

4-H

**Natural Resource
Club**



Wildlife Science

Wildlife Science

The 4-H Wildlife curriculum is for youth who enjoy learning about wildlife. Level 1 introduces the basic wildlife groups: mammals, birds, fish, and herptiles. You will learn about the similarities and differences among these groups and then study each one. Level 2 activities will help you use your basic understanding to explore more complex wildlife topics. Level 3 activities are divided into chapters based on how you might use the information you have learned—as a homeowner, resident of a watershed, food and fiber producer (farmer), mayor, teacher, or member of Congress. Level 3 delves deeper into the study of wildlife and can prepare you to be well informed and to study these topics at a college or university.

Indiana 4-H Soil & Water Science manuals

(Order from Purdue's *The Education Store*, www.edustore.purdue.edu)

- Level 1, Grades 3-5, 4-H-1044
- Level 1, Facilitator's Guide, 4-H-1045
- Level 2, Grades 6-8, 4-H-1046
- Level 2, Facilitator's Guide, 4-H-1047
- Level 3, Grades 9-12, 4-H-1048
- Level 3, Facilitator's Guide, 4-H-1049

Invited Speaker Suggestions

- IDNR District Wildlife Biologists, www.in.gov/dnr/fishwild/2716.htm

Resources

- Indiana 4-H Wildlife webpage: www.ydae.purdue.edu/natural_resources/
- IDNR Wildlife webpage: www.in.gov/dnr/fishwild/

Indiana 4-H/FFA Wildlife Habitat Education Career Development Event (CDE) (for high school aged youth, only)

The primary purpose of this event is to increase youth understanding of wildlife ecology and management practices. Several other skills, including team work, oral and written communication, decision making, leadership, and interpersonal social skills will also be enhanced. Youth participate in three activities: *Wildlife Management Practices* (individual event), *Wildlife Challenge* (individual event), and writing a Management Plan [team event (3 or 4 team members)].

You can find more information about the Wildlife Habitat Education CDE at www.ydae.purdue.edu/Natural_resources/career.html. General information about the 4-H/FFA CDEs is available at: www.four-h.purdue.edu/cde/.

Activities

The following activities are from the Level 1 Indiana 4-H Wildlife manual. The new wildlife manuals (2017) help youth study the major vertebrate classes: mammals, birds, fish, and herptiles.

| Page | Activity Suggestions | Materials Needed | Time (min.) |
|---|---|-------------------------|-------------|
| <i>Vertebrate Classes</i> | | | |
| 6-7 | Youth study the major vertebrate classes and try to identify the classes from pictures | Copies of pg 5, pencils | 30 |
| <i>Mammal Traits</i> | | | |
| 9-10 | Youth read about mammal traits, answer questions, and complete word search | Copies of pg 8 | 30 |
| <i>Bird Traits</i> | | | |
| 17-20 | Youth read about bird traits, unscramble trait words, and identify bird beaks and feet. | Copies of pp 15-17 | 30 |
| <i>Sounds Fishy</i> | | | |
| 30-31 | Youth learn about fish traits and complete a crossword puzzle. | Copies of pg 29 | 30 |
| <i>Creeping, Crawling, and Slithering</i> | | | |
| 34-35 | Youth read about reptile traits and complete a chart to indicate which reptiles have specific traits. | Copies of pp 32 | 30 |
| <i>Egg to Tadpole to Frog</i> | | | |
| 38-39 | Youth learn about amphibian metamorphosis and complete a Q&A. | Copies of pg 37 | 30 |

VERTEBRATE CLASSES

What are vertebrates?

INTRODUCTION

The term **wildlife** includes all animals that live in the natural environment but not under the direct control of humans. Level 1 of the 4-H Wildlife Science manual focuses on animals in the **vertebrate** group. Vertebrates are animals with a **backbone**. A backbone consists of a series of bones that connects the animal's skull to its pelvis. Each bone is called a **vertebra**.

