WELCOME!

On behalf of Splash! Publications, we would like to welcome you to *The Animal Kingdom*, one of nine lessons in our *Florida Animals Unit*. This lesson was designed by teachers with you and your students in mind.

The Format

Our goal is a lesson that you can use immediately. No comprehension questions to write, activities to create, or vocabulary words to define. Simply make copies of the lesson for your students and start teaching.

The Vocabulary

Our lessons feature words in bold type. We have included a Glossary to help students pronounce and define the words. Unlike a dictionary, the definitions in the Glossary are concise and written in context. Remember, we're teachers! Students will be exposed to these vocabulary words in the comprehension activities.

Students will be responsible for filling out and studying their vocabulary cards. You may want to have students bring in a small box for storing their vocabulary cards. We don't have to tell you that incorporating these words into your Reading and Spelling programs will save time and make the words more meaningful for students.

The Lesson Plan

Before reading The Animal Kingdom, students will:

- complete Vocabulary Cards for ***burrowing, exoskeletons, flexible, internal, perch, predators, squid.***

After reading The Animal Kingdom, students will:

- answer The Animal Kingdom Reading Comprehension Questions.
- create and play the game Adaptation Match-Up.

Note: The answers to all activities and quizzes are at the end of the lesson.

Other Lessons in our Florida Animals Unit

Vertebrates, Invertebrates, Florida's Small Mammals, Florida's Large Mammals, Florida's Birds, Florida's Fish and Reptiles, Florida's Amphibians, Florida's Arthropods.

Vocabulary Card

word: _____

definition: _____

_____

Vocabulary Card

word: _____

definition: _____

_____

Vocabulary Card

word: _____

definition: _____

_____

THE ANIMAL KINGDOM

There are many different types of animals in the world. Animals come in all shapes, sizes, and colors. They eat many types of food, live in different places, sleep in strange positions, and develop at different rates.

Animals also move around in various ways. Some creep and crawl on the ground, while others swim through the world's oceans or soar high in the sky. All of these creatures are part of more than one billion animals in Earth's animal kingdom.

VERTEBRATES AND INVERTEBRATES

The animal kingdom can be divided into vertebrates and invertebrates. Vertebrates are animals with backbones. They have skeletons inside of their bodies made of bone. Some of the most common vertebrates are mammals, birds, reptiles, amphibians, and fish. Humans are also vertebrates. We have a skeleton that's strong enough to help us stand up straight, yet **flexible** enough so we can move.

Invertebrates are animals without backbones. Invertebrates don't have **internal** skeletons made of bone. They may have fluid-filled skeletons like jellyfish and worms, or hard outer **exoskeletons** like crabs and lobsters. Other common invertebrates include spiders, insects, and ocean animals like starfish, oysters, **squid**, and octopus.

WARM-BLOODED ANIMALS

All animals in the animal kingdom are either warm-blooded or cold-blooded. The temperature of an animal's blood depends on its body temperature. Unless they are sick, warm-blooded animals, like mammals and birds, are able to keep the inside of their bodies at a constant temperature. They do this by making heat for themselves when they are in a cold place and cooling themselves down when the temperature outside gets hot.

HUMAN BEINGS ARE WARM-BLOODED

To make heat for themselves, warm-blooded animals turn the food they eat into energy. Warm-blooded animals also use layers of fat, feathers, hair, or fur to help them stay warm.

To stay cool, warm-blooded animals sweat or pant. They can also cool off by moving to a shaded area or by getting wet. Do you ever wonder why birds fly south for the winter? They are smart enough to move from the cold winter weather to a place where they can use less energy to stay warm.

Cold-Blooded Animals

Reptiles, amphibians, fish, insects, and spiders are examples of cold-blooded animals. Cold-blooded animals cannot make their own body heat. Their body temperatures depend on the temperatures around them. If the air is cold, the body temperatures of cold-blooded animals become cold. When it is sunny and hot, cold-blooded animals become hot. To raise their body temperatures on a cool day, cold-blooded animals lay in the sun, hide underground, or crowd together to keep warm. When it's hot, cold-blooded animals lower their body temperatures by searching for shade, opening their mouths wide, or **burrowing** into cool soil.

Animal Adaptations

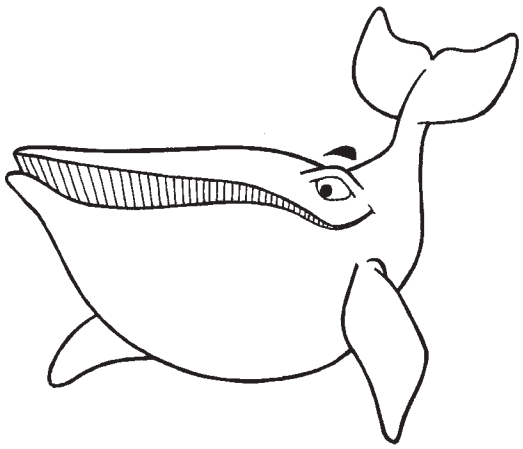
Adaptations help animals survive in the world around them. There are two types of adaptations in the animal kingdom: structural adaptations and behavioral adaptations.

