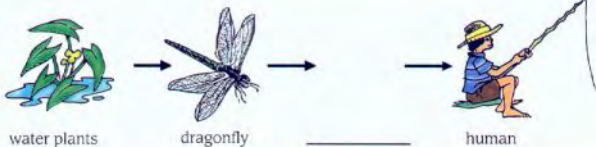
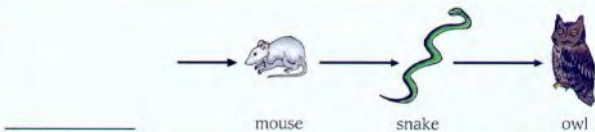
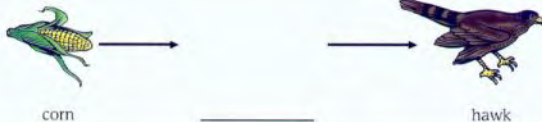
grass
frog

grasshopper



Find the Missing Link

Write the name of the missing link in each food chain. Then draw the missing link above the word.



mouse

plants

wolf

fish

ANIMAL FACTS and FUN



What's Its Name?
How Long Does It Live?
Animal Safari



What's Its Name?

What do you call a mother duck or a baby goat? This table gives you some answers to those and other questions about animal names.

Animal	Male	Female	Young
Bear	boar	sow	cub
Cat	tom	queen	kitten
Cattle	bull	cow	calf
Chicken	rooster	hen	chick
Deer	buck	doe	fawn
Duck	drake	duck	duckling
Elephant	bull	cow	calf
Fox	renard	vixen	kit
Goat	buck	doe	kid
Hog	boar	sow	piglet
Kangaroo	buck	doe	joey
Lion	lion	lioness	cub
Sheep	buck	ewe	lamb
Swan	cob	pen	cygnet
Tiger	tiger	tigress	cub
Turkey	tom	hen	poult
Whale	bull	cow	calf

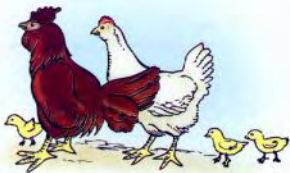
What's Its Name?

For each family group, label the members with the correct names.









How Long Does It Live?

Animal	Years of Life
Mammals	
Cat	14
Chimpanzee	30-40
Deer	20
Dog	12-20
Elephant	50-70
Grizzly bear	25
Hippopotamus	41
Horse	20-30
Lion	13
Mouse	1
Sheep	10-20
Tiger	20
Wolf	12-16
Amphibians	
Bullfrog	5
Salamander	20

Animal	Years of Life
Birds	
Blue jay	6-9
Cardinal	13
Ostrich	40
Pigeon	6
Robin	17
Snowy owl	10
Reptiles	
Crocodile	25-50
Garter snake	3-4
Rattlesnake	14-15
Box turtle	80
Fishes	
Goldfish	10
Salmon	4-5
Trout	11
Sturgeon	50

How Long Does It Live?

Write how long each of these animals lives.



trout _____



bullfrog _____



mouse _____



ostrich _____



horse _____



box turtle _____

Think and Learn

1. Which lives longer, a tiger or a crocodile? _____
2. Which lives longer, a mouse or a goldfish? _____
3. Suppose you had two pets, a dog and a box turtle. Which pet could have a longer life? _____

Write About It

Choose an interesting animal that you have read about. Draw a picture of the animal. Then, write a paragraph that tells some fascinating facts about the animal you chose.

Animal Safari

An Alphabet of Animals

Prepare

- Tear out the gameboard. Cut a piece of cardboard the same size. Glue the gameboard onto the cardboard.
- Cut out the cards below. Cut squares of construction paper the same size. Glue the cards onto the construction paper squares.
- Use your own small plastic animals as game pieces.

Rules

1. Give each player the same number of cards.
2. Have each player turn over the top card. Count the letters in the animal name.
3. The player who has the animal name that comes first in ABC order goes first. Move ahead the number of spaces that equals the number of letters in the word.
4. When you land on a space, follow any directions on that space.
5. Players take turns moving until someone reaches FINISH.

ape	bird	walrus	deer	elephant
frog	bear	cheetah	owl	octopus
goat	giraffe	monkey	snake	moose
zebra	lion	penguin	tiger	whale



Animal Safari



Heavy rain
Wait 1 turn.

Slipped on ice
Slide ahead 2 spaces.

START



Vines
Swing ahead 3 spaces.



FINISH



Boa
Go back 3 spaces.

Bear hug
Go back 1 space.

Overnight safari camp
Wait 1 turn.



Beaver dam
Wait 1 turn.

Kangaroo crossing
Hop ahead 1 space.

Rhino stampede
Go back 2 spaces.



Dolphin ride
Go back 3 spaces.

Jellyfish sting
Go back 1.

Shark attack
Go back 5 spaces.





Answer Key

Caribou

Caribou (C.A.R.) is the American name and reindeer is the European name. Both have antlers. Caribou have very large antlers. In fact, the female caribou is the only female member of the deer family who grows antlers. Caribou have long hair and woolly fur. They are great long-distance runners and can easily cross a pack of wolves. They will however help them walk easily through snow. Caribou can also swim.



In summer, caribou feed on grass, leaves and other low-growing plants of the tundra. In the winter, they eat the spruce. In winter, caribou migrate to wooded areas and feed on small, dry leaves that grow on rocks and rocks called lichens (L.I.C.H.E.N.).

Think and Learn

- How much do caribou weigh? 300-600 pounds
- Caribou are members of the deer family.
- Where do caribou migrate in winter? wooded areas
- What do caribou eat during summer? grass, leaves and low-growing plants of the tundra

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Ermine

Ermine (E.R.M.I.N.) are members of the weasel family. They are very small, weighing less than a pound. Ermine have huge dark eyes and long whiskers. They have smooth, silky fur. During the spring and summer, their fur is brown, which makes it difficult to see when they are out of their holes. In winter, their fur is white, which helps them blend in with their snowy environment.



Ermine live in northern regions of North America along mountains and at the edges of forests. They are good burrowers and feed on small animals, such as rabbits and mice. In April, ermine have litters of 2 to 13 fuzzy white babies. By late summer, these babies are fully grown.

Think and Learn

- During spring, ermine have brown fur.
- What color fur do ermine have in winter? white
- Where do ermine live? along mountains and at the edges of forests in northern regions of N. America
- What do ermine eat? small animals like rabbits and mice

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Lemming

Lemmings are chubby little animals belonging to the mouse family. They look very much like hamsters and gnaw on things. Lemmings dig in the soil to build their nests, which they live with their pups. They burrow and live in areas where there is little snow.



An old legend about lemmings says that every few years lemmings march to the sea, jump and drown. Scientists have learned that lemmings will march to the sea when the number of lemmings in an area is too high. Lemmings always migrate in a straight line, creating anything in their path. If they come to a stream, they jump in and swim across it. When they come to the ocean and jump in, they cannot swim across it, so they drown.

Think and Learn

- What other animals do lemmings look like? hamsters and gnawing mice
- Where do lemmings build their nests? in the soil
- What do lemmings eat? plants
- When do lemmings migrate? when the number of lemmings in an area is too high

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Musk Ox

Musk oxen are huge animals with large heads and short legs. They grow to 3 feet tall at the shoulders and weigh up to 100 pounds. Musk oxen have long, dark brown hair that covers their entire body. They use their horns to scratch through the snow to find grass, which they eat.



Musk oxen live together in groups of 20 to 150. When danger is near, the adult musk oxen gather in a circle, being a circle. The calves stay in the center of the circle for protection. When the adult oxen lower their heads, showing their enormous horns, even a pack of wolves will not attack them.

Think and Learn

- Musk oxen have short legs.
- Musk oxen are about the size of the ground.
- How do musk oxen find food? by scratching through the snow with their horns
- How big are horns of musk oxen? 20-100

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Orca (killer whale)

The black and white orca (O.R.C.A.) is a large cetacean that is often called a "killer whale." It grows up to 30 feet long and weighs 7 to 11 tons. The orca has 40 to 48 large pointed teeth that it uses to catch and hold its prey. It eats over 100 pounds of food every day.



Orca live and feed in family groups called pods. They are often seen in groups and are often seen hunting each other. Female orcas give birth to one baby every 2 to 18 years. The baby will stay with its mother for 16 years. Orcas are very smart animals. They communicate with each other by making sounds.

Think and Learn

- Is an orca a dolphin or a whale? a dolphin
- What color is an orca? black and white
- How much food does an orca eat each day? over 100 lbs
- Orcas live in family groups called pods.
- Orcas communicate by making sounds.

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Polar Bear

Polar bears are the world's largest land-eating mammals, weighing 400 to 1,000 pounds. They have special adaptations to help them live in the Arctic. Their thick fur and a layer of fat keep them warm. Their small ears and tiny body heat help them stay warm. They keep their feet dry by using ice. Polar bears are smart and curious animals.



Female polar bears usually take care of their cubs in secret. They give birth to one or two cubs, weighing 1 pound. The cubs stay with their mother for 2 years.

Think and Learn

- What features help polar bears warm? thick fur, a layer of fat, small ears
- Polar bears have webbed feet to help them swim.
- What do they eat in the summer? berries and plants
- How long do polar bear cubs stay with their mother? two years

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Answer Key

Seal

Seals are animals with special features to live in water. Their bodies move them quickly and smoothly through water. Their bodies are covered with oily fur and a layer of blubber, or fat, to keep them warm. There are two kinds of seals—the fur seal and the sea lion. Sea lions have ears outside their heads, but true seals have no outer ears. While sea lions can move easily on land, true seals must use their flippers to move on land. True seals never have to leave the water.



The seals hunt underwater for their food. They eat shrimp, crabs, fish and seaweed. Seals give birth to white baby seals, called pups. Their coloring helps hide their dark bodies from the top ground, while for white pups dark brown like the parents for

Think and Learn

1. Seals are adapted to live in water.
2. Flippers move seals quickly through water.
3. What keeps seals warm? oil fur and a layer of blubber
4. Which kind of seal moves easily on land? sea lion
5. What color are seal pups? white

Arctic Region and Antarctica 22

22

Predator and Prey

Polar bears live along frozen shores and on ice floating in Arctic waters. The polar bear is a predator and is helped because it hunts other animals for food. The animals hunted by predators are called prey. When hunting for seals, polar bears like to wait by a seal's breathing hole in the ice. The seal may not see the polar bear waiting by the breathing hole. The polar bear waits for a hole to lead in with its snowy environment. When the seal comes up to breathe, the polar bear catches it. Seals are dark brown to help them blend in with their environment. When a polar bear looks down into the water, the water reflects the color of the ocean below, which is dark brown or black. Sometimes the polar bear does not see the seal.



1. Color the picture to show how the animals blend into the environment.
2. Label the predator and the prey in the picture.

Arctic Region and Antarctica 23

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Snowy Owl

The snowy owl gets its name from the snow-white feathers covering its body. It has thick feathers covering its feet and legs for warmth. Like most owls, snowy owls hunt at night. But their heads could turn because their eyes can move. Their eyes are big and see in the dark. Owls use their face feathers when they are hunting.



Snowy owls hunt for rats and small hares, but sometimes eat their main food source, if it is missing are ptarmigan. Snowy owls will lay more eggs when coverages are scarce. Snowy owls may not lay any eggs. Snowy owls live on the tundra lands, so they build their nests on the ground in places where they can watch for predators.

Think and Learn

1. Snowy owls have feathers, covering their feet and legs.
2. Why most owls turn their heads to look around? Their eyes cannot move.
3. What is the main food source for snowy owls? lemmings.
4. Snowy owls build nests on the ground.

Arctic Region and Antarctica 24

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Walrus

The walrus is a huge animal, weighing between 2 and 3 tons. It has thick skin and a layer of blubber protect it from the cold. Both male and female walrus have ivory tusks. They use their tusks to pull themselves across ice and for protection against polar bears.



Walrus are excellent swimmers. They can stay out in sea for days. They feed on the ocean floor by using their "moustache" bristles to feel for items. Then, they use their heads to dig the items out. Walrus live together in herds consisting thousands of walrus. One of their favorite things to do is sleep. When one walrus is awake, it tags another walrus. This goes on until the whole herd is awake. In time, they will fall back to sleep.

Think and Learn

1. How much does a walrus weigh? between 2 and 3 tons
2. Why are the tusks of a walrus important? They help the walrus to move on ice and are used for protection.
3. What do walrus eat? clams
4. Walrus live together in herds.

Arctic Region and Antarctica 25

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Wolverine

The wolverine is the largest member of the weasel family. It reaches a height of 4 feet at the shoulder and weighs 30 to 50 pounds. Wolverines are covered with long, shaggy dark brown hair. What does not have to their fur.



For their size, wolverines are probably the strongest and fiercest animals of the North. Often, wolverines chase away a bear or a moose-like bear that is food as they can eat the bear. After a wolverine eats a large meal, it will not eat again for a few days. Female wolverines give birth to cubs or three cubs in a litter. They are born in early summer already covered in woolly fur coats. By winter, the cubs can live on their own.

Think and Learn

1. The wolverine is the largest member of the weasel, family.
2. What is special about wolverine fur? It never freezes.
3. Why are wolverines thought of as fierce animals? They will chase away a bear or moose-like bear from the food.
4. When are wolverines called born? In early summer.

Arctic Region and Antarctica 26

26

Bald Eagle

The bald eagle is a top of prey or a bird that catches and eats other animals. It is a large bird with a wingspan reaching 6 feet. The bald eagle is well known for its silver head and neck. Most bald eagles live near water because they love to eat fish. They hooked fish and long, curved bills help them to catch fish.



Of all the eagles, bald eagles hold the biggest nests. Nests have been mentioned at a feet across! Eagles lay two to four white eggs. The eagles are born downy. They do not look like adults until they are three years old. The bald eagle has been the national bird of the United States since 1782. It is a symbol of freedom and courage.

Think and Learn

1. The bald eagle has a wingspan of 6 feet.
2. What color are the bald eagle's head? white
3. What helps bald eagles catch their? their hooked bills and long, curved claws
4. The bald eagle is the national bird of the United States.

Arctic Region and Antarctica 28

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Answer Key

Beaver

The beaver is a member of the rodent family. It grows to a length of 1 foot and usually weighs 30 to 40 pounds. The beaver has dark brown fur that keeps the inside of water and dry. Its strong lower front teeth, called incisors, The incisors keep growing all through a beaver's life so that these teeth are never worn down. Beavers use their incisors to cut down trees. Beavers eat twigs and bark from trees that grow near water.



Beavers are graceful swimmers. They move easily through the water with their webbed feet. Their tail helps steer them. Beavers make for life and live in colonies. All the beavers in a colony work together to build lodges as their homes.