Vertebrates are divided into classes. The classes of animals you will learn about are mammals, birds, reptiles, amphibians, and fish. In this activity you will learn the major differences between them.

Animals in the same class share **traits**. Here are some examples of unique traits of vertebrates.

- Mammals have hair.
- Birds have feathers.
- Fish have fins.
- Reptiles have scales.
- Amphibians can breathe through their skin.

GEAR

- Pencil



LET'S DO IT

1. Read the information about vertebrate classes in the introduction.
2. Complete the vertebrate classes table by writing the vertebrate class for the pictures shown in each row.



LET'S CHAT

Share What Happened: What did you learn in this activity? Can you name the five classes of vertebrates you studied?

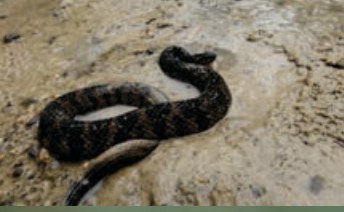

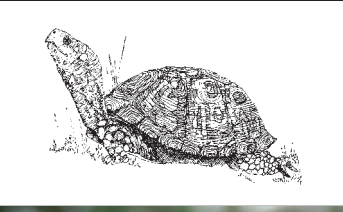











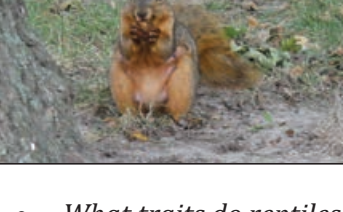
Apply: How could being able to talk about a wildlife group be useful?

Generalize to Your Life: What other groupings can you think of?

| BACKBONES THAT ARE MADE OF VERTEBRA | | | | |
|-------------------------------------|------|------|-----------|---------|
| Mammal | Bird | Fish | Amphibian | Reptile |
| | | | | |

MY NOTES and IDEAS

Write the name of each vertebrate class in the last column for the pictures shown in each row.

| | | | VERTEBRATE CLASS |
|---|---|--|------------------|
|  |  |  | |
|  |  |  | |
|  |  |  | |
|  |  |  | |
|  |  |  | |

Study the wildlife pictures in the table. Look for things that are alike and things that are different. Answer the questions based on what you already know and what you see in the pictures.

- *What traits do birds share?*

- *What traits do fish share?*

- *What traits do mammals share?*

- *What traits do reptiles share?*

- *What traits do amphibians share?*



DID YOU KNOW?

Amphibians and reptiles are often studied together in a group called herptiles. Herpetology is the study of amphibians (including frogs, toads, salamanders, and newts) and reptiles (including snakes, lizards, turtles, tortoises, and crocodiles).



MAMMAL TRAITS

How many animal traits can you list?

INTRODUCTION

Most people think of mammals when they think of wildlife. Wildlife animals live free in the natural environment. They are not under the direct control of humans. You will study mammal traits—those that are unique to mammals, those that are mostly mammal traits, and traits that mammals share with other classes of animals. Here are examples of unique, mostly true, and shared traits.

Unique traits of mammals: Traits of mammals that are not true of other classes of vertebrates:

- All mammals have hair (at some time in their life).
- All female mammals produce milk to feed their young.

Mostly true traits of mammals: Traits that are generally true for mammals but not always true for all mammals:

- Most mammals have ears that stick out. Exception: The dolphin is a mammal but does not have ears that stick out.
- Most mammals give birth to live young. Exception: The platypus is a mammal that lays eggs rather than giving birth to live young.

Shared traits of mammals and some other classes of vertebrates: Traits that are true for mammals and some other classes:

- Mammals are **warm-blooded**, which means they maintain a constant body temperature.
- Mammals use lungs to breathe air.
- Young mammals need to be taken care of to survive.

GEAR

- Pencil or pen



LET'S DO IT

1. Use the information in the introduction to complete the sentences.
2. In the word search puzzle, find and circle or highlight the nine words you used to complete the sentences.