Structural Adaptations

Structural adaptations are body parts or body coverings that help animals survive.

Whales have blubber to help keep them warm in the ocean. Giraffes have long necks so they can stretch for leaves in tall trees that other animals can't reach.

Birds have claws and muscles that are designed to lock and hold onto a **perch**, even when they are sleeping.



Behavioral Adaptations

Behavioral adaptations are things that animals do to survive. Lizards play dead so their enemies will not attack them. Squirrels store nuts for the winter. Birds fly south to escape the cold northern winters. Masked crabs bury themselves in sand to avoid the water of high tide.

Fast Facts

- American wigeons are ducks that have learned to steal food right out of the bills of other birds when they can't find enough food to eat.
- Snowy egrets are small white birds that live and hunt near water. They can stretch out their wings to create shade and fool the fish below. When the fish swim for the shade, snowy egrets are able to snatch them up with their long beaks.
- Whiskers are structural adaptations that help animals feel their way around tight spots. Whiskers also sense movement of enemies or other animals they may be interested in eating.

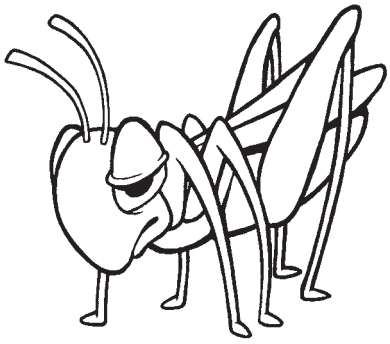
Mimicry

Have you ever been tricked by something that was fake? Sometimes we think shiny jewels are diamonds, but they are really just pieces of glass. Maybe that prized baseball card you think was signed by your favorite player is really a fake. Some copies look so real, we don't even know they are fakes.

Animals play tricks too. If insects or other less powerful animals can trick **predators** into thinking they are different animals just by the way they look or act, they just might live a little longer.

Mimicry is an adaptation that fools other animals with sounds, behaviors, or colors. Monarch butterflies, for example, are beautiful, but not very tasty for other animals to eat. Viceroy butterflies, on the other hand, are beautiful and yummy. Fortunately, viceroy butterflies are able to "mimic" monarch butterflies with their body colors. Their enemies can't tell the two butterflies apart. Predators won't even take the chance of biting into a viceroy butterfly for fear of being tricked into eating a bitter tasting monarch. Mimicry helps viceroy butterflies stay alive.

Caterpillars are cute and fuzzy, but not very scary, right? Through mimicry, hawk moth caterpillars are able to use hidden suits of armor to protect themselves. When afraid, hawk moth caterpillars are able to mimic snakes. Animals that are afraid of snakes stay far away from hawk moth caterpillars.



Grasshopper

Camouflage

Camouflage is a structural adaptation that helps animals survive just by using their appearance or color. Animals that use camouflage look like things in their environment.

Through camouflage, some animals can look like leaves, twigs, rocks, or even the background. Grasshoppers are able to blend into rocks or leaves they are standing on. A well camouflaged grasshopper is very difficult to spot.

Polar bears have white fur to hide themselves from enemies in the white snow. Even better, chameleons (kuh•MEAL•yuns) can change their colors to blend in with their surroundings. Katydids can take on the appearance of leaves they are standing on or sticks they are walking across.

Fast Facts

- For protection, some flies can mimic bees. Birds know that if they attack bees, they will be stung. Looking like bees keeps these flies from being eaten.
- Jumping spiders are favorite snacks for many animals. They are able to protect themselves by mimicking ants. This allows jumping spiders to get "lost in the crowd" and avoid being eaten.
- Stick insects are the masters of camouflage. Their bodies are the color and shape of plants. During the day, stick insects stay completely still, putting their front legs in front of their heads to make themselves look like part of the plants they are hanging onto.

Name _____

The Animal Kingdom

Directions: Read each question carefully. Darken the circle for the correct answer.

1 Vertebrates are –

A animals with backbones

B animals that eat meat

C animals without backbones

D animals with exoskeletons

2 Invertebrates are –

F animals with backbones

G animals that eat meat

H animals without backbones

J all animals in the animal kingdom

3 Which types of animals are <u>not</u> vertebrates?

A Mammals

B Fish

C Worms

D Reptiles

4 All of the following are invertebrates <u>except</u> –

F jellyfish

G starfish

H spiders

J humans

5 After reading about warm-blooded animals, you learn that –

A warm-blooded animals can't make heat for themselves

B warm-blooded animals are always sick

C mammals and birds are warm-blooded

D warm-blooded animals can't get wet

6 Which of the following statements correctly describes cold-blooded animals?

F It's cold outside, so cold-blooded animals use their fur and feathers to stay warm.