Think and Learn

1. What are the beaver's cutting teeth called? incisors
2. What do beavers eat? twigs and bark from trees
3. How does a beaver use its tail? for steering in water
4. What is a beaver home called? a lodge

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North America

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Beaver Lodges

Beavers in a colony work together to build their lodges. Lodges are made of tree branches and grass. Beavers use mud to keep the branches in place. A lodge can be 3 to 6 feet high and 7 feet across. It has two rooms. The living room is above the water. It is where the beavers sleep and keep warm. The underwater storage room is where they keep their food. If the water level drops, beavers build dams. Dams raise the water level around the lodge so the storage room stays under water.



Storage room

Living room

1. In the beaver lodge above, label the entrance, the living room and the storage room.

2. In the entrance above water or below water? below water

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North America

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Gray Wolf

The gray wolf is the largest member of the wild dog family. This animal can reach a length of 4 feet and can weigh 100 pounds. Gray wolves live in northern Canada. They hunt for deer, elk and moose in packs of 3 to 20 wolves. No other members of the dog family can go for several days without food.



The leader of the wolf pack is the alpha male. Other wolves show respect by lowering their ears and putting their tails between their legs. Wolves make for life. A female gives birth to a litter of 3 to 12 young, called pups. The pups are helpless at first. Other members of the pack help the parents care for the pups.

Think and Learn

1. The gray wolf is a member of the wild dog family.
2. Where do gray wolves live? in northern forests
3. Gray wolves hunt in packs.
4. How do wolves show respect to the leader? by lowering their ears and putting their tails between their legs.

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North America

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Word Search

Find the names of North American animals in the puzzle. They are written across and down.



caribou beaver eagle armadillo
fox skunk bear rabbit porcupine
wolf deer rabbit porcupine
bat weasel antelope

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North America

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Grizzly Bear

Grizzly bears once lived in large numbers from Canada to Mexico. Now, most grizzly bears live in national parks. Male grizzly bears stand 8 feet tall and weigh 600 to 1000 pounds. Grizzly bears have very good senses of smell and hearing. These senses make up for their poor eyesight.



Grizzly bears are omnivores—they eat both plants and animals. Their favorite foods are berries, leaves, fish and small animals. In winter, grizzly bears spend a lot of time eating. They are listening up to get ready for their winter sleep. In Minnesota, grizzly bears hibernate differently from other animals. This body functions are slow down, and they are easily awakened.

Think and Learn

1. Where do most grizzly bears live today? in national parks
2. Which senses make up for the grizzly bear's poor eyesight? their good senses of smell and hearing
3. What do omnivores eat? plants and animals
4. How do grizzly bears get ready for hibernation? eat a lot of food to fatten up

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North America

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Dot-to-Dot

Connect the dots. Color the picture.



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North America

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Answer Key

Moose

The largest member of the deer family is the moose. These huge animals are 10 feet long and weigh about 1,600 pounds. Male moose have very large, velvet antlers. Every year they shed their antlers and grow a new pair in spring. Moose drink water and are excellent swimmers. They usually live near rivers, lakes or in forest streams.



During the summer months, moose eat water plants, ferns, leaves and grass. In winter, moose walk easily through the deep snow. They find tree stumps and logs to use. Moose live alone in the woods, when stress allows, a bull can mate for small herds of cows to stay together in the woods for warmth and protection.

Think and Learn

1. The moose is a member of the deer family.
2. Each year moose shed their antlers. They grow a new pair.
3. Where do moose usually live? near mountains, lakes, or in moist forests.
4. Why do moose stay together in small herds in winter? for warmth and protection.

55

Otter

Otters are members of the weasel family. They are long bodies have special flippers, or adaptations, that allow them to live most of the year in water. Otters have flat tails and webbed feet that help them swim. Their coarse, water-repellent fur is waterproof. They can close their nostrils and ears when underwater.



Otters make their homes by digging burrows or building dams out of weeds. They mainly eat fish but also they catch and eat snails. Otters are fun to watch because they are so playful. They are so cute on their bellies (over heads of head or nose) and splash in the water. They communicate with each other by barking, chirping and growling.

Think and Learn

1. Where do otters spend most of their time? in water.
2. Otters have webbed feet.
3. What do otters eat? fish, insects, frogs, snails and insects.
4. How do otters communicate with each other? by barking, chirping and growling.

56

Wild Turkey

Wild turkeys are large birds that live mostly on the ground. Males, or toms, may weigh as much as 24 pounds. Females, or hens, weigh only 12 pounds. Both toms and hens have long, pointed tails called a tail, and they have a fan of feathers called a tail. They also have a wattle, a flap of skin that grows from the throat. Both toms and hens have short, feathered wings and heavy bodies.



Wild turkeys live in wooded areas. They are excellent swimmers and can fly for short distances. They can have strong feet with five toes. This makes them very fast runners.

Wild turkeys live in wooded areas. They are excellent swimmers and can fly for short distances. They can have strong feet with five toes. This makes them very fast runners.

Think and Learn

1. Where do wild turkeys live? in woods near water.
2. What features do toms have that hens do not? tails and wattles.
3. What makes toms fast runners? strong feet with five toes.
4. Where do wild turkeys sleep? in tree branches.

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Porcupine

The porcupine (pronounced por-kyoo-pine) is a grazing animal that is best known for its long, sharp quills. Quills are structures of hair that have grown together. The quills are white with black tips. They make a porcupine feel safe and secure. Porcupines are better swimmers than most mammals. They are also good climbers and are very good at digging.



Porcupines are nocturnal. This means they sleep during the day and are active at night. They spend most of the night in trees looking for food. They might climb 60 to 100 feet to eat young cones. In winter, they eat twigs, bark and leaves. They can dig, climb, bark and give noises.

Think and Learn

1. What are quills? batches of hair that have grown together.
2. Why don't porcupines attack other animals? because they are peaceful.
3. Porcupines are nocturnal. They sleep during the day.
4. What do porcupines eat during the summer? twigs, bark, and leaves.

58

Color Me



I am a porcupine.

59

Striped Skunk

The skunk is known for its black and white fur and its horrible odor. The striped skunk is the most common kind of skunk. It gets its name from the white stripes running down its back. Skunks are known for the use of a small oil, musk, in their urine. They weigh 5 to 10 pounds. Skunks have short legs and small ears, a long body and a bushy tail that is used for balance.



Skunks make their dens in burrows, hollow trees and under buildings. They are found in forests, grasslands and in cities. Even though skunks annoy people with their odor, skunks are very helpful animals. Skunks eat harmful insects, rats, mice and other small animals that damage crops and fields.

Think and Learn

1. What two things are skunks known for? their black and white fur and horrible odor.
2. A skunk is about the same size as a small cat.
3. Where are skunks found? in forests, grasslands and homes.
4. How are skunks helpful to people? They eat harmful insects, rats and mice.

60

Answer Key

Animal Defenses

Skunks and porcupines have adaptations that help them defend themselves. Because of their coloring, skunks do not blend in with their environments. If an animal decides to attack, the skunk warns the animal by spraying its oil. If the animal does not leave, the skunk sprays the animal with a foul-smelling liquid.

Porcupines spend most of their lives in a protective thorn enclosure. It raises the quills on its sides and back. Then, it swings its quill-covered tail at the animal. The quills are barbed. They get stuck in the skin of the animal and are very painful.



Think and Learn

- How does a skunk warn an animal to go away?
by spraying its feces
- What does a porcupine do when it feels threatened?
It raises the quills on its sides and back.
Then, it swings its quill-covered tail at the animal.

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White-Tailed Deer

The white-tailed deer is easy to recognize by its more-white tail. White-tailed deer are found throughout North America, but they are most common in eastern Canada and northern United States. Only the males, called bucks, grow antlers. Their antlers are shed each winter. White-tailed deer eat nuts and berries, as well as the buds and twigs from trees.



White-tailed deer are fast runners and great jumpers. Bucks become light during mating season. They use their antlers and hooves as weapons. Female deer, called does, give birth to one to three fawns in the spring. The fawns are covered with white spots that disappear in six months.

Think and Learn

- What are white-tailed deer recognized by?
antlers with tail
- Only males grow what?
antlers
- What do males eat?
nuts, berries, tree buds and twigs
- How is a fawn's coloring different from an adult deer?
Fawns are covered with white spots.

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Pronghorn

The pronghorn is North America's fastest animal. It can run about 40 miles per hour and jump very high. The pronghorn is mostly covered with reddish-brown fur and has white fur on the lower parts of its body, including the tail. The pronghorn likes to graze up to 200 miles a day. It has a thick coat of fur to help it survive in hot weather. Its coat sheds its body fur for fur again. The pronghorn has long horns that it uses to fight.



Pronghorn live in the grasslands of western United States and Canada. They eat shrubs, sagebrush, grass and twigs. In summer, they live in small groups. In winter, they live in large groups of 50 or more.

Think and Learn

- The pronghorn is North America's fastest animal.
- How does a pronghorn keep cool in hot weather?
It sheds its fur throughout year.
- Where do pronghorns live?
in grasslands of western U.S. and Canada
- What do pronghorns eat?
shrubs, sagebrush, grass and twigs

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Compare and Contrast

Read about the white-tailed deer and the pronghorn. Then, use the Venn diagram and the facts you have learned to compare and contrast these two animals. Write in or draw pictures about the white-tailed deer on the left. Write in or draw pictures about the pronghorn on the right and facts that are shared between the animals.



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Chevrotain

Chevrotains were first spotted in 1875 in a very small area with palm trees. They are sometimes called musk deer because they look like they have chevrons in their long, hair-like horns and on their upper body. They use their long upper limbs to defend themselves from other animals.



Chevrotains live in the tropical forests of India and Southeast Asia. They eat at night, feeding hidden in the undergrowth. They feed on fruit, leaves, twigs and grass. During the day, chevrotains keep behind rocks or in the bushes. They are good, fast animals. Chevrotains like to escape during the mating season. A female chevrotain usually gives birth to two babies, called fawns.

Think and Learn

- Chevrotains are also called musk deer.
- What do chevrotains use to defend themselves?
long, hair-like teeth
- Where do chevrotains live?
in the tropical forests of India and Southeast Asia
- When do chevrotains eat?
at night

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Giant Panda

The giant panda is a very large black and white bear animal. Scientists used to classify pandas as part of the raccoon family. Now, they classify pandas as bears. The giant panda is found in bamboo forests in the mountains of west central China.



Pandas reach a height of 6 feet and weigh about 250 pounds. They only eat bamboo leaves and special kind of their own living bamboo plants. They eat every part of the plant. Pandas have a special thumb that on their front feet used for holding bamboo stems. Their teeth are large and wide to help them grind up the bamboo.

Think and Learn

- Scientists now classify the giant panda as a bear.
- Where do giant pandas live?
in bamboo forests in China
- Pandas eat all parts of the bamboo plant.
- How do pandas use the thumblike toe on their front feet?
for holding bamboo

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Answer Key

A Vanishing Act

The people of Asia find many endangered animals. One animal at a time may soon disappear from Earth. That's what happened to the brown bear, blue whale and passenger pigeon. They disappeared or became extinct.

Write the letter that comes before each letter in the alphabet to discover the names of some endangered animals.

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

MOUNTAIN	SORICULA
SPYDROID	OPSPINER
AFRICAN	ELEPHANT
SQUIDRO	IMPQUBOD
WHOOPIE	CRANE
KITTY	IGOR
SLACK	RHINO
COMIDL	QUIGP
GAMBL	PANDA
ISOM	GOOSE
SEA	LEON
TYR	MIPPO
GRAY	WOLF
H	SEAF
CHEETAH	
IT	IB



68

Gibbon

Gibbons (CER) about are the smallest members of the great apes. Gibbons are built for swinging through the trees. In fact, it is believed that there is such an air of grace. Think long with smile (CER) in "Y" like (CER) to (CER) with wings over 30 feet.

Gibbons are found in the mountains of Southeast Asia. They live in the trees, where they get most of their food. They eat fruits, leaves, fungi, young birds and insects. Gibbons live in family groups made up of a male, a female and their young. Gibbons work for 16 hours a day, the gibbons sleep together for safety.



Think and Learn

- Gibbons are the smallest member of the _____ family.
- How are gibbons built for swinging through trees? They have long arms.
- Where are gibbons found? rainforests of Southeast Asia
- Gibbons live in _____ family _____ groups.

79

Rainforest Maze

Help the gibbon swing through the maze.



80

Malayan Tapir

The Malayan tapir (TAP) is a small bear. It is found in the mountains, hills, valleys and gorges like a bear. It is about 1.5 m tall. It has a pig-shaped body and weighs about 100 pounds. It lives in forests, fields and open fields.

Malayan tapirs are found in Borneo and Malaya in tropical rainforests and near rivers. At night, they look for insects, grass and other plants to eat. Malayan tapirs live in dens and nests in the trees. They live in the hills where they get most of their food and insects.



Think and Learn

- What animals are the Malayan tapirs related to? horses and rhinos
- Describe the tapirs' body. It is pig-like with short, wavy hair like an expert's trunk.
- When do Malayan tapirs feed? at night
- What do tapirs live in? dens and nests

81

Orangutan

Orangutans (OR) live in a hot, wet forest. They are found in Borneo and Sumatra. They eat fruits, roots, seeds and leaves, as well as insects, tree frogs, young birds and insects. Orangutans build sleeping platforms in the trees. They sometimes use large leaves as blankets when it rains. Orangutans do not live in family groups but alone.



Think and Learn

- What does the word "orangutan" mean? forest man
- Where do orangutans live? in trees in Borneo and Sumatra
- What color is orangutan hair? reddish-brown
- How do orangutans build for sleeping? platforms in trees
- How do orangutans sometimes use leaves? as blankets

82

Sloth Bear

The sloth bear is a large, shaggy bear. It has a mane of long, coarse hair. Sloth bears have very long claws. They live in the rocky canyons and hills of India and Sri Lanka. They hunt for termites and bees at night. A sloth bear can climb very well to find food. It uses its long claws to dig up a termite or bee nest. The sloth bear is so slow when it eats that people can feed it food by hand.



Think and Learn

- Sloth bears have very long _____ claws
- Where do sloth bears live? in rocky canyons and hills of India and Sri Lanka
- What do sloth bears eat? termites and bees
- When do sloth bears dig during the day? at night

83

Answer Key

Snow Leopard

The snow leopard (also called the Amur leopard) is a large cat that lives in the mountains of central Asia. It is a fast runner and weighs about 100 pounds. The snow leopard's fur is so beautiful, it is sometimes used to make coats. Its fur is covered with ring-shaped spots and is covered with long grey and cream-colored hair and streaked with black spots. The snow leopard's legs paws are padded for walking.