LET'S CHAT

Share What Happened: What did you learn about mammals?

Apply: How can knowing the common traits of mammals help you identify new animals?

Generalize to Your Life: How might knowing the common traits of mammals help you care for a new pet?



LET'S FLY HIGHER

- Make mammal flashcards by finding pictures of mammals and pasting them onto index cards. Write the name of the mammal on the back of the card. Practice identifying each animal by its picture.
- Start a diary of all the wild mammals you have seen. Note when and where you saw them.

COMPLETE THESE SENTENCES

Something that makes an animal different or the same as another animal is a _____.

An animal that has a backbone is known as a _____.

Warm-blooded animals control their body _____.

Mammals breathe air using _____.

Each bone in a backbone is called a _____.

Female mammals feed their young _____.

All mammals grow _____ on their bodies.

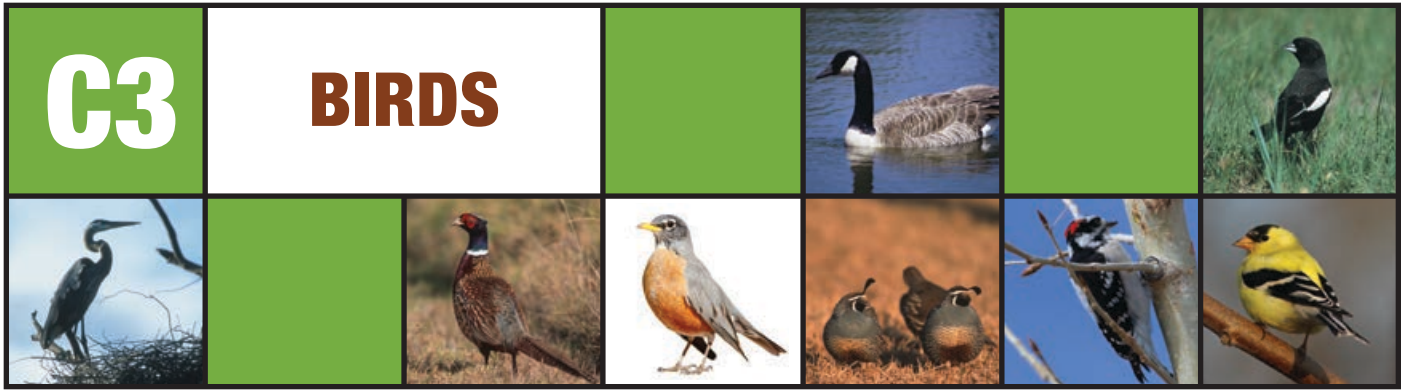
Mammals do not lay _____ but have live births.

Wildlife animals live in the _____ environment and not under the direct control of humans.

WORD SEARCH

Find and circle or highlight the nine words you used to fill in the sentences.

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



BIRD TRAITS

What traits do all birds share?

INTRODUCTION

Birds have several traits that no other classes have (with a very few exceptions).

- All birds have feathers and wings.
- All birds have beaks or bills and no teeth.
- All birds lay hard-shelled eggs that must be kept warm to hatch.

Other traits are true of birds and also true of some, but not all, of the other classes. For example:

- All birds are warm-blooded, which means they control their body temperature.
- All birds use lungs to breathe air.
- All young birds need to be taken care of to survive.



LET'S DO IT

Complete the sentences below by unscrambling the words in parentheses.

Birds have some (ratsit)_____ that are (fnedtier) _____ from what other (mnaalsi)_____ have.

All (risbd) _____ have (giswn) _____ and (atreshf) _____.

Birds do not have (ehtte)_____, and instead of lips, they have (kasbe) _____ or (lsibl) _____.

Birds (nltoorc)_____ their body (mreeptrateu) _____ so they are called (mwra-dloedlob)_____ animals. To

(teerhba) _____, birds use (nusgl) _____.

Birds lay (rhda-ldeehls) _____

eggs that need to be kept (mawr) _____ to

(tcahh) _____.