G It's warm outside, so cold-blooded animals should remove their jackets to stay cool.

H It's warm outside, so the body temperatures of cold-blooded animals are also cold.

J It's cold outside, so the body temperatures of cold-blooded animals are also cold.

7 Which of the following is an example of a <u>structural adaptation</u>?

A Birds fly south for the winter.

B Lizards play dead when enemies approach.

C Giraffes have long necks to reach leaves in tall trees.

D Squirrels store nuts for the winter.

8 Which statement below best describes <u>mimicry</u>?

F Hawk moth caterpillars can act like snakes.

G Polar bears have white fur to hide themselves in the snow.

H Grasshoppers blend into rocks or leaves.

J Chameleons can change their color.

READING

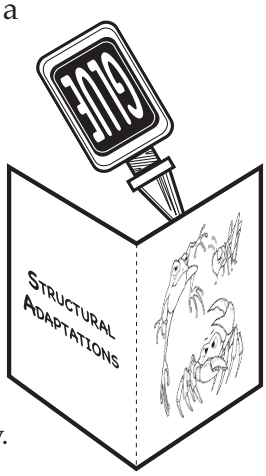
Answers

1	Ⓐ	Ⓑ	Ⓒ	Ⓓ	**5**	Ⓐ	Ⓑ	Ⓒ	Ⓓ
2	Ⓕ	Ⓖ	Ⓗ	Ⓙ	**6**	Ⓕ	Ⓖ	Ⓗ	Ⓙ
3	Ⓐ	Ⓑ	Ⓒ	Ⓓ	**7**	Ⓐ	Ⓑ	Ⓒ	Ⓓ
4	Ⓕ	Ⓖ	Ⓗ	Ⓙ	**8**	Ⓕ	Ⓖ	Ⓗ	Ⓙ

Game: Adaptation Match-Up

The animal kingdom includes many different kinds of vertebrates and invertebrates. Every animal in the kingdom uses adaptations for survival.

In this activity, you will use what you have learned about structural adaptations, behavioral adaptations, camouflage, and mimicry to make and play a game known as *Adaptation Match-Up.*



Making Adaptation Match-Up:

1. Use your scissors to cut apart the 48 *Adaptation Match-Up* cards given to you by your teacher. Cut along the solid black lines. You will use the dotted lines later.
2. Use your coloring pencils to neatly color the pictures on each of the 48 cards.
3. Fold each card in half along the dotted line so that the words are on one side and the pictures are on the other.
4. Glue the blank sides of the two folded halves together. Let the glue dry.

Goal of Adaptation Match-Up:

The goal of *Adaptation Match-Up* is to collect as many pairs as possible. A pair includes a word card (Structural Adaptation, Behavioral Adaptation, Camouflage, or Mimicry), and a card with a description to match.

Setting up the Game:

Shuffle the 48 *Adaptation Match-Up* cards together. Spread the cards (picture side facing up) on the floor or table in a square pattern.

Playing Adaptation Match-Up:

1. The youngest player goes first. The game continues clockwise.
2. On each turn, a player turns over two cards (one at a time). If the player turns up a word card and a matching description, the player gets to keep the pair and take another turn. If the player doesn't turn up a word card and a matching description, both cards must be returned to the floor or table and it becomes the next player's turn.
3. The game continues until all 24 word cards have been correctly matched with their 24 descriptions. The winner is the player with the most pairs.

Sample Pair

Whiskers help animals feel their way around tight spots. Whiskers also sense movement of predators and help animals find food.	**Structural Adaptation**

Adaptation Match-Up Game Cards

Ostriches can't fly, but their thick powerful legs can take them great distances. They only have two toes on each foot for greater speed. Ostriches use their wings to balance and turn while running.

Tree frogs have toe pads on their feet that act like suction cups so they can grip onto slippery surfaces.

Zebra stripes are beautiful to look at, but the stripes offer zebras much-needed protection from lions. Lions are color blind and can't tell the difference between a single zebra and a whole herd.

Whales have blubber to help keep them warm in the ocean. During times when food is difficult to find, whales are able to survive because of this thick layer of fat.

Porcupines use more than 30,000 pointy quills on their backs to defend themselves. The quills are as sharp as needles and very difficult to remove from the victim's skin.

Chipmunks use the pouches in their cheeks to store and carry food. Their pouches stretch so they can carry up to nine large nuts at a time.

Adaptation Match-Up Game Cards

Storks can stand on one leg while stirring the water and mud with the other leg. Stirring up the water forces their prey to come to the surface, where they are quickly captured and eaten.

Penguins share parenting duties. The female builds the nest while the male hunts and eats. After the egg is laid, the male sits on the egg while the female hunts and eats. When the egg hatches, both parents take care of the youngster.