The snow leopard does not look like a lion but purrs like a cat. Like most cats, snow leopards hunt animals for food. The snow leopard is endangered. It has been endangered for so long, it has almost no natural prey due to the closing of land for hunting.

Think and Learn

- Where do snow leopards live? mountains of central Asia
- The snow leopard's paws are padded for walking.
- What sound do snow leopards make? They purr.
- Why are snow leopards endangered? overhunting and loss of prey

84

Tiger

The tiger is the largest member of the cat family. It is known by its stripes and black stripes. Tigers are found only in Asia. They live in different environments—some only in jungles and some in grasslands. Tigers are alone. Every tiger claims its own territory. Tigers like to climb, walk, then pounce and pounce again. Tigers hunt at night. They hunt deer, antelope and wild pig.



Female tigers, called tigresses, give birth every 2 years to a litter of three or four cubs. The tigers in a family are a loving mother. She teaches her young how to hunt and care for themselves. The cubs stay with their mother for 2 years.

Think and Learn

- The tiger is the largest member of the cat family.
- Tigers are found only in Asia.
- What animals do tigers hunt? deer, antelope and wild pig
- What do tigers teach their cubs? how to hunt and care for themselves

85

Hidden Pictures

The tiger's stripes help keep it well hidden in the jungle. Find the tiger hidden in the picture. Circle the picture.



86

Water Buffalo

The water buffalo is a gigantic animal that is 10 feet long and 4 feet tall. It has thick, grayish-black skin. Water buffaloes have large horns. The horns grow out of each side of its head and curve outward. Water buffaloes love water. They are often found wading in water up to their knees. Water buffaloes also like to feed with their heads under water. They help protect them from insects.



Water buffaloes are wild cattle. Some have been tamed and help with rice farming. Rice is grown in flooded fields. Water buffaloes can easily pull a plow through water. That is how they work. Although they look like gentle animals, water buffaloes also like to feed with their heads under water. They help protect them from insects.

Think and Learn

- Large horns grow out of a water buffalo's head.
- What do water buffaloes like to rest in? water
- Why do water buffaloes wade in water? to help protect themselves from insects
- How do water buffaloes help with rice farming? They pull a plow through water.

87

Wild Boar

The wild boar is a wild hog found in forests throughout Asia. It can reach a length of 10 feet and weigh an average of 300 pounds. Its long piglike snout is used for digging, pushing, and digging. The wild boar has long legs that grow out of its lower jaw. These legs are called hind legs. Wild boars use their tusks to protect themselves.



Wild boars like to eat almost anything. They use their snout to search for leaves, bark, roots, worms and insects. Wild boars can swim and hunt well. However, they rely mainly on their sense of smell. Some wild boars travel in separate herds. The female boars raise their young alone.

Think and Learn

- Where are wild boars found? in forests throughout Asia
- How do wild boars use their snout? for lifting, pushing and digging
- Wild boars use their tusks for protection.
- What sense do wild boars rely on most? smell

88

Chinchilla

Chinchillas (often CHIN), who look like large mice, but they are actually related to squirrels. They have thick, soft fur. Their long gray color is beautiful. In the 1800s, Spanish explorers brought chinchillas back to Europe. The demand for chinchilla fur quickly caused the animal to be killed off. Today, a small chinchilla population lives in the Andes Mountains.



Chinchillas eat roots and grass. Their long, narrow legs in the front. However, chinchillas get enough water from the plants they eat. Chinchillas are nocturnal, or active at night. They sleep during the day. At night, they begin making a nest.

Think and Learn

- Chinchillas are related to squirrels.
- Describe chinchilla fur. It's soft, beautiful blue-gray color.
- Where do chinchillas live? in the Andes Mountains
- How do chinchillas get water? from the plants they eat.

89

Answer Key

Giant Anteater

The giant anteater is an animal that eats ants and termites. Giant anteaters have three large claws on each paw. They use their claws to rip open ant nests. Giant anteaters have a sticky tongue that is 60 cm long. They push their tongue into the ant nest to get the ants. Giant anteaters cannot see well. Instead, they feel ants with their sticky tongue and smell.



Giant anteaters can locate ants in a forest that is 100 meters away. They need to dig tunnels or make burrows. Instead, they wander along looking for food and they eat. Thus, they do not live in a hidden place. Giant anteaters have their long, sticky tongue and feel ants.

Think and Learn

1. What do giant anteaters eat? ants and termites
2. How do giant anteaters use their claws? To rip open ant nests.
3. Giant anteaters have sticky tongues.
4. Where do giant anteaters sleep? In a hidden place with their heads covered by their hair.

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Giant Armadillo

The giant armadillo can dig with 30 cm claws in the length of all armadillos. It can reach a length of 1.8 m and weigh as much as 100 pounds. Giant armadillos are found only near rivers in the eastern part of South America. Early Spanish explorers named the armadillo. The name means "like armored cow". Armadillos are covered with hard bony plates called scutes.



Giant armadillos use their long curved claws for digging burrows and for finding food. They eat crickets, worms, snakes and insects. Armadillos are called animals that prefer to live alone. When threatened, they either run deep to reach the hole that was just dug or they attack.

Think and Learn

1. Where are giant armadillos found? Near rivers in eastern South America.
2. What does the word "armadillo" mean? Like armored cow.
3. What are scutes? Hard body plates.
4. What do armadillos use their claws for? Digging burrows and finding food.

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Jaguar

The jaguar (panther) is a member of the cat family. It is a fast long and weighty animal. Jaguar means "The beautiful animal has no predators for with thick skin protected by thick fur. Some jaguars are almost entirely black. The jaguar is found throughout Central and South America in many different habitats. It can live in both country, mountains, meadows and woods.



Jaguars like to hunt alone. They use a lot of animals including fish, turtles, deer and wild pigs. They often lie on tree trunks and wait until they can pounce down on their prey. But only one jaguar often lives in a territory. They are also great swimmers. They will often hunt in the water, especially when the river has flooded.

Think and Learn

1. The jaguar is a member of the cat family.
2. In what habitats do jaguars live? thick country, mountains, meadows and woods.
3. Where do jaguars often wait for prey? In tree branches.
4. Jaguars are called solitary and great swimmers.

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Llama

Llamas (and their sibling the guanaco) are in the camel family. They are 1.8 m tall and weigh over 300 pounds. Llamas come in many colors: white, tan, brown and black. Llamas live in the grassy desert region near the Andes Mountains. They eat shrubs and other plants. Like the camel, a llama can live for weeks without water. The llama gets the water it needs from the plants it eats.



Llamas have been bred for centuries. They used to need to be milked. Llamas, cows and chickens are called pack animals. They carry loads through mountains carrying heavy loads. However, if a llama thinks it has water long enough to see dry, it also drinks and eats its food.

Think and Learn

1. Llamas belong to the camel family.
2. What do llamas eat? shrubs and other plants.
3. Llamas can live for weeks without water.
4. Why are llamas called pack animals? They travel easily through mountains carrying heavy loads.

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Macaw

Macaws are the largest members of the parrot family. They come in many bright colors. All macaws have powerful hooked bills. They use their bills to help them climb and to break open nuts and seeds. Macaws have four toes on each foot. Their feet are used for perching, climbing and holding objects. Macaws are only found in rainforests. They live in trees that they make in one minute.



Macaws get in danger of extinction, or dying out. They are losing their homes as the rainforest is destroyed. Llamas protect these colorful parrots by capturing them to sell as pets. Macaws are not good pets because they like to scream and bite.

Think and Learn

1. Macaws are members of the parrot family.
2. All macaws have powerful, hooked bills.
3. What do macaws use their feet for? perching, climbing and holding objects.
4. Why are macaws in danger of extinction? They are losing their homes and are captured to sell as pets.

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Spider Monkey

Spider monkeys are small monkeys that called as living in trees in Latin America. They need to climb to get to the ground. These monkeys move quickly through trees by swinging and jumping from branch to branch. Spider monkeys have tails that are longer than their bodies. These tails can easily grab and pick up things.



Spider monkeys are found in rainforests from western Mexico to the northern part of South America. They eat nuts and fruit and sometimes eggs. Spider monkeys live in groups, or bands, of 10 to 20 monkeys. Every band of monkeys lives in its own area, or territory. One band of monkeys will not go into the territory of another band.

Think and Learn

1. How do spider monkeys move quickly through trees? By swinging and jumping from branch to branch.
2. What do spider monkeys eat? Nuts, fruit and eggs.
3. What do spider monkeys call? Yips, fruit and eggs.
4. Spider monkeys live in groups called bands.

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Answer Key



Dot-to-Dot

Spidey monkey is in silhouette. They usually run away and hide if another animal scares them. Can you do this to find the hidden monkey? Then, color the picture.



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Toucan

Toucans (TROO-kahn) are birds with large colorful bills. Although a toucan bill looks heavy it is really very light. The bill is hollow. It is made from a keratin material. Toucans live in the rainforests of Central and South America. Toucans eat fruit, large insects, lizards and young birds. A toucan sits on a branch and reaches the fruit with its long bill. The curved end of the bill keeps the toucan job the fruit and hold on to it.



Toucans make their nests in the holes of trees. Both the male and female take turns sitting on the eggs. Newly hatched toucans are blind and have no feathers. After 3 to 7 weeks, the young toucans are ready to live on their own.

Think and Learn

1. Toucans have large colorful _____ bills.
2. Where do toucans live? _____ rainforests of Central and South America.
3. What do they eat? _____ Fruit, large insects, lizards, young birds.
4. Where do toucans make nests? _____ in the holes of trees.

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Two-Toed Sloth

A sloth (SLOTH) is an animal that lives in trees. Sloths rarely go down to the ground. In fact, they cannot walk at all. The two-toed sloth has two long, curved claws on its front legs. Sloths use their claws to hold onto tree trunks and branches. They often hang upside down. Sloths move very slowly using one branch, paw over paw, while hanging upside down.



Two-toed sloths are found from the southern part of Central America to central Brazil and Peru. They eat leaves, buds and twigs. Sloths are nocturnal, or active at night. It is hard to see sloths sleeping in the trees during the day. Green algae on its grow on the sloth's fur, so the sloth blends in with the leaves.

Think and Learn

1. Sloths cannot _____ walk at all.
2. What do sloths use to hold onto branches? _____ their claws.
3. When are sloths active? _____ at night.
4. How do sloths blend in with tree leaves? _____ They have green algae growing on their fur.

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Woolly Monkey

Woolly monkeys are so named for their beautiful dark, woolly coats. They are found in forests along the Amazon River in Colombia, Ecuador, Peru and Brazil. They eat fruit, flowers and leaves. Unlike other howling monkeys, woolly monkeys are often found on the ground. They stand straight up using their tails for support.



Woolly monkeys live in groups of 10 to 20 monkeys. They communicate slowly but often frequently. When frightened, they howl through the branches and hills. Woolly monkeys are friendly. They are often seen in the company of other kinds of monkeys.

Think and Learn

1. Woolly monkeys are named for their _____ their woolly coats.
2. How do woolly monkeys stand while on the ground? _____ straight up, using their tails for support.
3. Woolly monkeys live in groups called _____ bands.
4. Woolly monkeys move slowly, _____ slowly, than other monkeys.

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Dingo

The dingo (DINGO) gets its name from the word "ding" which is the only word in the dingo family based in Australia. Dingoes are about the size of an medium-sized dog. Their coats range up and they have bushy tails. Dingoes cannot bark but can yelp and howl. Dingoes are excellent hunters. They hunt alone or in family groups for small animals to eat. Sometimes dingo droppings, called mounds, are brought dingoes to, usually, thousands of years old.



Dingoes give birth only once a year to three to six puppies. Both parents care for the puppies and keep them hidden. The Aboriginals search for the puppies to raise them for hunting. Adult dingoes cannot be tamed.

Think and Learn

1. The dingo is a member of the _____ dog _____ family.
2. Dingoes cannot _____ bark _____ but they can yelp and howl.
3. What do dingoes hunt for? _____ small animals.
4. Why do Aboriginals look for dingo puppies? _____ to train them for hunting.

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Dugong

The dugong (DUGONG) group is related to the manatee. Dugongs are manatees, or animals that feed only young with their mothers' milk. Even though dugongs live in the sea, they spend their entire life on land. They surface only to breathe about every 10 to 15 minutes. They have an unusual shape. It is rounded, with a large white patch on top. Only male dugongs grow tails.



Dugongs are found in the Indian Ocean, the Red Sea and off the western coast of Australia. Dugongs do not lay eggs. They are often called sea cows because they graze on sea grass just as cows graze on field grass.

Think and Learn

1. What are dugongs related to? _____ manatees.
2. Only male dugongs grow _____ tails.
3. Where are dugongs found? _____ in the Indian Ocean, the Red Sea and off the western coast of Australia.
4. Dugongs are often called _____ sea cows.

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Answer Key

Echidna

The echidna or **hedge** has a sometimes called a **spiny anteater** as it is found throughout Australia in open fields. The echidna's body is covered with coarse hair and pointed spines. Echidnas sleep in hollow logs during the day. At night, they use their sharp claws to scratch up insects. They eat the insects by licking them up with their long sticky tongue. For about 40 years ago, echidnas were made as their eggs. Mothers do an embryo whose yolk is on the mother's milk. Female echidnas lay one egg each year. The mother keeps the egg in her pouch, where it hatches. The baby stays in the pouch for several weeks, drinking the mother's milk and growing.



Think and Learn

1. What is another name for an echidna? spiny anteater
2. When do echidnas sleep? during the day
3. How do echidnas eat insects? by licking them up with their long sticky tongue
4. Echidnas are mammals that lay eggs.

Answers: 104

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Giant Gray Kangaroo

The giant gray kangaroo is the largest of all kangaroos. It grows to 7 feet tall. Kangaroos have huge feet and long, powerful tails. When kangaroos stand, they rest on their tails for balance. Kangaroos are found in the open forest and bush country of Australia. They eat fruit, leaves and some kangaroos travel in groups called mobs.



Kangaroos have excellent hearing, vision and sense of smell. They see people, birds and animals. Their senses and speed help them escape from danger. Kangaroos are marsupials. This means that they carry their babies, called joeys, in pouches. At birth, a joey is the size of a bee. It flows in its mother's pouch for 1 year.

Think and Learn

1. What does a kangaroo use its tail for? for balance
2. Where do kangaroos live? in the open forest and bush country of Australia
3. Kangaroos travel in groups called mobs.
4. A baby kangaroo is called a joey.

Answers: 105

105

Australian Animal Scramble

Unscramble the words below to find the names of Australian animals. The words below will help you.