Young birds cannot (rvesiuv) _____ on their own.



LET'S CHAT

Share What Happened: What did you learn about birds by completing this activity?

Apply: How can knowing the traits that birds share help you identify a vertebrate animal that you have never seen?

Generalize to Your Life: What traits do you share with birds?



LET'S FLY HIGHER

- Choose a wild bird and find out more about the way it lives by reading a book from your local library or searching the internet.
- Make bird flashcards by finding pictures of birds and pasting them onto index cards. Write the name of the bird on the back of the card. Practice identifying each bird by its picture.
- Use your journal or start a diary to keep track of all the types of wild birds you have seen. Note when and where you saw them. Add to this list over time.

BEAKS, LEGS, AND FEET

How many different types of bird beaks can you describe?



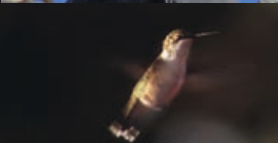





INTRODUCTION

By studying bird beaks, legs, and feet, you can learn how a bird survives in its habitat. Birds need a beak that fits the type of food they eat. A hummingbird has a beak adapted to sipping **nectar** from flowers. A hawk's beak is adapted for eating small prey.

Small birds use their delicate feet and legs to perch on trees and plants. Other birds have sturdy legs and strong feet for walking or swimming. Beaks, legs, and feet have developed to allow birds to eat the food available in their habitats. These are examples of adaptations to help the birds survive.

Bird legs and feet are grouped by how birds use them.

- *Grasping* – Strong robust legs with toes that have sharp curved talons, three toes forward, one toward the back
- *Perching* – Thin to strong legs with three toes forward, one toward the back
- *Swimming* – Strong legs with webs between the three forward toes
- *Wading* – Long, thin legs and long, thin toes
- *Climbing* – Short, strong legs with two toes forward and two toes back

| BEAKS AND BILLS | FOOD |
|---|--|
|  | aquatic (water) insects – aquatic (water) vegetation – berries – birds – fish – fruit – grains – insects – mice – nectar (flower) – nuts – seeds – small mammals – worms |
|  | aquatic (water) insects – aquatic (water) vegetation – berries – birds – fish – fruit – grains – insects – mice – nectar (flower) – nuts – seeds – small mammals – worms |
|  | aquatic (water) insects – aquatic (water) vegetation – berries – birds – fish – fruit – grains – insects – mice – nectar (flower) – nuts – seeds – small mammals – worms |
|  | aquatic (water) insects – aquatic (water) vegetation – berries – birds – fish – fruit – grains – insects – mice – nectar (flower) – nuts – seeds – small mammals – worms |
|  | aquatic (water) insects – aquatic (water) vegetation – berries – birds – fish – fruit – grains – insects – mice – nectar (flower) – nuts – seeds – small mammals – worms |
|  | aquatic (water) insects – aquatic (water) vegetation – berries – birds – fish – fruit – grains – insects – mice – nectar (flower) – nuts – seeds – small mammals – worms |
|  | aquatic (water) insects – aquatic (water) vegetation – berries – birds – fish – fruit – grains – insects – mice – nectar (flower) – nuts – seeds – small mammals – worms |
|  | aquatic (water) insects – aquatic (water) vegetation – berries – birds – fish – fruit – grains – insects – mice – nectar (flower) – nuts – seeds – small mammals – worms |

GEAR

- Pencil



LET'S DO IT

I. Beaks and Bills

1. Study the birds shown in the beaks and bills chart. Circle the food you think each bird eats. Most birds eat more than one food, so more than one answer might be right.