When food can't be found, scorpions are able to slow down their systems, use less oxygen, and live on just one insect per year.

Opossum fool predators by playing dead. They roll over, become stiff, and slow their breathing. After the predators have left, opossum get up and walk away.

Beavers live near rivers, streams, and small lakes. They mark their territories by building piles of mud and spraying the piles with their scents. This keeps other beavers and predators away.

When scared or captured, horned lizards squirt blood from their eyes and fill their lungs with air to make themselves look bigger.

Adaptation Match-Up Game Cards

Some flies are able to look almost exactly like stinging honeybees. Predators can't tell the difference between the two insects. Since predators don't want to take the chance of being stung, they leave the flies alone.

Harmless king snakes protect themselves by looking like poisonous coral snakes. Both are striped with bands of yellow, red, and black. King snakes are also able to act like rattlesnakes by making noise with their tails.

Leafy sea dragons in southern Australia protect themselves from predators and sneak up on prey by looking exactly like leafy seaweed plants at the bottom of the ocean.

Viceroy and monarch butterflies look a lot alike. Monarchs, however, are not very tasty. By looking like monarch butterflies, viceroy butterflies protect themselves from enemies that won't take the chance of biting into a bitter tasting monarch.

South American lanternflies trick predators by using their heads. This is because the heads of South American lanternflies look exactly like the heads of small alligators.

Bird-dropping spiders give off a scent that smells exactly like female armyworm moths. These clever spiders attract and eat male armyworm moths who have been tricked into thinking they have just found females to mate with.

Adaptation Match-Up Game Cards

Crab spiders sitting on sunflowers can be difficult to see. They blend in with the yellow leaves of the sunflowers as they sit and wait for insects to land.

Octopus can change their colors and even make their skin look bumpy like the rocks they are hiding under.

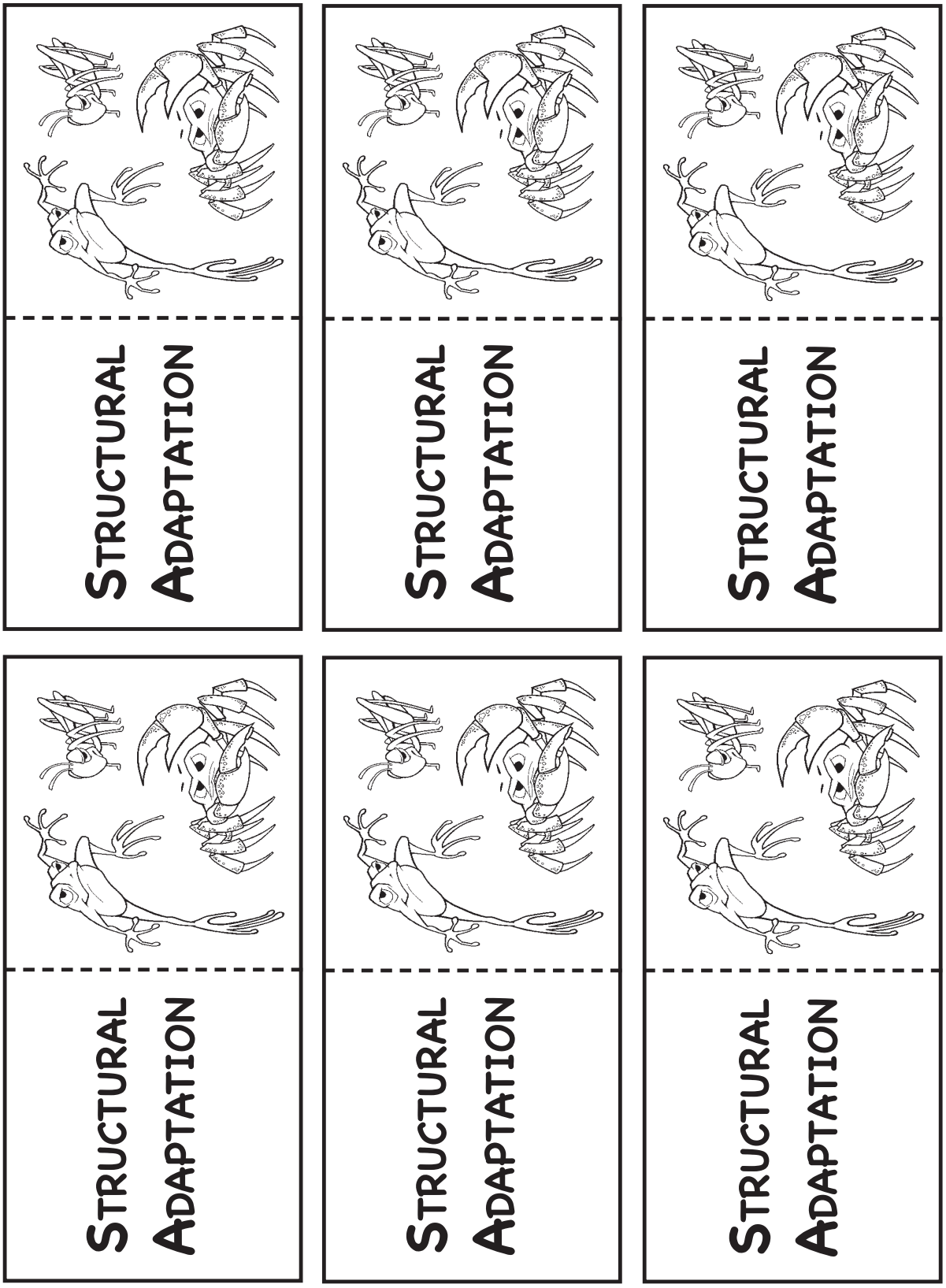
During the day, stick insects stay completely still, putting their front legs in front of their heads to make themselves look like part of the plants they are hanging onto.