K R A O K D R E B U K	A A L K O D A
<u>kookaburra</u>	<u>koala</u>
S L A B W T A L	
<u>wallaby</u>	
A D I H A C E N	
<u>echidna</u>	<u>dingo</u>
S G O O D G H	<u>wombat</u>
<u>dingo</u>	<u>platypus</u>
N O G N I D	<u>Tasmanian devil</u>
<u>dingo</u>	<u>kangaroo</u>
I B W O T A N	<u>wombat</u>
<u>wombat</u>	<u>platypus</u>
K M A S T A N A I V L E I D	
<u>Tasmanian devil</u>	
S C H A K A D O R	H O S Y P A L T P U
<u>kangaroo</u>	<u>platypus</u>

Answers: 106

106

Koala

Although many people call the animal a **hug**, it is a **hug**. The koala is a marsupial mammal with a pouch for carrying its young. The koala has beautiful gray fur, it is covered with sharp claws. Koalas eat the leaves of eucalyptus trees. Koalas are found in the eucalyptus forests on the east coast of Australia. The only one a koala climbs down from a tree is to move to another tree. They get the water they need from the leaves they eat. Koalas are nocturnal and sleep 18 hours during the day. Female koalas have one baby at a time. The baby crawls into the mother's pouch, where it stays for 6 months. Then, the mother carries the baby in her back for 4 or 6 months.



Think and Learn


1. What is a marsupial? a mammal with a pouch for its young
2. What do koalas eat? eucalyptus leaves
3. When do koalas climb down a tree? to move to another tree
4. How long does a baby koala stay in its mother's pouch? for 6 months

Answers: 107

107

Kookaburra

The kookaburra **BOON** is heard in a loud that lives in forests in the southern parts of Australia. It is best known for its loud screaming laughter. The kookaburra is known for laughing sounds of down and up. Kookaburras make their homes in hollow trees. They eat a wide variety of foods, such as caterpillars, fish, small mammals, frogs and worms. Insects, toads and fish become food.



Kookaburras usually lay one or two eggs in spring. Their kookaburras protect the nest. Young kookaburras stay in their parent's territory for up to a year. The young kookaburras must help to feed their parents' new babies.

Think and Learn

1. The kookaburra is known for its loud screaming laughter.
2. Where do kookaburras make their homes? in hollow trees
3. A kookaburra's favorite food is insects.
4. How do young kookaburras help their parents? by helping to feed the new babies

Answers: 108

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Platypus

The platypus **PLAT** is just a mammal that has a bill like a duck and a fur, sometimes called a **platypus**. It is found near rivers and streams in eastern Australia and Tasmania. The platypus is a mammal that has a bill like a duck and a fur, sometimes called a **platypus**. It has claws on its webbed feet. It uses its claws for digging burrows and getting food. The platypus eats large amounts of snails, worms, insects and small fish.



The male platypus is poisonous. It has a poison gland attached to a hollow claw on each hind leg. A scratch from this claw can kill an animal or make a human very sick. The female platypus lays her eggs in a narrow hole with bars. When the babies hatch, she holds them with her tail. The babies drink milk from her body.

Think and Learn

1. The platypus has a bill like a duck.
2. What does a platypus use its claws for? digging burrows and getting food
3. The male platypus is poisonous.
4. How does a mother platypus hold her babies? with her tail

Answers: 109

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Answer Key

Tasmanian Devil

The Tasmanian devil is a packing-of-a-meat-eater with a pouch to take its young. It is found only on the island of Tasmania, off the southern coast of Australia. The Tasmanian devil looks somewhat like a small bear. It has a large head, stubby body and strong jaws and teeth. It is named for its bad temper and love of meaty food.



The Tasmanian devil is nocturnal. It roars during the day in a hollow log or between rocks. At night, it hunts for food. It is a scavenger—it eats the remains of dead animals. It also eats sheep, chickens, rabbits and other small animals. The female Tasmanian devil keeps her young in her pouch for 15 weeks. When the furry babies come out, they still need their mother's milk for several months.

Think and Learn

1. The Tasmanian devil looks like a small bear.
2. What is the Tasmanian devil named for?
Its bad temper and love of meaty food.
3. What does the Tasmanian devil do as a scavenger?
Hunts for food
4. A devourer eats the remains of dead animals.

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Wallaby

Wallabies (MAE) are next to the kangaroo family. Like kangaroos, they stand on their hind legs and use their tail for balance. Wallabies are found in Australia, New Guinea and Tasmania. They live in grasslands or in woods. They graze on plants in the early morning and late afternoon. During the heat of the day they seek the shade when the weather is very hot, wallabies lick their forearms and press to cool themselves. Wallabies do not drink much water. They get enough water from the plants they eat.



Like other macropods, wallabies carry their young in a pouch. The baby crawls through its mother's fur and drinks into the pouch after it is born. Then, it drinks milk and grows.

Think and Learn

1. Wallabies belong to the kangaroo family.
2. During the heat of the day, wallabies rest in the shade.
3. How do wallabies cool themselves in hot weather?
By licking their forearms and paws
4. Wallabies get water from the plants they eat.

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Wombat

A wombat (WOM) has a shape of that looks like a small bear. However, it eats more like a rabbit or a mouse. Wombats have two upper and two lower front teeth that never stop growing. They use their strong legs and claws for digging and burrowing. Adult wombats weigh up to 75 pounds.



Wombats like to dig tunnels in southern Australia and Tasmania. They can go without water for a long time. Wombats dig in underground tunnels all day. At night, they come out to eat roots and leaves. A wombat builds a nest of leaves and bark, where it gives birth to one baby. The baby spends the first part of its life in its mother's pouch. A wombat can live up to 23 years.

Think and Learn

1. What do wombats use their claws for?
digging and burrowing
2. Wombats live in dry climates.
3. When do wombats eat?
at night
4. How long can a wombat live?
up to 23 years

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African Elephant

The African elephant is the world's largest land animal. A male, or bull, can grow to 11 feet tall and 24 feet long. It can weigh as much as 14,000 pounds. Trunks, tusks, ears, and another elephant's tusk are other things that are used to help them. They can really pick up small things with their trunks. Elephants spend most of the day eating leaves, grass, small branches, bark, cactus and berries. They also drink large amounts of water every day.



African elephants are found in the warm grasslands and forests of Africa. They live in herds or groups, such as family groups, giraffe and oxpeckers. Lions and hyenas will attack baby elephants and sick elephants. Adult elephants are safe from most predators.

Think and Learn

1. The female elephant is called a cow.
2. Elephants use their trunks like hands.
3. What do elephants eat?
leaves, grass, small branches, bark, cactus and berries
4. Adult elephants are safe from most predators.

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Elephant Adaptations

Adaptations (AD) are special body parts or behaviors that animals have to survive in their environments. Some elephant adaptations help them live in hot places. They lay their large ears to cool off. They also do not have a thick layer of fat. Like most animals, they



The most unusual elephant adaptation is its trunk. Elephants use their trunks to get food and water; cool off; touch, touch things, smell, make sounds and "talk" to other elephants. Small "fingers" at the end of the trunk can pick up very small objects.

Think and Learn

1. Label the elephant adaptations in the picture.
2. How do elephants use their trunks?
to get food and water, cool off, breathe, touch things, smell, make sounds, "talk" to other elephants and pick things up and carry them.

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Elephant Facts

Fill in the blanks on this page to make a fact sheet on African elephants.

What Elephants Look Like

1. Height 11 feet
2. Length 24 feet
3. Weight of an adult 14,000 pounds
4. What does an elephant look like?
Elephants are gray with thick, wrinkled skin. They have trunks and tusks, very large ears, four large feet, large bodies and small tails.

Where Elephants Live

1. Where do elephants live?
In grasslands and forests where temperatures get very hot.
2. What other animals are found where elephants live?
Some animals are lions, hyenas, giraffes and zebras.

Eating Habits

1. What do elephants eat?
leaves, grass, small branches, bark, cactus and berries.
2. What can elephants do?
Adult elephants are safe from most predators. Long and hyenas will attack baby elephants and sick elephants.

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Answer Key



Giraffe

Giraffes are the tallest of all animals. They stand over 16 feet tall and weigh over 3,000 pounds. Even though their necks are so long, they have the same number of neck bones as other animals. Giraffes have sharp hooves. They can see in all directions without moving their heads. They graze on a different pattern of grass than just as many humans do different types of grass.



Giraffes live in herds on the dry grasslands in Africa. They mainly eat leaves from acacia and EUPHORBIA trees, which are the most common trees in the area. Giraffes can go weeks without water. When they drink, giraffes spread apart their front legs and bend their neck heads to reach the water.

Think and Learn

1. Giraffes are the tallest of all animals.
2. Compare the number of neck bones to giraffes to other animals. Same number of neck bones as other animals.
3. What do giraffes eat? mainly acacia tree leaves
4. How do giraffes bend down to get a drink? They must spread apart their front legs.

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Dot-to-Dot

Connect the dots. Color the picture.



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Chimpanzee

Chimpanzees often use tools being to the ape family. They are found in savannas in Africa. Like apes, they can walk on two feet. However, they prefer to move about on all four legs. But unlike the chimpanzee, humans have hands that look like human hands. But their thumbs are shorter. Chimpanzees use their brains and voices.



Chimpanzees are one of the few animals that make and use tools. To get some of chimpanzees like nuts and put their inside acorns into. Then, they use the stones that cling to the stick. Chimpanzees also build problems in trees for sleeping. In conversations or "talk" to each other, chimpanzees use different sounds.

Think and Learn

1. Is a chimpanzee a monkey or an ape? an ape
2. Where are chimpanzees found? in savannas in Africa
3. What do chimpanzees eat? fruit, leaves and insects
4. What do chimpanzees do that most other animals cannot do? make and use tools

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Gorilla

The gorilla is the largest member of the ape family. Adult males grow up to 6 feet in height and weigh 400 pounds. Males are about 1.5 times as tall as females. Gorillas have broad chests, short shoulders, long arms and short legs. Their outer body except for the face, is covered with dark fur. Gorillas are generally animals that live in family groups. An adult male always leads the group. Females and their babies make up the rest of the group.



Gorillas are found in different parts of central Africa. Some live in mountain forests. Others live in lowland forests. Gorillas spend most of the day eating leaves and fruit. At night, gorillas build sleeping platforms on the ground in to sleep.

Think and Learn

1. Gorillas belong to the ape family.
2. What makes up a gorilla family group? an adult male, female and females and their babies
3. Where are gorillas found? in forests in central Africa
4. Where do gorillas sleep? on sleeping platforms on the ground or in trees

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Apes and Monkeys

Apes and monkeys are the animals most closely related to humans. Apes and monkeys are different. Monkeys have tails. Apes do not. Apes have larger brains than monkeys. Larger brains allow for more difficult actions.



Even though they are different, apes and monkeys are alike in some ways. Both monkeys and apes can stand up on two legs. They keep their hands free to do some kind of job. They both have hands and feet that look like their own hands. They reach and lift with "thumbs" but use in opposite directions to hold things. The action, not apes and monkeys use their hands and feet to pick up things and hold them.

Think and Learn

1. Label the monkey and the ape in the picture.
2. In what ways are monkeys and apes different? Monkeys have tails. Apes do not. Apes have larger brains.
3. How are monkeys and apes alike? Both can stand up on two legs. Both have hands and feet that look like human hands.

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Compare and Contrast

Read about the chimpanzee and the gorilla. Then, use the Venn diagram and the facts you have learned to compare and contrast these two animals.



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Answer Key

Hippopotamus

The hippopotamus is the largest animal in Africa. It is about 10 feet tall and weighs up to 4,000 pounds. Hippos have very thick, scaly gray skin. They have small ears and small, thick lips. Their mouths are so big that they can open 3 to 4 feet wide.



Hippos live by streams and rivers in many parts of Africa. During the day, they rest and sleep in the water. They keep their heads above water, except for their ears, eyes and nose. Hippos are very good swimmers. At night, they spend up to 4 hours a night eating. Hippos live in herds with 10 to 20 members.

Think and Learn

1. Hippos have very thick skin.
2. Where do hippos live? by streams and marshes in Africa
3. What do hippos do during the day? rest and sleep in water
4. Hippos eat very green plants.

133

Lion

The lion is one of the largest and fiercest members of the cat family. Lions range in size from 270 to 400 pounds. Only male lions have a mane, the thick fur around the head. The mane protects lions when they fight to defend their territory or area in which they live.



Lions sleep during the day and hunt at night. They hunt for animals, which young elephants and other smaller animals. Lions are social animals. They live in groups called prides. A pride is usually made up of one to five males and four to seven females with their cubs. Each pride has its own territory. The members of a pride hunt only in their territory.

Think and Learn

1. Why do male lions have manes? to protect them when they fight to defend their territory
2. When do lions hunt? at night
3. Lions live in groups called prides.
4. Each pride hunts in its own territory.

134

Lion Maze

Complete the maze to help the lion cub find its way back to its pride.



135

Ostrich

The ostrich (and emu) is the world's largest bird. It stands 6 feet tall. Ostriches come from Africa. Their wings are too small to fly. However, ostriches can run fast. They can run as fast as 40 miles per hour. Ostriches have very good eyesight. Their large eyes and long necks help them to see far ahead of them.



Ostriches live on dry grassy plains and sandy deserts in Africa. They can go for a long time without water. Ostriches eat leaves, seeds, flowers, grasses and small animals. Ostriches live and breed in flocks. A flock usually made up of one male and several females. The male ostrich digs a hole as a nest. Each female lays as many as 50 eggs in the nest.

Think and Learn

1. How tall is an adult ostrich? 6 feet tall
2. How fast can an ostrich run? 40 miles per hour
3. Where do ostriches live? on dry, grassy plains and sandy deserts in Africa
4. Ostriches live and travel in flocks.

136

Hidden Pictures

Find the animals hidden in the picture. Color them.



137

Black Rhinoceros

The black rhinoceros, high horns or horns (see page 138), weighs 4,000 to 6,000 pounds and is 12 feet long and weighs about 2 tons. It is a member of the bovine family. It can run as fast as a horse for short distances. Rhinoceros horns grow from the same material as hair and claws. Rhinos use the longer front horns to dig and to defend themselves. They use the shorter back horns to dig up bushes and small trees to eat.



The black rhino uses horns during the day. It comes out at night to search for food and water. Rhinos have very poor eyesight. They rely mostly on their sense of smell. A new horn or small can cause a rhinoceros to charge.

Think and Learn

1. The black rhinoceros is related to the horse.
2. How does a rhinoceros use its horn? to dig and to defend itself
3. What do rhinoceroses eat? bushes and small trees
4. What sense do rhinoceroses rely on most? smell

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Answer Key

Vulture

Vultures have large, hooked bills to help them tear apart their food. They scavenge for food. Vultures have bare, wrinkled skin on their heads and necks. Their bill is an eighth of an inch thick. Vultures live in mountainous, grassy areas and deserts. They generally do not live in forests or near the ocean or in cities.