Arctic fox spend their winters in very cold areas where their white coats blend in with the snow, hiding them from predators and making it easier for them to sneak up on small mammals.

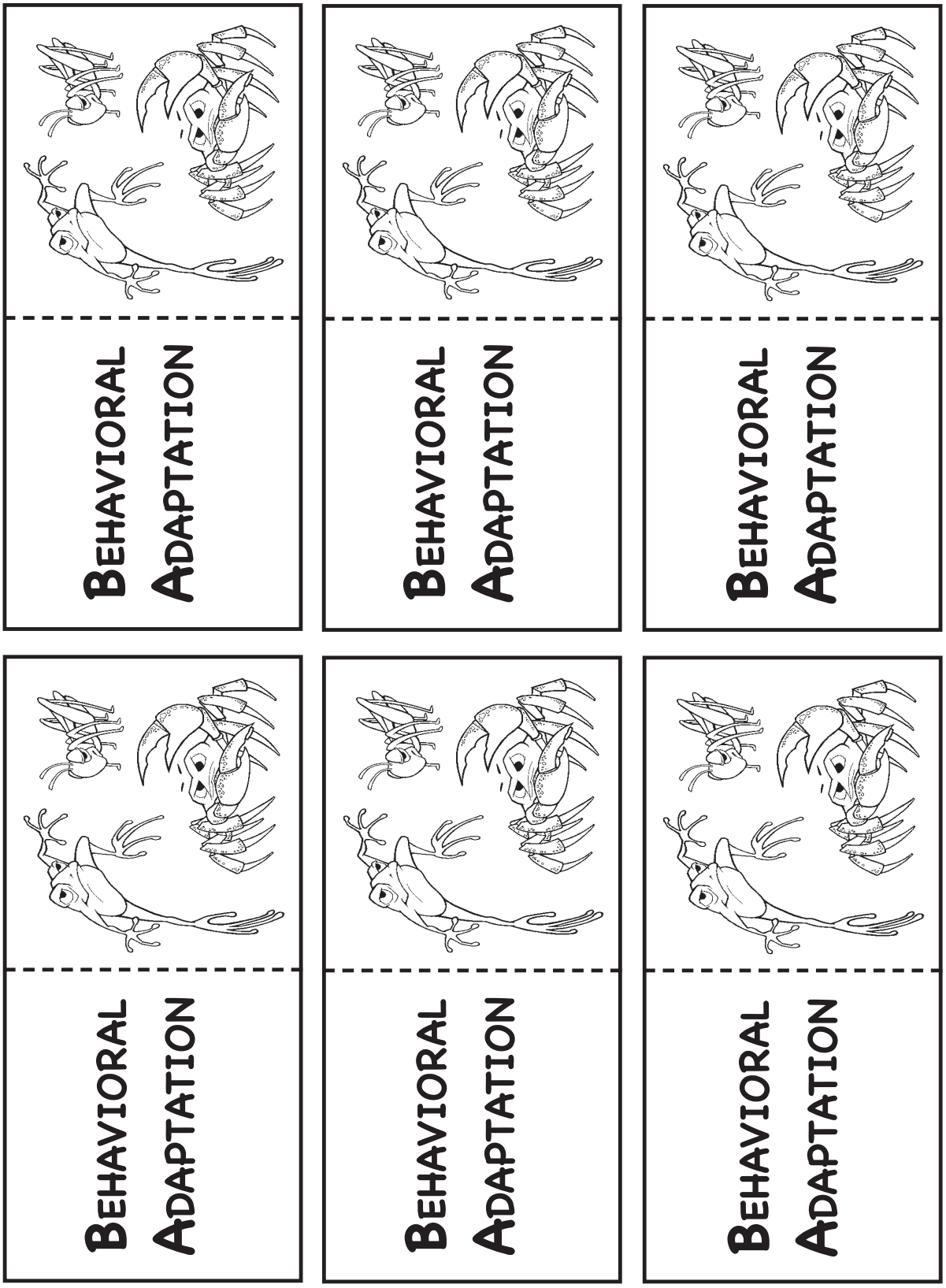
Horned lizards are able to change their colors from light to dark very quickly to match the color of the soil they are standing on.

It is difficult to spot katydids when they are sitting on tomato plants. Katydids are green and their wings look like leaves.

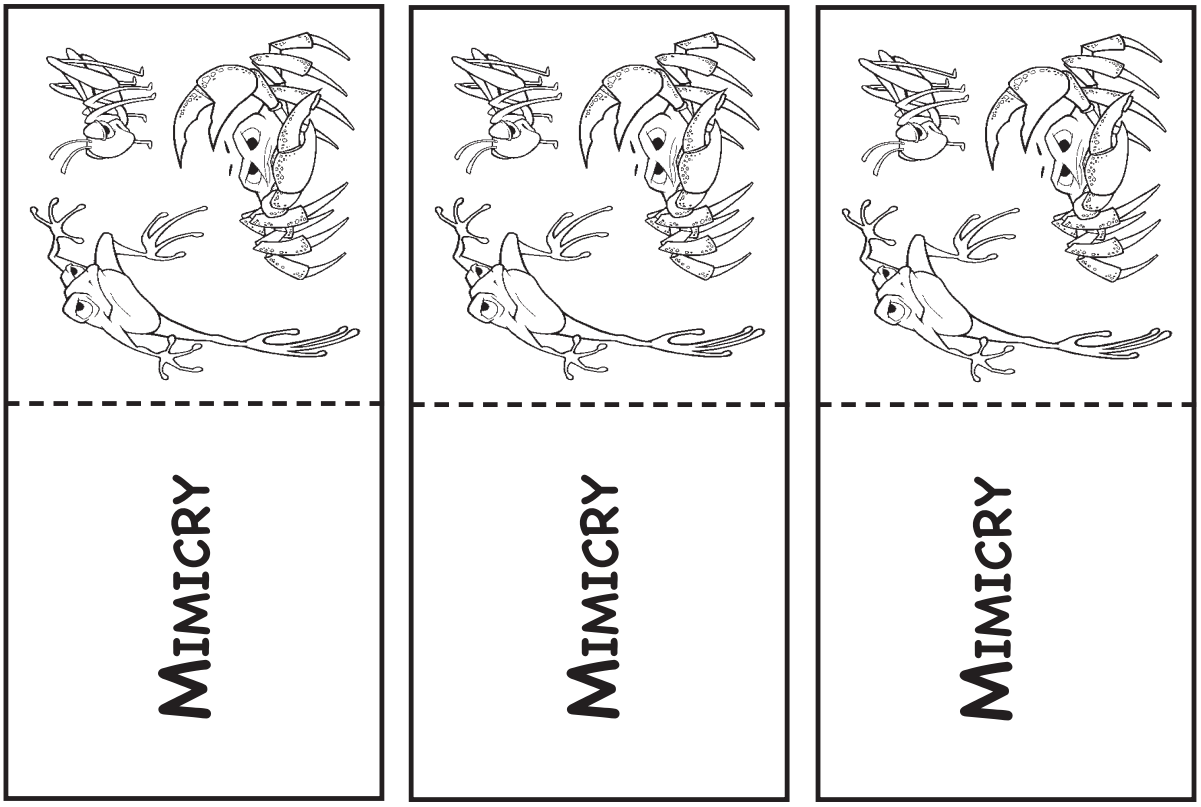
Adaptation Match-Up Game Cards

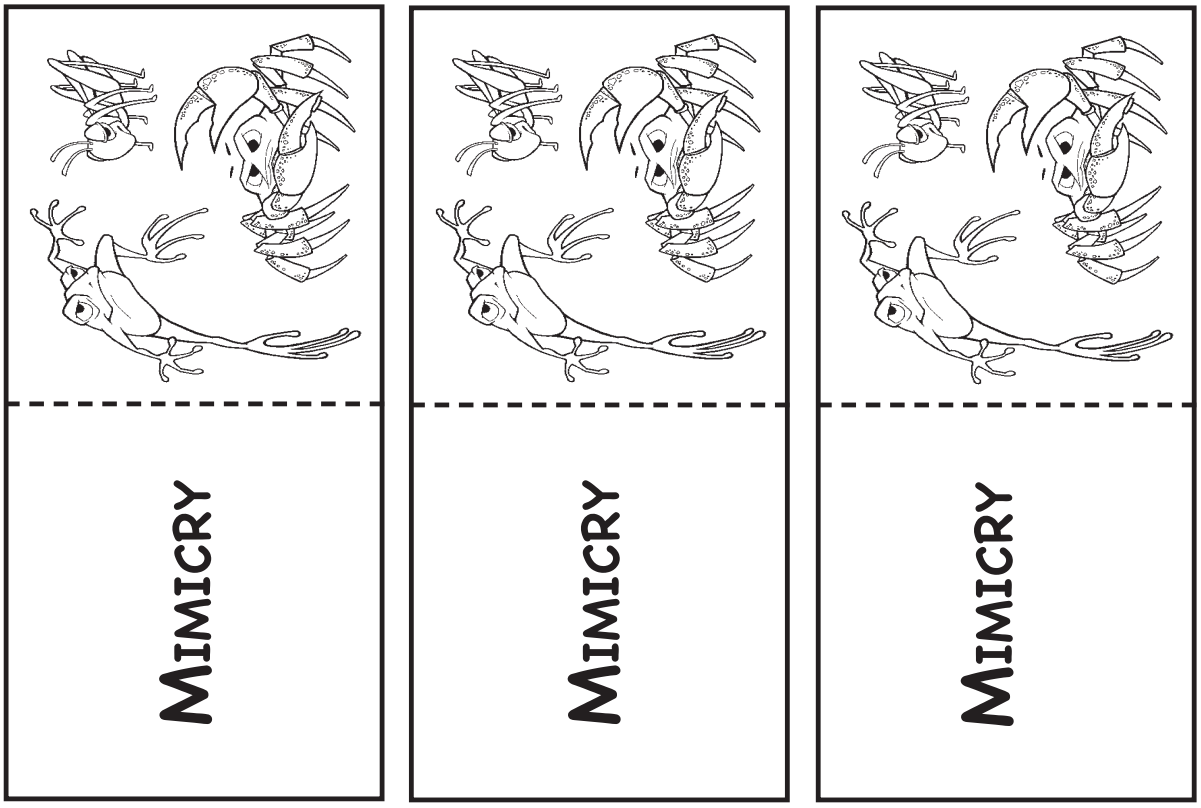


Adaptation Match-Up Game Cards

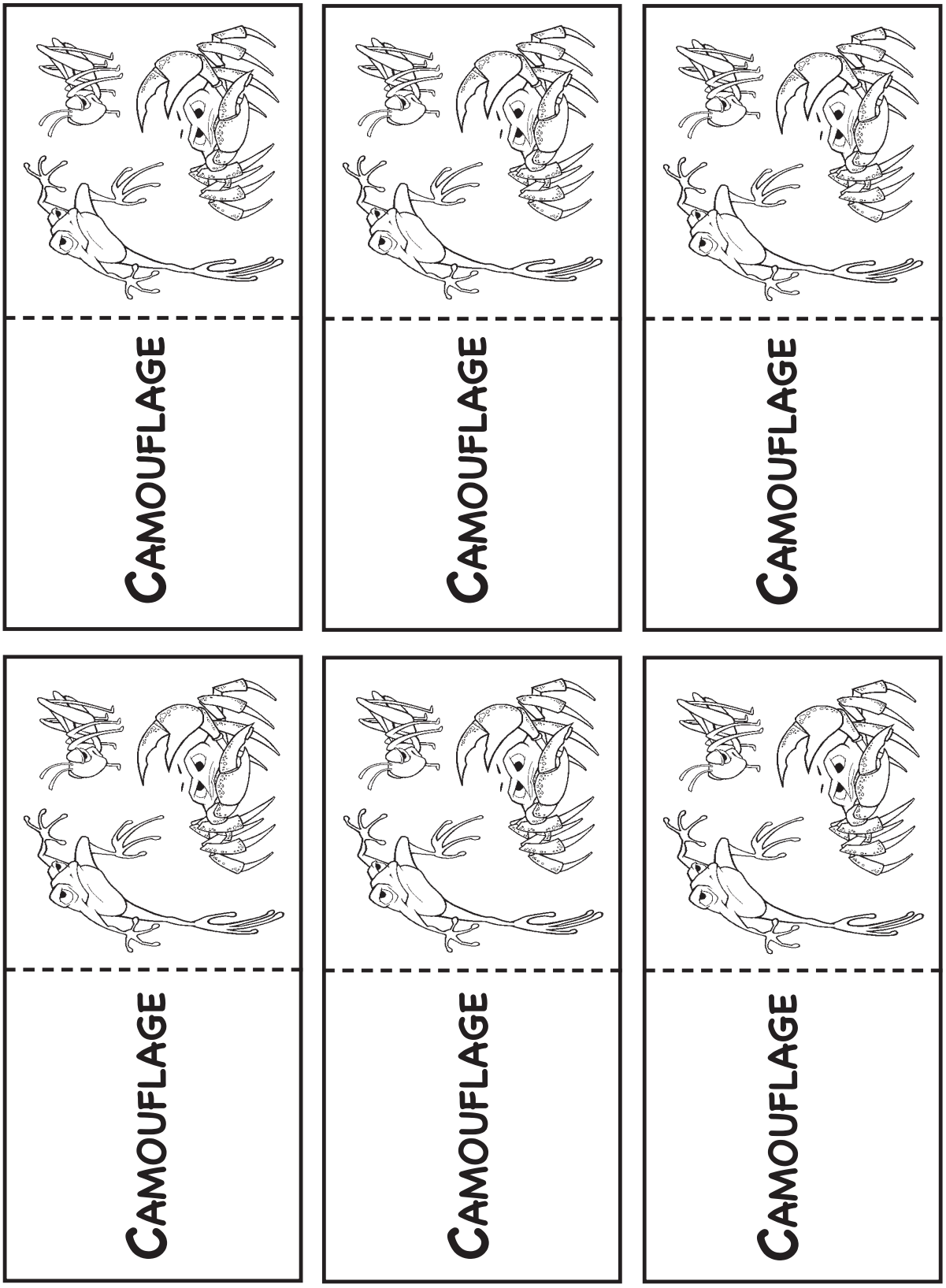


Adaptation Match-Up Game Cards





Adaptation Match-Up Game Cards



Glossary

bur•row•ing digging a hole.

ex•o•skel•e•tons hard outer coverings that protect the bodies of some animals without backbones.

flex•i•ble something that bends easily.

in•ter•nal on the inside.

perch a resting place.

pred•a•tors animals that hunt and eat smaller, more helpless animals.

squid an ocean animal with a long body, ten arms, an internal shell, and a pair of rounded fins.

Answers

Answers to Comprehension Questions

1. A
2. H
3. C
4. J
5. C
6. J
7. C
8. F

Answers to Adaptation Match-Up

Structural Adaptations

Whales have blubber to help keep them warm in the ocean. During times when food is difficult to find, whales are able to survive because of this thick layer of fat.

Porcupines use more than 30,000 pointy quills on their backs to defend themselves. The quills are as sharp as needles and very difficult to remove from the victim's skin.

Chipmunks use the pouches in their cheeks to store and carry food. Their pouches stretch so they can carry up to nine large nuts at a time.

Ostriches can't fly, but their thick powerful legs can take them great distances. They only have two toes on each foot for greater speed. Ostriches use their wings to balance and turn while running.

Tree frogs have toe pads on their feet that act like suction cups so they can grip onto slippery surfaces.