Vultures are scavengers. Scavengers feed on the remains of dead animals. Vultures use their sharp beak and keen sense of smell to find food. Vultures are scavengers. Vultures use their sharp beak and keen sense of smell to find food. Vultures are scavengers. Vultures use their sharp beak and keen sense of smell to find food.



Think and Learn

1. Vultures are large birds. _____
2. Where do vultures live? mountainous, grasslands and deserts
3. What do vultures eat? The remains of dead animals
4. How do vultures find food? with their sharp beak and keen sense of smell

139

Zebra

The zebra has a striped coat that helps it hide. The zebra stripes help the zebra blend in with its surroundings. A zebra standing in tall grass is very hard to see. Each zebra has to shave its legs. Each zebra has to shave its legs. Each zebra has to shave its legs. Each zebra has to shave its legs.

Zebra are found in the savanna and grasslands of eastern and southern Africa. They eat only grass, and they spend most of their time grazing. Zebras live in herds made up of a male, several females and their babies. Zebras protect themselves by staying together in a herd. They are stronger, they try to run away. Zebras can run as fast as 40 miles per hour.



Think and Learn

1. A zebra stripes help it blend in with its surroundings.
2. Where are zebras found? in deserts and grasslands of eastern and southern Africa
3. Zebras eat only grass.
4. What do zebras do when they are in danger? run away

140

Word Search

Find the names of African animals hidden in the puzzle. The animal names are written across and down.



- | | | |
|----------|-------|--------------|
| giraffe | lion | hippopotamus |
| vulture | zebra | elephant |
| giraffe | zebra | hippopotamus |
| elephant | zebra | hippopotamus |

142

What Is an Insect?

All insects have three main body parts—head, chest and abdomen. An insect has six legs, two antennae and two pairs of wings. Its legs and wings are attached to the chest. The abdomen helps it breathe. The abdomen helps it breathe. The abdomen helps it breathe. The abdomen helps it breathe.



All insects have three main body parts—head, chest and abdomen. An insect has six legs, two antennae and two pairs of wings. Its legs and wings are attached to the chest. The abdomen helps it breathe. The abdomen helps it breathe. The abdomen helps it breathe. The abdomen helps it breathe.

Think and Learn

1. What are the three main body parts of an insect? head, chest and abdomen
2. Legs and wings are joined to the chest.
3. What is the hard covering on the outside of all insects' body? the exoskeleton
4. How many legs do insects have? six legs

144

Ant

Ants are social insects that live and work together in large groups. Ants have two antennae and six legs. The antennae are used to touch, taste and smell. Ants are helpful if its antennae are damaged. Ants have very strong jaws that are used for digging and for getting food. Ants are found in the soil and in the ground. Ants are found in the soil and in the ground. Ants are found in the soil and in the ground. Ants are found in the soil and in the ground.



Think and Learn

1. Why are ants called social insects? They live and work together in large groups.
2. Ants have two long antennae on top of their heads.
3. Ants use their jaws to dig and for getting food.
4. Where do ants live? in the soil and in the ground.

145

Ant Colonies

Ants live in groups called colonies. There are three different groups of ants in a colony—the queen, the workers and the males. Each ant has a special job. The queen ants are the largest females. Their only job is to lay eggs. The worker ants are usually females that do not lay eggs. The workers have many jobs. Some workers are queen ants who care for the eggs. Other workers are soldier ants and bring a food to the colony. The largest workers are soldier ants who guard the nest. Male ants live in the nest only at certain times. Their job is to mate with the queen and other mating. The male ants work the soldier ant.



1. Label the ant in the colony that is a queen ant. Label the soldier ant.
2. What are the three different groups of ants living in an ant colony? queen ants, worker ants and the males

146

Answer Key

Bee

Bees are the only insects that make a food that people eat. Bees have a special stomach, called a honey stomach, where they store nectar. The queen bee feeds the other bees. The queen bee lays eggs. The worker bees take care of the eggs. The drones are male bees that mate with the queen.



Bees live all over the world, except for the North and South poles. Bees build their homes in hollow trees or in beehives. Some bees live in social groups like ants. The queen bee lays eggs. The worker bees take care of the eggs. The drones are male bees that mate with the queen.

Think and Learn

1. What is a honey stomach?
A special stomach where bees store nectar.
2. Female bees have a stinger. They use it to defend.
3. Where do bees build their homes?
In hollow trees or in beehives.
4. How are drones? Male bees that mate with the queen.

147

Honeybees

Some farmers build wooden boxes for honeybees. They are called hives. Honeybees build like a wall with many air holes. Worker bees take the honeycomb out of hives, which they make in their stomach. The bees in the honeycomb are used for eating eggs, young bees, and honey.



Worker bees make honey from the nectar they collect from flowers. As bees collect nectar from flowers, they spread pollen from one flower to another. Pollen grains are the male sex cells of a flowering plant. A flower needs pollen to form fruit and seeds. Farmers often keep bees to help spread the pollen on their fruit trees. Then, the fruit trees will have a lot of fruit. Farmers also collect the honey.

Think and Learn

1. What are honeybees made of?
Bees.
2. Why do farmers keep bees?
They help spread pollen on the farmers' fruit trees, and the farmers collect the honey.

148

BZZZ, BZZZ, BZZZ

Complete the sentences below by filling in the missing words. Then, write each word in a cell of the honeycomb with the matching number.



1. Bees collect nectar to make _____ honey.
2. The bees that take care of the hive and make honey are called _____ worker bees.
3. The bee that lays all the eggs is called the _____ queen bee.
4. Male bees are called _____ drones.
5. A honeycomb cell has _____ six _____ sides.
6. Honeycombs are made out of _____ beehives.

149

Beetle

Beetles are the largest group of insects and come in every color of the rainbow. All beetles have two pairs of wings. The outer wings are hard. They protect the inner, or light, wings. The light wings are thin and clear. They stay folded under the outer wings and spread for flight. Beetles have very strong legs to grab and chew food.



Beetles are found all over the world. Beetles make their homes in many different places, from in water to under the ground. Beetles can be harmful or helpful to people, depending on what they eat. Some beetles damage the plants in gardens and farmers' fields. Other beetles eat harmful insects.

Think and Learn

1. Beetles are the _____ largest _____ group of insects.
2. Which wings do beetles use for flight?
The thin, clear inner wings.
3. Beetles have strong _____ legs _____ to grab and chew food.
4. How are beetles helpful to people?
By eating harmful insects.

150

Butterfly

Butterflies are beautiful insects. The body of a butterfly is long and slender. They have knobs at the ends of their antennae, which are used for smelling. Their wings are covered with tiny scales that give the wings their color. All butterflies hatch as caterpillars, which look like worms. The caterpillars change to adult butterflies in a cocoon, or pupa-like case.



Butterflies are both omnivores. They live on nectar and in insects. As caterpillars, they eat leaves and trace other damaging crops. As butterflies, they catch flies or chew the food. They drink nectar the sugary liquid from flowers. Butterflies fly only during the day. When resting, they fold their wings straight up.

Think and Learn

1. What do butterflies use their antennae for?
Smelling.
2. They _____ eat _____ give butterfly wings their color.
3. What do caterpillars eat?
Leaves and fruit.
4. When do butterflies fly?
Only during the day.

151

Cricket

Crickets are jumping insects. Most crickets are either black or brown in color and are about 1 inch long. Crickets have two pairs of wings. Both pairs of wings fly over the cricket's back. Only male crickets make the chirping sound that crickets are known for. They make the sound by rubbing their wings together. They make this sound to attract female crickets. Crickets have special legs with a special body part on their back legs.



Crickets are found in many parts of the world. They hide during the day and are active at night. This is when they chirp and search for food. Crickets eat grass and the remains of other insects.

Think and Learn

1. Crickets are _____ jumping _____ insects.
2. How do male crickets chirp?
By rubbing their wings together.
3. How do crickets hear?
With a special body part on their back legs.
4. When do crickets search for food?
At night.

152

Answer Key

Fly

Flies are very common insects. People are often near them everywhere. There are many different kinds of flies, such as house flies, fruit flies, gnats and deer flies. Flies have only one pair of wings. The beating sound you hear when a fly flies by is the sound of its wings beating together. Flies use their antennae to touch and smell things. There is one tiny hole made on the bottom of their feet. These help flies stick to walls and walk upside down on ceilings.



Although flies look harmless, they can carry and spread germs. Some flies, however, are helpful. They spread pollen from flower to flower like bees do.

Think and Learn

1. What are some kinds of flies?
house flies, fruit flies, gnats and deer flies
2. How many **one** pair of wings
3. How do they **beat** to touch and smell things.
4. How can carry and **spread**

153

Grasshopper

Grasshoppers are best for jumping. Grasshoppers have long thin legs with powerful muscles. Some grasshoppers have large fragile wings that are protected by a second set of wings. Like crickets, male grasshoppers make sounds by rubbing their wings together. Although grasshoppers can fly, they fly for only short distances. They move mostly by leaping and jumping.



There are two kinds of grasshoppers—long-horned grasshoppers and short-horned grasshoppers. Long-horned grasshoppers have long antennae. They eat plants and, some eat, the leaves of animals. Short-horned grasshoppers are locusts. They have short antennae and eat only plants. Some locusts damage crops.

Think and Learn

1. Grasshoppers are best for **jumping**.
2. How do grasshoppers fly? **for only short distances**.
3. Long-horned grasshoppers have **long** antennae.
4. Locusts are **short** horned grasshoppers.

154

Mosquito

The mosquito is a kind of fly. Like all flies, mosquitoes have only one pair of wings. Mosquito wings are less than 1,000 times each second. The mosquito's head is almost entirely covered with two large eyes. The antennae used for hearing and smelling are located between the eyes. Female mosquitoes have this antennae. Male mosquitoes have feathery antennae.



Mosquitoes are found in all parts of the world. Some mosquito bites are dangerous to the health of humans. Mosquitoes are most annoying because they bite and itch. Only female mosquitoes bite. They bite to get the blood they need for their eggs to grow.

Think and Learn

1. The mosquito is a kind of **fly**.
2. Mosquito wings can beat **1,000** times each second.
3. What do mosquitoes use their antennae for?
hearing and smelling
4. Why do female mosquitoes bite?
to get the blood they need for their eggs to grow

155

Moth

Moths are closely related to butterflies. Butterflies and moths are so much alike that it is sometimes hard to tell them apart. Unlike butterflies, moths have chubby bodies and usually fly only at night. Most moths have thick hair. The antennae give moths their sense of touch and smell. Moths cannot see in color. They have a mouth that feeds and works like a drinking straw. Moths eat and rest at night.



Moths are found everywhere. They have many enemies, such as frogs, birds, snakes and spiders. Some moths protect themselves by flying away. Others blend into their surroundings. Some moths take to avoid that when animals work them alone.

Think and Learn

1. Moths are closely related to **butterflies**.
2. When do moths fly? **usually only at night**
3. Moth antennae look **feathery**.
4. What are some enemies of moths?
frogs, birds, snakes and spiders

156

What is a Reptile?

Reptiles are cold-blooded animals with scaly skin. Cold-blooded animals cannot control their body temperature. Their body temperature is the same as the temperature of their surroundings. However, many reptiles keep their body temperature even by moving to sunny or shady spots during the day.



The scales on the reptiles also keep the skin from drying out, as reptiles grow, they shed their skin. Snakes shed their entire skin, while other reptiles have skin that falls off in small scales by hard-shedded eggs. However, some reptiles give birth to live young. Scientists divide reptiles into four groups—lizards, crocodiles, snakes and turtles, and turtles.

Think and Learn

1. **Reptiles** are cold-blooded animals with scaly skin.
2. How do some reptiles keep their body temperature even?
by moving to sunny or shady spots during the day
3. What keeps a reptiles skin from drying out?
scales
4. Most reptiles lay hard-shelled **eggs**

reptile

158

Tuatara

The tuatara lives in New Zealand. It looks like a lizard but is actually the last remaining member of its group. Tuatara lived during the time of the first dinosaurs, about 220 million years ago. They have not changed since that time. Tuatara have a third eye on top of their head. They also have two rows of scales. A row of bony plates runs along their back. These plates are straight up when tuatara are frightened.



Tuatara are found only on some islands near New Zealand. They live in burrows made by rabbits. They can dig their own burrows but seem to prefer ones already made. Tuatara lay hard-shelled eggs that take 12 months to hatch.

Think and Learn

1. Tuatara lived during the time of the first **dinosaur**.
2. How many eyes do tuatara have? **three**
3. Where are tuatara found?
on some islands near New Zealand
4. How long do tuatara eggs take to hatch? **12 months**

159

Answer Key

Crocodile

Crocodiles **STRETCH** up rights like the largest reptiles. They can reach 30 feet in length. Of all the animals belonging to the crocodile group, crocodiles are the most dangerous. Crocodiles have long narrow snouts. When their mouths are closed, their lower teeth show.

Crocodiles are found in the tropical parts of the world. They catch fish and small land animals for food. Like alligators, crocodiles are most active at night. During the day they rest in the sun. Often a crocodile lies with its mouth open to help cool its body. When its mouth is open, the crocodile lets in air to cool and pick out leftover pieces of food.



Think and Learn

- Crocodiles are the largest reptiles.
- Describe the shape of a crocodile's snout.
long and narrow
- What do crocodiles eat? fish and small land animals
- How does a crocodile cool its body?
by lying with its mouth open

Reptiles 170

Alligator

Alligators (AL-ig-uh-tor) belong to the crocodile group of reptiles. Although they are members of this group, alligators and crocodiles are two different animals. Alligators have wide rounded snouts, while their mouths are closed, their lower teeth are visible. Alligators are smaller than crocodiles. They grow up to 12 feet long.

Alligators are found in south-eastern United States and in parts of China. They eat fish, fish, snakes, turtles and small mammals. Like crocodiles, alligators are good swimmers. Alligators move through the water by moving their tails from side to side. Female alligators lay as many as 50 eggs and guard the eggs until they hatch. Mother alligators care for their young for up to a year.



Think and Learn

- Alligators belong to the crocodile group of reptiles.
- Describe the shape of an alligator's snout.
wide and rounded
- How do alligators move through water?
by moving their tails from side to side
- How long do alligators care for their young for up to a year?

Reptiles 171

Compare and Contrast

Read about crocodiles and alligators. Then, use the Venn diagram and the facts you have learned to compare and contrast these two reptiles.

Crocodile



Reptiles 172

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172

Lizard

Lizards and snakes make up the largest group of reptiles. Most lizards have four legs with two claws on each leg. Some lizards do not have legs. Lizards have movable eyelids and good eyesight. They do not have ears, but they have ear openings in the sides of their heads. Lizards use their tongues for eating.

Lizards are found in all parts of the world, except the North and South poles. Some lizards eat insects and small mammals. Some lizards eat plants. Lizards protect themselves by changing color with their surroundings, making their bodies look bigger or making hissing sounds. Some lizards have tails that break off and keep growing, while the head escapes. Later, it grows a new tail.



Think and Learn

- Lizards have movable eyelids.
- What do lizards use their tongues for? eating
- What do most lizards eat?
Worms, insects and small mammals. Some eat plants.
- Some lizards protect themselves by losing their tails.

Reptiles 173

Chameleon

Chameleons look like lizards, but they can change their body color to match their surroundings. They can bend in so well that they actually walk upside on chameleons bodies are flat on the sides. Their eyes are large and bulging. Each eye works separately from the other. They can look in different directions at the same time.

Chameleons are slow-moving lizards. They do not stretch down their bodies, instead, a chameleon stretches its body and folds to come out. When a chameleon sees an insect, it shoots out its sticky tongue and catches the insect. Chameleons are found only in Africa and Madagascar.



Think and Learn

- What changes on chameleons? their color
- How can chameleons look in different directions at the same time? Each eye works separately from the other.
- Chameleons catch insects with their sticky tongue.
- Where are chameleons found? In Africa and Madagascar.

Reptiles 174

Snake

Snakes are reptiles that have long bodies and no legs. Snakes move by sliding on their belly. Snakes cannot close their eyes because they do not have eyelids. Their eyes are covered with clear scales. Snakes do not have ear holes, instead, they "hear" sounds by feeling the movement of air around them. Snakes have a long forked tongue that helps them smell.

Snakes eat other animals. The size of animal they can eat depends on the size of their mouth. A snake swallow its food whole. Snakes do not eat often. When it does eat only a few times a year. Snakes, like all other reptiles, lay eggs or give birth to live young. They do not take care of their young.



Think and Learn

- How do snakes move? by sliding on their belly
- What covers a snake's eyes? clear scales
- Snakes use their long, forked tongue, to help them smell.
- How often do most snakes eat? only a few times a year

Reptiles 175

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Answer Key

Garter Snake

Garter snakes are harmless snakes found in Central and North America. Female garter snakes give 20 to 120 long, thin eggs in slightly swollen Garter snakes living in different areas have different body markings along their bodies. They come in many different colors. However, most garter snakes have three stripes running along their bodies.

Garter snakes are most active in the spring and autumn. That is when most people see them in their yards or in parks. Garter snakes crawl and are afraid of mice, such as frogs, salamanders and fish. Garter snakes do not lay eggs. Instead, they give birth to live young.



Think and Learn

1. Garter snakes are harmless snakes.
2. What feature do most garter snakes have?
Three stripes running along their body.
3. When are garter snakes most active? Spring and autumn.
4. Garter snakes do not lay eggs.

Answer

176

Rattlesnake

Rattlesnakes are poisonous snakes with "rattles" on their tails. The rattles are pieces of bone that are loosely connected. As a rattlesnake grows enough to shed its skin, a new section of the rattle forms. Many people believe that a rattlesnake will chase its tail before striking. That is not always true.

Rattlesnakes are most commonly found in the desert areas of the United States and in the mountains of Mexico. Rattlesnakes eat small animals. They catch animals by reaching on them and biting them. The poison in their fangs, or long front teeth, kills the animal. All rattlesnakes give birth to live babies. Young rattlesnakes take care of themselves right away.



Think and Learn

1. Where are rattlesnakes found? deserts of the United States and mountains of Mexico
2. Their rattles are pieces of loosely connected bone.
3. What do rattlesnakes eat? small animals
4. Rattlesnakes have poison in their fangs.

Answer

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Turtle

Turtles are reptiles with shells. Their shells are made of many bony plates in tough outer layers. The shell protects the turtle's body. Many turtles can pull their legs and head inside their shells. Turtles do not have teeth. They cut their food with their hard sharp beak. They also breathe air with lungs. All turtles lay eggs and bury them in soil. The warmth from the sun helps the eggs hatch.

Turtles are found all over the world. Some turtles spend most of their lives in water. Other turtles spend some time both in the water and on land. There are also turtles that live only on land. Turtles eat both plants and animals.



Think and Learn

1. Turtles are reptiles with shells.
2. How do turtles eat their food?
with their hard, sharp beaks
3. All turtles lay eggs.
4. What do turtles eat? both plants and animals

Answer

178

Sea Turtle

Sea turtles are turtles that live in the ocean. Sea turtles are very large. They weigh in size from 2 to 4 feet and weigh from 500 to 1,800 pounds. Instead of claws, sea turtles have flippers to help them swim easily through water. Sea turtles have flat shells instead of rounded shells like land turtles. Their shells also help them move more easily through water.

Sea turtles are found in warm oceans throughout the world. They eat fish, shrimp, crabs, jellyfish and plants. Sea turtles dig holes and lay their eggs on sandy beaches. The eggs lay buried in the sand for a couple of months before they hatch. When the eggs hatch, the babies dig out of the sand and head for the ocean.



Think and Learn

1. Flippers and flat shells help sea turtles move in the water.
2. Where are sea turtles found? in warm oceans
3. Sea turtles eat fish, shrimp, crabs, jellyfish and plants.
4. Sea turtles lay their eggs on sandy beaches.

Answer

179

Reptile Puzzle

Fill in the spaces of the puzzle with the correct animal name.



Answer

180

Crab

A crab is a sea animal covered by a hard shell. Crabs have two pairs of jointed legs. The first pair of legs are legs called claws. Crabs use their claws to pinch, grasp, defend themselves and get food. One pair of legs is the first pair of legs is shaped like pincers. On land, crabs often walk sideways on their last four pairs of legs. Crabs come in all sizes, from less than 1 inch long to 12 feet long.

Crabs are found in oceans all over the world. Some crabs live on land but most lay their eggs in the sea. Their young grow in the sea until they are adults. Then they move to the land. Crabs eat both plants and animals.



Think and Learn

1. Crabs have five pairs of jointed legs.
2. How do crabs use their claws? to attract mates, defend themselves and get food
3. Crabs walk sideways on their last four pairs of legs.
4. What do crabs eat? plants and animals

Answer

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182




Answer Key

Dolphin

Dolphins aren't fish. They are small toothed whales that live in the ocean. They are mammals, not fish. A mammal is an animal whose young feed on its mother's milk. Dolphins also breathe with lungs, not gills like fish. They must come to the surface of the water to breathe. Dolphins have heads well suited for living in water. They have long narrow bodies, flippers and fins on their backs.

Dolphins are social animals. They live together in groups. They also talk to each other using many different sounds. Dolphins are very smart animals. Many have been trained by humans to do different jobs and to entertain people. Dolphins eat fish and squid.



Think and Learn

- Dolphins are mammals, not fish.
- Dolphins breathe with lungs.
- How are dolphin bodies suited for living in water? Dolphins have long, narrow bodies, flippers, and fins on their backs.
- What do dolphins eat? Fish and squid.

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Dot-to-Dot

Connect the dots. Color the picture.




Animals That Live in the Water 183

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Jellyfish

Jellyfish are soft-bodied animals that live in oceans. Jellyfish get their name from the soft, jelly-like material that makes up their body. Jellyfish have no bones. Their body is shaped like an open umbrella. Their mouth hangs open from the center of their body. Long tentacles hang down around the outside of their body. These tentacles are poisonous.

Jellyfish swim by opening and closing their body. This action pushes the jellyfish through the water. To go fast, jellyfish lean their bodies forward. Then, as they lean back to the bottom, they catch air and other small animals by staying close with their poisonous tentacles.



Think and Learn

- What are jellyfish named for? the soft, jelly-like material that makes up their body.
- What are jellyfish shaped like? open umbrellas.
- Jellyfish have poisonous tentacles.
- How do jellyfish swim? By opening and closing their body.

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Lobster

Lobsters aren't fish. They are related to crabs. Like crabs, lobsters have hard shells and five pairs of jointed legs. The first pair of legs has claws. Lobsters use their claws to grab food and tear it apart. Lobsters have long bodies divided into three parts—the head, the thorax or middle, and the abdomen or tail.

Lobsters live on the ocean floor near the shore. They usually hide in holes or under rocks and wave their antennae out. Lobsters have eyes on the ends of the stalks near their antennae. When a lobster senses that an animal is passing by, it moves on the antenna and grabs it with its claws. Besides small animals, lobsters eat sea slugs.



Think and Learn

- Lobsters are related to crabs.
- How do lobsters use their claws? To grab food and tear it apart.
- Lobster bodies are divided into three parts.
- Where do lobsters live on the ocean floor near the shore?


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Octopus

An octopus (OCTO) has eight arms and eight eyes. These arms are called tentacles. The bottom sides of the tentacles are lined with suckers. Suckers are round and help octopuses stick to rocks. An octopus uses its arms and suckers to catch food and to move along the ocean floor.

Octopuses are found in oceans all over the world. They eat crabs, lobsters, clams and snails. Many other sea animals are poisonous. An octopus defends itself by squirting a dark cloud to hide itself. It can also change colors to other colors as a way to help the octopus blend in with its surroundings. An octopus can shoot out a jet of water from its body and move quickly away.



Think and Learn

- An octopus has eight tentacles.
- How does an octopus use its tentacles? To catch food and to move along the ocean floor.
- What do octopuses eat? crabs, lobsters, clams and snails.
- Octopuses can change color or scale away enemies.


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Salmon

Salmon are large fish that are born in freshwater streams. After birth, the young fish swim to the saltwater ocean. Some kinds of salmon go to the ocean right away. Other kinds stay in the streams for several years. Salmon live most of their lives in the ocean. When salmon are ready to lay eggs, they swim back to the fresh water streams where they were born. The return trip is not easy. Salmon must swim against strong river currents and jump up waterfalls.

Salmon are found in the Pacific and Atlantic oceans. They eat shrimp, squid and small fish. When they return to freshwater rivers and streams to lay eggs, they do not eat. They live off the fat that is stored in their bodies.



Think and Learn

- Where are salmon born? in fresh water streams.
- Where do salmon live most of their lives? in freshwater streams.
- Why is the return trip to lay eggs not easy? Salmon must swim against strong river currents and jump up waterfalls.
- What do salmon living in the ocean eat? shrimp, squid and small fish.

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Answer Key

Sea Horse

A sea horse is a small fish with a head that looks like a horse's head. Its body is only about 6 inches long. Sea horses have long tails. They use their tails to hold onto plants. Their spiny coat protects them. The spines sea horses use are stinging substances. They move in an upright, or "standing up," position. They move through the water by moving their dorsal, or back, fin back and forth.



Sea horses are found in shallow ocean water in warm climates. They feed by sucking in small animals through their long snout. Female sea horses lay eggs in a pouch on the male sea horse's body. The male sea horse carries the eggs until they hatch.

Think and Learn

1. A sea horse is a small fish.
2. How do sea horses use their tails? for holding onto plants
3. Sea horses swim in an upright position.
4. Where do female sea horses lay eggs?
In a pouch on the male sea horse's body.

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Answers That Live in the Water

Shark

Sharks are fish that feed on other animals. Unlike most fish, sharks do not have bones. Instead, their bodies are supported with cartilage. BASKETBALL: Cartilage is a tough, flexible material. You have cartilage in the tip of your nose. Most sharks have mouths on the bottom side of their head. Some kinds of sharks have grinding teeth. Others have tearing teeth.



Sharks come in all sizes. Some are as small as 6 inches long. Others can grow to 40 feet long. Sharks are found in all parts of oceans. They are very good swimmers. Their long, narrow bodies help them move easily through water. Their curved tails help them swim fast.

Think and Learn

1. Sharks are fish that feed on other animals.
2. Sharks have cartilage instead of bones.
3. Where are sharks found? In all parts of oceans.
4. How do sharks help swimmers?
Curved tails help sharks swim fast.

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Answers That Live in the Water

Starfish

Starfish are sea animals with spines on their skin. Sea fish or sometimes called sea stars because they are shaped like stars. Many starfish have five "arms" pointing out from their body. However, some starfish have as many as 40 arms. Starfish have rows of tiny tube-shaped feet along their arms. These tube feet help starfish move and get food.



Starfish are invertebrates. All sea life animals with shells, such as clams and oysters. A starfish opens up a shell by starting to tube feet in both halves of the shell. Then, it pulls apart the shell and pushes its stomach through for eating in the shell.

Think and Learn

1. Starfish are invertebrates.
2. Starfish have a body shaped like a star.
3. How do starfish use their tube feet?
To move and get food.
4. What do starfish eat?
Animals with shells, such as clams and oysters.

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Answers That Live in the Water

Whale

Whales are large mammals that live in the ocean. Mammals are animals whose young feed on their mother's milk. Although whales look like fish, they are very different. Whales have lungs and must come to the water's surface to breathe. Whales also have tails that move up and down, not back and forth.



Some whales have teeth. These whales usually eat fish and other animals. Other whales do not have teeth. These whales feed on tiny plants and animals that float in the water. Whales use vocal animals that live in groups. Whales "talk" to each other by making many different sounds. Whales have a keen sense of hearing and can hear sounds from far away.

Think and Learn

1. Whales are mammals that live in the ocean.
2. How are whales different from fish?
Whales have lungs and move their tails up and down.
3. What do whales usually eat?
Tiny plants and animals that float in the water.
4. Whales have a keen sense of hearing.

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Answers That Live in the Water

Word Search

Let's go on a whale walk! Make your list on the largest animal on Earth, the blue whale. Find the whales and other words in the picture. They are written across and down.



Blue whale	Walrus	Whale	Seal	Manatee
Orca	Shark	Porpoise	Sturgeon	Crab

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Answers That Live in the Water

Hidden Pictures

Find the water animals hidden in the picture. Color the pictures.



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Answers That Live in the Water

Answer Key

Duck

Ducks are birds that spend part of their time in water. Their webbed feet act as paddles to move them easily through the water. Most ducks get their food from water or from the areas around water. Some ducks eat fish. Others eat water plants and small water animals. Ducks keep dry by using their fat feathers with oil from a special gland near their tail. They have a layer of soft fluffy down, called down, under fat on their bodies. Down keeps the duck warm.



Parents raise ducks for their feathers, eggs and meat. Duck feathers are used to stuff pillows and make winter coats. Ducks raised on farms do not get their food from water. The farmer feeds them a kind of food made just for ducks.

Think and Learn

1. What helps ducks move through water? webbed feet
2. How do ducks get their food from water.
3. What is down? A layer of soft, fluffy feathers under the fat feathers.
4. Farmers raise ducks for feathers, eggs and meat.

Fun animals 216

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Pig

Pigs are farm animals with short legs and a long round body. Their bodies are covered with short bristles. Pigs cannot swim to avoid their body in hot weather. Instead, they lie in the mud during hot weather to cool off. Pigs have a sharp sense of smell that goes straight to the rest of their fat tissue. It is very sensitive to touch. Pigs use their snout for feeding and digging up food.