Zebra stripes are beautiful to look at, but the stripes offer zebras much-needed protection from lions. Lions are color blind and can't tell the difference between a single zebra and a whole herd.

Behavioral Adaptations

Opossum fool predators by playing dead. They roll over, become stiff, and slow their breathing. After the predators have left, opossum get up and walk away.

Beavers live near rivers, streams, and small lakes. They mark their territories by building piles of mud and spraying them with their scent. This keeps other beavers and predators away.

When scared or captured, horned lizards fill their lungs with air to make themselves look bigger and squirt blood from their eyes.

Storks can stand on one leg while stirring the water and mud with the other. Stirring up the water forces their prey to come to the surface, where they are quickly captured and eaten.

Penguins share parenting duties. The female builds the nest while the male hunts and eats. After the egg is laid, the male sits on the egg while the female hunts and eats. When the egg hatches, both parents take care of the youngster.

When food can't be found, scorpions are able to slow down their systems, use less oxygen, and live on just one insect per year.

Mimicry

Some flies are able to look almost exactly like stinging honeybees. Predators can't tell the difference between the two insects. Since predators don't want to take the chance of being stung, they leave the flies alone.

Harmless king snakes protect themselves by looking like poisonous coral snakes. Both are striped with bands of yellow, red, and black. Kingsnakes are also able to act like rattlesnakes by making noise with their tails.