Farmers all over the world raise pigs. Pigs are raised for their meat, which is called pork. Many other products, such as leather, glue, soap, hairbrushes and medicines, are made from other parts of the pig. Farmers feed pigs corn and other grains. Pigs also eat "pig chow" made with corn, soybeans, milk, peanuts, soybeans and other foods.

Think and Learn

1. How do pigs cool themselves? by lying in the mud.
2. Pigs use their snout for feeding and digging up food.
3. Pigs are raised for their meat, which is called pork.
4. What are some other products made from parts of the pig? leather, glue, soap, fertilizer and medicines.

Fun animals 217

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Horse

The horse is a very useful animal. Long ago, people used horses to go places and move things. Now, many people use horses for fun. Some people, however, still use horses to herd cattle and sheep. Horses are built for running. They have long legs and strong feet. Their white manes fringe a set of air into the lungs. They also have strong senses of sight, hearing and smell.



Horses are good and gentle. They look after cows and take to good grass into small places. Their teeth never stop growing. Their back teeth are sharp and strong. They help the horse live off grass from the grasses.

Think and Learn

1. What do people use horses for today? for fun and herding cattle and sheep.
2. Horses are built for running.
3. What do horses eat? grass and grains.
4. How do horses use their back teeth? for grinding grass into small pieces.

Fun animals 218

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Cow

Cows are large farm animals with soft bodies. They have long tails that help sweep insects away. Cows eat grass, hay and silage and vegetables. They break down food in a stomach that has four parts. When breaking down food, cows move it from the stomach back into their mouths to chew it again. The food that moves back into their mouths is called a cud. Cows clear the cud and swallow it again. Then the food moves through the other parts of the stomach.



Cows are one of the most important farm animals. Farmers raise cows for their milk and their meat, called beef. Cow's milk is used to make cheese, butter, yogurt and ice cream. Other parts of a cow's body are used to make leather, soap and glue.

Think and Learn

1. What do cows eat? grass, hay, corn and vegetables.
2. Cows have a stomach that has four parts.
3. What does cows is called cud?
4. What foods are made from cows' milk? cheese, butter, yogurt and ice cream.

Fun animals 219

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Chicken

Chickens are ground birds. They have a plump body and combated wings. Chickens can fly for only short distances. They do to get away from danger. Chickens have pointed beaks and strong claws that they use to scratch in the dirt and get food. Different kinds of chickens have feathers of different colors.



Chickens are raised on farms all over the world. Farmers raise chickens for their eggs and their meat, called poultry. Some chickens are raised only for their meat. Other chickens are raised just to lay eggs. Some farmers raise only baby chicks. They sell the chicks to other farmers who raise them for meat or eggs. Farmers feed chickens a mixture of ground corn, wheat and soybeans.

Think and Learn

1. Chickens lay for eggs chickens.
2. How do chickens get their strong claws? for scratching in the dirt to get food.
3. What are chickens raised for? egg and meat.
4. What do farmers feed chickens? corn, wheat and soybeans.

Fun animals 220

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Sheep

Sheep are related to cows and goats. Like cows, sheep have a stomach that is divided into four parts. Sheep also have soft, hollow, woolly coats that are full of water or air. They live in cool grass and shrubs. When sheep eat, they spit all grass they chew to the ground. If sheep are kept in the same pasture for a long time, they can kill off the grass.



Sheep are raised all over the world. However, the most sheep are raised in Australia and New Zealand. Sheep are very important animals because they give the world milk and meat, called lamb or mutton. Wool is used to make clothing, blankets and rugs. Sheep milk is used to make cheese.

Think and Learn

1. What other farm animals are sheep related to? cows and goats.
2. Sheep do not need a lot of water to live.
3. Where are the most sheep raised? Australia and New Zealand.
4. What are sheep raised for? wool, milk and meat.

Fun animals 221

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Answer Key

Goat

Goats are related to sheep and deer. Like sheep and cows, goats have split hooves and a hair coat known as **wool**. Goats have long shaggy hair. Most goats, both male and female, have a beard. Goats are known for doing almost anything. Because they like to eat plants and bushes, both goats can easily pick off only the healthful parts of a plant. They find food even in places where few plants can grow.



Female goats give for their wool, milk and meat. People living in many mountain areas rely on goats for meat. People in the United States use goats mainly for wool and milk. Some people even keep goats as pets. Goat's milk is used for drinking and making cheese. The wool is used to make clothing and blankets.

Think and Learn

1. How are goats like sheep and cows?
They have split hooves and a four-part stomach.
2. Goats can pick off only the healthful parts of a plant.
3. Goats are related to wool, milk and meat.
4. Goat's milk is used for drinking and making cheese.

Answer Key

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Dog

Dogs are popular pets throughout the world. Dogs have been bred through the years for certain jobs, such as guarding, hunting and herding. Some dogs have been bred just to be pets. Dogs come in all sizes, colors and shapes and breeds. When choosing a dog for a pet, the single quality most fit to win the family's affections.



Being care of a dog is a big responsibility. Dogs need to be fed every day. They need clean, fresh water all the time and a warm, dry place to sleep. Dogs also need regular exercise, especially if they are big dogs. Dogs must be brushed and bathed regularly. Dogs also need medical check-ups every year. They must have vaccines and medicines to stay healthy.

Think and Learn

1. What jobs have dogs been bred for?
guarding, hunting and herding
2. Dogs should be fed every day.
3. Dogs need regular exercise.
4. Every year, dogs need medical checkups.

Answer Key

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Cat

Cats have been favorite pets for thousands of years. As few people had cats to get rid of pests, such as mice and snakes. Cats are skilled hunters. They have keen senses, sharp claws and the ability to stretch and climb. Today, most people have cats to keep them company. Cats are smart but rather independent animals. They make good pets for people who are not home often.



Cats need to be fed every day. They should always have fresh water for drinking. Cats can clean animals and groom themselves often. However, cats should be brushed regularly to remove dead hair, especially if the cat has long hair. Cats must also be taken to the veterinarian for medical check-ups.

Think and Learn

1. Why did people first keep cats as pets?
To get rid of pests, such as mice and snakes
2. Cats have keen senses and sharp claws.
3. Cats are clean animals and groom themselves.
4. Cats must go to the veterinarian for check-ups.

Answer Key

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Animal Friends

Plants, animals and people must share the world. How can you be kind to our animal friends? Under each picture, write one way that you can be kind to the animal.

Be Kind to Our Animal Friends



Answers will vary.



Answers will vary.



Answers will vary.

Answer Key

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Rabbit

Rabbits are related to long ears and fluffy tails. Rabbits are animals with four legs that grow all the time. The rabbits that people have something to share us. If you, their hair will grow so long that they have to shave their normally.



Not rabbits need a hutch, or a cage, to live in. They can be kept outside in a fenced grass during the summer. In winter, they must be kept in a heated garage or a cool basement. Rabbits eat pellets made just for them. They need fresh hay to eat every day. They also like their vegetables, carrots and greens. A water bottle filled with clean water should always be kept in the cage. Most rabbits do not like to be held in a long one. Never pick up a rabbit by its ears.

Think and Learn

1. A rabbit has short teeth that grow all the time.
2. What do pet rabbits like to eat?
3. What do rabbits eat?
fresh hay, fresh vegetables, carrots and greens
4. Never pick up a rabbit by its ears.

Answer Key

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Health Book

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Guinea Pig

A guinea pig is a small animal with a large head, short legs and small ears. They grow to 14 inches long and weigh about 1 pound. Guinea pigs are not really pigs. They are rodents. Rodents have front teeth that never stop growing. For this reason, guinea pigs must always have a block of wood to gnaw on.



Guinea pigs make good classroom pets. They are easy to care for, and they don't often bite. Guinea pigs need a cage through which air can easily move. They should have food and fresh water in their cage at all times. Guinea pigs eat grain, fresh vegetables and hay. Guinea pigs are most active at night. They are quiet during the day and sleep in a hutch they made in their cage.

Think and Learn

1. Guinea pigs are not pigs; they are rodents.
2. What is the length of a guinea pig? 14 inches long.
3. Why do guinea pigs make good classroom pets?
They are easy to care for, and they don't often bite.
4. Guinea pigs are most active at night.

Answer Key

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Health Book

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Answer Key

Frog

Frogs are animals that spend part of their life in water. Some frogs live mostly in water. Other frogs live mostly on land. Almost all frogs lay their eggs in or near water. Tadpoles hatch from the eggs. Tadpoles swim and grow in water. As they grow, they change from a tadpole animal to an adult frog.

I discovered a lot of cool frogs are kept in aquariums. The kind of pet frog determines the environment in the aquarium. Some kinds of frogs live in hot water and hot land environments. Others live in all water and cool areas. Still others live in all land environments. Frogs must be fed regularly. Many frogs eat live insects, such as crickets, or frozen worms.



Think and Learn

1. Frogs spend part of their life in water.
2. Tadpoles hatch from frog eggs.
3. Where are tadpoles kept? In aquariums.
4. What do pet frogs eat? Live insects, such as crickets, or frozen worms.

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Compare and Contrast

Read about frogs and toads in the "Frog" storybook. Then, use the Venn diagram and the facts you have learned to compare and contrast these two animals.



Think and Learn

1. What are two differences between frogs and toads? Frogs have long powerful legs and smooth moist skin. Toads have short legs and bumpy dry skin.
2. What are two similarities between frogs and toads? Both are amphibians.


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Classification Systems

Scientists divide up living things into major groups. Then they divide these major groups into smaller groups. And they divide the smaller groups into still smaller groups. This is called a classification system.

Your school uses a classification system. (a) The whole school system includes all the schools in your area. High schools, junior high or middle schools and elementary schools make up the school system. You go to school in a certain elementary school. This is in a certain class within your school.



Think and Learn

1. Scientists use a classification system to divide living things into major groups and smaller groups.
2. What are the different kinds of schools that make up your school system? Elementary, middle schools and elementary schools.
3. What are elementary schools divided into? Classes.


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Classifying Animals

All six major animal groups include the several different kinds of animals of each. Living things make up several major groups. Scientists call these major groups kingdoms. Two of the kingdoms of living things are the Plant Kingdom and the Animal Kingdom. The Animal Kingdom contains all the animals in the world.

Scientists divide each kingdom into large groups called phyla (FEE-luh). Each phylum then turns to divided into smaller groups called classes. Each class contains smaller groups called orders. In this way, scientists classify all living things on Earth.



Think and Learn


1. What do scientists call the major groups of living things? Kingdoms.
2. What are two kingdoms of living things? Plant Kingdom and Animal Kingdom.
3. Kingdoms are divided into large groups called phyla.
4. Scientists divide phyla into classes.

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Classifying Vertebrates

Animals that have backbones are called vertebrates. (VER-ti-brayts). Scientists classify vertebrates into five major groups called classes. The five major classes of vertebrates are shown below. Write the correct class name under the picture. Then, color each of the vertebrates.



Think and Learn

1. What are the five major classes of vertebrates? Bird, mammal, amphibian, reptile, fish.
2. What are two differences between a bird and a mammal? Birds have feathers and lay eggs. Mammals have hair and give birth to live young.
3. What are two differences between a fish and an amphibian? Fish live in water and breathe with gills. Amphibians live on land and in water and breathe with lungs.

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Backbones

Animals with backbones are called vertebrates. Each skeleton below shows a different class of vertebrate. Color the backbone in each skeleton. Then, write the class below each animal.



Think and Learn

1. What are the five major classes of vertebrates? Bird, mammal, amphibian, reptile, fish.
2. What are two differences between a bird and a mammal? Birds have feathers and lay eggs. Mammals have hair and give birth to live young.
3. What are two differences between a fish and an amphibian? Fish live in water and breathe with gills. Amphibians live on land and in water and breathe with lungs.

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Answer Key



Classy Vertebrates

Scientists group the vertebrates into five main classes. Write the name of the vertebrate class for each picture.

reptile amphibian fish mammal
 reptile bird mammal amphibian
 mammal bird fish bird

Answers and details: 276

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Animals With Backbones

Vertebrates are animals that have backbones. There are five main classes of vertebrates. Read the characteristics listed in the second column. Then, write the name of the class in the first column. Write an example of each class in the third column.

class	characteristics	example
fish	live in water breathe with gills	trout
amphibians	live partly in water and partly on land breathe with lungs in water	toad
reptiles	live on dry land breathe with lungs	turtle
birds	have feathers and wings breathe with lungs	hawk
mammals	only animal with hair and young with milk	bear

Answers and details: 277

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Parts of a Fish

Fish make up one class of vertebrates. There are many different kinds of fish. They vary greatly in size and shape. Most fish have certain features in common. However:

- Fluoride is placed inside other animals with a mouth. They use it when they're going with their teeth. Fish breathe water using through structures called gills on the sides of their heads.
- The bodies of fish are covered with bony scales. Scales make fish smooth on the outside and help their swim easily through the water. Fish move through the water by using their fins. They have several body fins. The tail fin helps them move fast and in the direction they want to go.

Think and Learn

1. Fish use gills to breathe underwater.
2. What do fish use their teeth for? to move through the water.
3. Do all fish look alike? No, they vary in size and shape.

Answers and details: 278

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Parts of a Fish

Label the parts of the fish.

eye scales
 gill mouth body fin tail fin

Answers and details: 279

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Life Cycle of a Frog

Frogs are amphibians. They begin their lives as though they were fish but on land. Like land animals as adults, frogs pass through stages during their lives. The series of stages in the life of an animal is called its life cycle.

A frog's life cycle begins when an adult frog lays a mass of eggs in a pond or stream. Each egg hatches one baby frog called a tadpole. A tadpole is like many eggs. Like a fish, it has a tail, and it breathes underwater through gills. As the tadpole grows, it gradually grows legs and begins to lose its tail. Its gills slowly develop into lungs for breathing air on this stage. The animal is called a tadpole frog.

A tadpole frog gradually develops into a young frog. A young frog lives in water and on land. It has legs, lungs and no tail. The young frog grows to become an adult frog. The life cycle begins again when a mother adult frog lays a mass of eggs in water.

Think and Learn

1. A frog is called a tadpole when it has a tail and breathes through gills.
2. When a tadpole becomes a frog, it grows legs and develops lungs. What does it lose? tail and gills
3. The series of stages in the life of an animal is called its life cycle.

Answers and details: 280

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Life Cycle of a Frog

Label the steps in the life cycle of the frog.

egg mass tadpole frog young frog adult frog

Answers and details: 281

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Answer Key

2

Parts of a Rattlesnake

Rattlesnakes are poisonous snakes. When they bite an animal they want to eat, they kill it with a poison called venom. Rattlesnakes alert their victims as a warning by vibrating their tails. When they open their mouths wide, they show yellow fangs on the sides of their heads. When they strike their prey, they use the fangs to pierce the animal's skin. The rattle makes a loud rattling sound.