Leafy sea dragons in southern Australia protect themselves from predators and sneak up on prey by looking exactly like leafy seaweed plants at the bottom of the ocean.

Viceroy and monarch butterflies look a lot alike. Monarchs, however, are not very tasty. By looking like monarch butterflies, viceroy butterflies protect themselves from enemies that won't take the chance of biting into a bitter tasting monarch.

South American lanternflies trick predators by using their heads. This is because the heads of South American lanternflies look exactly like the heads of small alligators.

Bird-dropping spiders give off a scent that smells exactly like female armyworm moths. These clever spiders attract and eat male armyworm moths who have been tricked into thinking they have just found females to mate with.

Camouflage

Arctic fox spend their winters in very cold areas where their white coats blend in with the snow, hiding them from predators and making it easier for them to sneak up on small mammals.

Horned lizards are able to change their colors from light to dark very quickly to match the color of the soil they are standing on.

It is difficult to spot katydids when they are sitting on tomato plants. Katydids are green and their wings look like leaves.

Crab spiders sitting on sunflowers can be difficult to see. They blend in with the yellow leaves of the sunflowers as they sit and wait for insects to land.

Octopus can change their color and even make their skin look bumpy like the rocks they are hiding under.

During the day, stick insects stay completely still, putting their front legs in front of their heads to make themselves look like part of the plants they are hanging onto.