Flaps and Loops

1. A rattlesnake stores its poison in a venom pit.
2. A rattlesnake wounds its victims with its animal through its fangs.
3. A rattlesnake strikes its prey with its fangs.
4. When a rattlesnake is about to bite, it makes a noise with a rattle at the end of its tail.

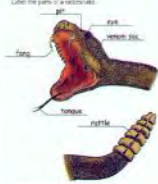
Answer and Review 282

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2

Parts of a Rattlesnake

Label the parts of a rattlesnake.



fang eye venom pit pit tongue rattle

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2

Parts of a Bird

Scientists and bird watchers use special terms to describe a bird. These terms can help you notice the different parts of a bird so that way you can begin to tell birds apart and identify different ones.

- A bird's mouth part is called its beak. Above the beak are its eyes. The area on the top of the head is called the crown. The bird's neck area is called its throat. The chest area of a bird is called its breast. A bird also has a back and a belly. Look as you do.
- Feathers are important for a bird. They protect the bird from heat, wind and water, and they allow the bird to fly. The feathers that cover the outside of a bird are called contour feathers. The long, pointed feathers on the wings are flight feathers. A bird's tail feathers help both in flying and in landing.

Think and Learn

1. The chest area of a bird is called its breast.
2. The top of a bird's head is called the crown.
3. What are the long contour feathers at the end of the wing called? Flight feathers.


Answer and Review 284

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2

Parts of a Bird

Label the parts of a bird.



contour feathers flight feathers crown eye back breast tail feathers belly

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285

2

Bird Beaks

Bird beaks vary greatly in form, shape and size. By looking closely at a bird's beak, you can often tell what kind of food that bird eats. Some birds feed on small animals, while others feed on seeds. Their beaks are different because they are used differently. Hawks, for example, have a beak made for tearing the meat of small animals such as mice. The tiny hummingbird has a beak made for sucking liquid from flowers.

Cardinals have a strong beak good for cracking seeds. Their flying hawks have small beaks made for catching insects. Robins have pointed beaks for swallowing worms. Woodpeckers have strong beaks and sharp for pecking holes in wood as they look for insects.

Many water birds also have different kinds of beaks. A pelican has a large beak made for scooping up fish. An albatross has a sharp beak good for catching fish that swim by.

Write how each bird uses its beak.



hawk tears the meat of small animals cardinal cracks open seeds


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2

Bird Beaks

Write how each bird uses its beak.



hawk tears up fish woodpecker pecks holes in trees to find insects

cardinal catches flying insects pelican skips worms in ground

albatross skips fish in water woodpecker pecks holes in trees to find insects

282

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Answer Key

Feathered Friends' Feet

Just as a bird's nose can tell you what it eats, a bird's feet can tell you many things about its habits or home. Think about what you already know about the birds below, then draw one of these birds on their feet in a special way!

owls for perching on branches

monkeys for climbing

birds for swimming

birds for catching small animals

birds for wading through mud

Use your drawing skills to draw a bird on its feet in a special way. Use the drawing to show what the bird does.

288

Strangers in the Night

It's much easier to identify a bird when you can see its color, size and shape. At night, however, it is difficult to see. Identify these birds just by their shapes or silhouettes.

blue jay **owl** **crow** **heron**

duck **bird** **rabbit** **cardinal**

owl **crow** **hawk** **hummingbird**

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What's a Mammal?

When you think of an animal, you probably think about a mammal. Mammals live in every part of the world. They range from tiny mice to the largest animals on Earth, the whales. Mammals include dogs, cats, cows, bees, kangaroos, raccoons, snakes, elephants, dolphins, and many others. Human beings are also mammals.

Mammals are the only animals with hair. Any animal with hair is a mammal. Even whales have a few hairs on their body. Most mammals are covered with hair. The hair keeps the body warm and dry. When mammal babies are born, the mother looks after young with love for long. No other animals feed their young with milk.

Mammals have large well-developed brains compared with other animals. These large brains make mammals very intelligent animals.

Think and Learn

- Mammals have large well-developed _____ **brains**
- The largest mammal on Earth is the _____ **whale**
- How does hair protect a mammal? **Hair keeps a mammal warm and dry.**
- Many mammals get _____ **milk** from their mother's body.


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290

What's a Mammal?



Think and Learn

- Look at the picture above. How do you know the mother is a mammal? **It has hair on its body.**
- In the picture above, what are the babies doing that only young mammals do? **They are drinking milk from their mother.**

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The Mammal With Wings

Bats are the only mammals that can fly. Some scientists call guile, but bats really fly like birds. They can fly because they have wings.

A bat wing is made of a thin layer of skin called a wing membrane. This skin stretches between the long digits on a bat's hands. The thumb is the only finger not attached to the wing membrane. On these bats, the wing membrane also stretches between the hands and the legs. It even stretches across the tail between the legs, which bats use their wings, they can fly.

Bats fly mostly at night, when they have flying insects. They can find insects in the dark by using their large sensitive ears. During the day most bats sleep by hanging upside down.

Think and Learn


- Bats are the only mammals that can _____ **fly**
- A _____ **wing membrane** stretches between a bat's fingers.
- When do bats hunt for food? _____ **at night**
- Bats sleep where their heads are facing with their _____ **ears**

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292

The Mammal With Wings

Label the parts of a bat.



Think and Learn

- Bats are the only mammals that can _____ **fly**
- A _____ **wing membrane** stretches between a bat's fingers.
- When do bats hunt for food? _____ **at night**
- Bats sleep where their heads are facing with their _____ **ears**

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Answer Key

Animals Without Backbones

Animals that have a backbone are called vertebrates. Animals without a backbone are called invertebrates. There are many more invertebrates than vertebrates. More than nine out of ten animals on Earth are invertebrates.

The many different kinds of invertebrates vary greatly in shape and size. They have only one thing in common. None have a backbone. Some, such as insects and lobsters, have a hard covering on the outside called an exoskeleton. Clams and snails have shells around their soft bodies. Other invertebrates, such as sponges and jellyfish, have no hard covering or shell.

What are some invertebrates you have seen? sponges, jellyfish, earthworms, caterpillars, octopuses, starfishes, spiders, lobsters and insects are all invertebrates.

Think and Learn

1. Animals without a backbone are called invertebrates.
2. Insects have an exoskeleton on the outside of their body.
3. What are two invertebrates that have no outer covering or shell? sponges and jellyfish.

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Animals Without Backbones

Write whether each animal is a vertebrate or an invertebrate.

<u>invertebrate</u>	<u>invertebrate</u>	<u>invertebrate</u>
<u>vertebrate</u>	<u>invertebrate</u>	<u>vertebrate</u>
<u>vertebrate</u>	<u>invertebrate</u>	<u>invertebrate</u>

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Kinds of Insects

Write the name of each insect on the line.

<u>grass beetle</u>	<u>moth</u>	<u>water bug</u>
<u>dragonfly</u>	<u>praying mantis</u>	
<u>housefly</u>	<u>dog flea</u>	<u>wasps</u>

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Spiders and Insects

Both spiders and insects are invertebrates. But spiders are not insects, though they people think so. If you look closely at a spider and an insect, you can see how different they are.

An insect has three main body parts. The head is at the front. The chest is in the middle. The abdomen is behind the chest. Most insects have wings attached to the chest. Insects also have six legs attached to the chest, three on each side.

A spider has two main body parts. The head and chest together make up one part. The abdomen is behind. A spider has eight legs attached to the head and chest parts, four on each side. Spiders do not have wings.

Think and Learn

1. Insects and spiders are both invertebrates.
2. An insect has three main body parts.
3. A spider has two main body parts.
4. How many legs does an insect have? six
5. How many legs does a spider have? eight

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Spiders and Insects

Label the parts of the insect and the spider.

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Parts of a Honeybee

A honeybee is a flying insect. Like all insects, it has three main body parts. From front to back, it has a head, a chest, and an abdomen. The four wings are attached to the chest. Six legs—three on each side—are also attached to the bee's chest.

A bee senses its surroundings through its antennae and its eyes. The antennae are on the front of the head. A bee senses touch and smell with them. A bee also has several eyes on its head. The large eyes on either side are called compound eyes. A compound eye is made of many smaller eyes and looks in many directions.

A honeybee has a stinger at the end of its abdomen. The stinger is one way a bee protects itself.

Think and Learn

1. What are the three main body parts of a bee? head, chest, abdomen
2. A bee has two large compound eyes.
3. A bee defends itself with its stinger.
4. A bee senses smell and touch with its antennae.

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Answer Key

1

Parts of a Honeybee

Label the parts of a honeybee.

compound eye wings abdomen head thorax chest

1. antenna
2. antenna
3. antenna
4. antenna
5. antenna

301

2

Life Cycle of a Monarch

Monarchs' instars are beautiful insects. The monarchs you see flying from flower to flower are all adults. During a monarch's life cycle, its body changes stage from a voracious caterpillar to a coiled winged insect. This change is called metamorphosis and it takes 10 days.

The life cycle of a monarch begins when an adult lays eggs on a leaf. A caterpillar, which looks like a worm, hatches from each egg. The caterpillar grows as it eats leaves and other food, which it grows large enough. The caterpillar begins weaving itself in a silk cocoon called a pupa. Once it changes from caterpillar. For a time, an adult monarch butterfly feasts on nectar out of the cocoon. Metamorphosis is complete.

Think and Learn

- The great change in body shape that happens during a monarch's life cycle is called metamorphosis.
- A monarch egg hatches as a caterpillar.
- The pupa is wrapped inside a cocoon, made of silk.
- What comes out of a cocoon? Butterfly.

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3

Life Cycle of a Monarch

Label the steps in the life cycle of a monarch.

egg caterpillar pupa in a cocoon adult butterfly

1. egg
2. caterpillar
3. pupa in a cocoon
4. adult butterfly

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4

Parts of a Clam

Clams are invertebrates that live in water. A clam shell, made of the animal's soft body. Clams can move around by using a muscle called a foot. They stick the foot out of the shell and push against a hole in ocean floor.

Clams eat and breathe by pulling water inside their shells through a tube called a siphon. Sometimes, clams bury themselves in sand for protection. To eat, they extend a siphon up to the top of the sand and suck in water.

Most of the soft body inside the shell is called the muscle. The shell is attached to the muscle. When water comes through one siphon, it passes through the clam's gills. The gills catch oxygen and take it out from the water. The water then leaves the animal through the second siphon.

Think and Learn

- A shell burrheads and protects a clam.
- A clam moves by using its foot.
- How does water flow into the clam?
Through one of the siphons.
- The clam's gills collect oxygen and food from water.

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5

Parts of a Clam

Label the parts of a clam.

shell mantle siphon foot gills

1. shell
2. mantle
3. siphon
4. foot
5. gills

305

6

Animal Adaptations

Each kind of animal has characteristics that allow it to survive in its environment. For example, a fox has gills for breathing underwater. If a fox had legs like a rabbit, it could not survive underwater. Any characteristic that helps an animal survive in its environment is called an adaptation. A dog has four legs.

Animals are adapted to their environment through their body structure. Some animals have wings to fly through the air. Others have claws to help them dig the ground. An animal's body may fit its environment. It is to live and survive. A good example is a camel's body which allows water. The adaptation makes the camel well-suited to live in a desert, where water is scarce.

Think and Learn


- Any characteristic that helps an animal survive in its environment is called an adaptation.
- A fox's gills are an adaptation that allow it to breathe underwater.
- A fox's legs are an adaptation for flying.

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Answer Key


Animal Adaptations

Describe an adaptation of each animal that helps it live in its environment.



Walrus - adapted for sucking in water while buried in sand.

Polar bear - heavy fat to protect itself from the cold.



Spider - ability to spin a web for catching food.

Duck - webbed feet for swimming through water.

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Animal Defenses

Each of these animals has an adaptation that helps it defend itself from enemies. For each animal, describe its adaptation.



Tortoise - hard shell.

Mole - bad smell.

Bee - stinger.



Mole - bad smell.

Porcupine - painful quills.

Bird - blends in with environment.

Bird - fast flyer.

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Animal Locomotion

One important animal adaptation is the way in which an animal moves around in its environment. The way in which an animal moves is called locomotion.

Complete the table by writing a real-world description of each animal's main method of locomotion. Then, name the body part used to make this movement.

Animal	Method of Locomotion	Body Part Used to Move
rabbit	running	legs
fish	swimming	fins
clown	dragging	feet
dragonfly	flying	wings



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Food Chains

Animals need energy to stay alive. They get this energy by eating food. Some animals eat plants. Some eat other animals. And some eat both plants and other animals. Think of all the living things that feed on one another in an environment. This is called a food chain. Each living thing in a food chain is a "link" in the "chain." The energy of food passes from one living thing to another through the food chain.



The food chain shown on this page begins with underwater plants as a pond. The plants make up the first link in the food chain. A fish eats the plants. The fish is the second link in the food chain. Finally, the eagle swoops down and catches the fish. The eagle becomes the last link in this food chain.

Think and Learn

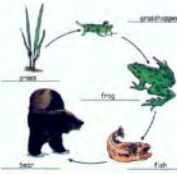
- What one of the living things that feed on one another in an environment called? food chain
- Each plant or animal in a food chain is one link in the chain.
- What kind of living thing always begins a food chain? plants

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Food Chains

The living things in one food chain are shown below. Write the name of each on the lines.



plant → **grasshopper** → **frog** → **fish** → **bear**

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Find the Missing Link

Write the name of the missing link in each food chain. Then draw the missing link above the word.



1. snake → rabbit → wolf

2. fox → mouse → hawk

3. plants → snake → snake → owl

4. snake → dragonfly → fish → hawk

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Answer Key

AMERICAN ANIMALS

What's Its Name?

For each family group, label the members with the correct names.

buck _____ bull _____
 doe _____ cow _____
 fern _____ calf _____

duck _____ rooster _____
 duckling _____ hen _____
 _____ chick _____

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AMERICAN ANIMALS

How Long Does It Live?

Write how long each of these animals lives.

blue fish _____ pig _____ mouse _____
 11 years 5 years 1 year

ostrich _____ horse _____ box turtle _____
 40 years 20-30 years 80 years

Think and Learn

- Which lives longer, a tiger or a crocodile? _____ crocodile
- Which lives longer, a mouse or a goldfish? _____ goldfish
- Suppose you had two pets, a dog and a box turtle. Which pet could live a longer life? _____ box turtle

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AMERICAN ANIMALS

Write About It

Choose an interesting animal that you have read about. Draw a picture of the animal. Then, write a paragraph that tells some interesting facts about the animal you chose.

Answers will vary.

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