2. What do you think these birds eat?

Bald eagle _____

Cardinal _____

Thrasher _____

Wild turkey _____



LET'S DO IT

II. Legs and Feet

1. Study the birds shown in the legs and feet chart. Circle what they are used for.

2. What type of feet do these birds have?

Bald eagle _____

Cardinal _____

Thrasher _____

Wild turkey _____

| LEGS AND FEET | USED FOR |
|---------------|--|
| | climbing – grasping – perching – swimming – wading - walking |
| | climbing – grasping – perching – swimming – wading - walking |
| | climbing – grasping – perching – swimming – wading - walking |
| | climbing – grasping – perching – swimming – wading - walking |
| | climbing – grasping – perching – swimming – wading - walking |
| | climbing – grasping – perching – swimming – wading - walking |
| | climbing – grasping – perching – swimming – wading - walking |



LET'S CHAT

Share What Happened: Do birds have more variety in their beaks or their feet?

Apply: How does knowing about its beak and feet help you understand how a bird eats?

Generalize to Your Life: Why is it useful to group wildlife by their beaks or feet?

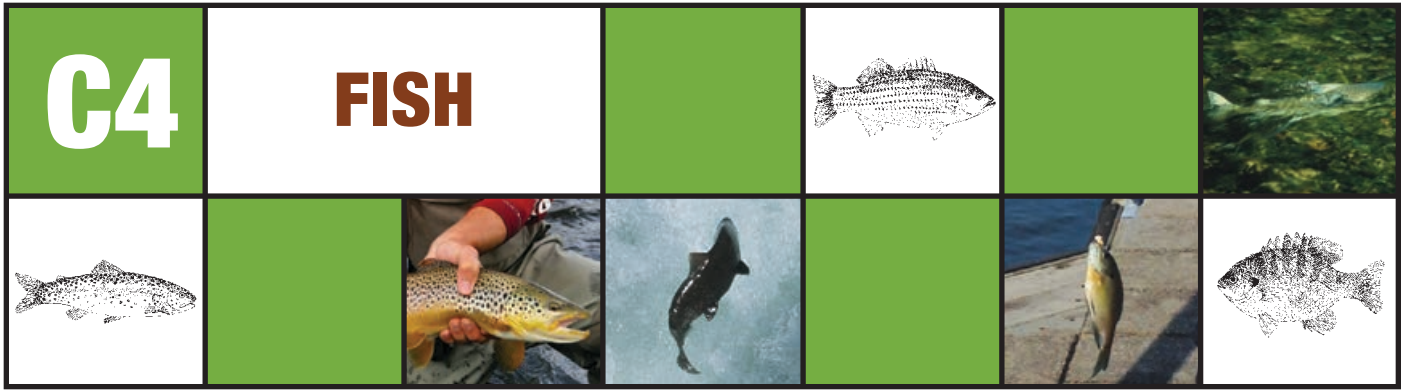


LET'S FLY HIGHER

Become a *birder*. A birder is someone who looks for birds in the wild.

- Choose a bird that should be in your area from a field guide or other source.
- Learn about its habitat, range, and call from a bird book from the library or at the Audubon Society website, www.audubon.org/news/how-begin-birding
- Search for this bird where you expect to find it. An adult can help you.
- Take a pair of binoculars and camera on your search, if possible. Once you find the bird, write the date, time, and location where you found it in a journal. Include any other observations, like the weather or bird behavior. Take a picture or make a sketch.
- Choose another bird to find. This can become a lifelong pastime and help you learn about many types of birds.

MY NOTES and IDEAS



SOUNDS FISHY TO ME

How much do you know about fish?

INTRODUCTION

The name “fish” is most often applied to three major groups of vertebrate animals, or those with backbones: jawless fishes (example: sea lamprey); cartilaginous fishes (examples: sharks and rays); and boney fishes (found in inland waters in North America).

Nearly all fish are streamlined for efficient movement through water. Because water doesn’t have much oxygen, fish have a large surface area in their gills. This allows the exchange of gases between their blood and the water. Fish depend on water and wetlands for at least one life stage. In this activity you study the traits (adaptations) of fish.



GEAR

- Pencil



LET’S DO IT

1. Read Fish Traits.
2. Use the information you learned to complete the crossword puzzle.



LET’S CHAT

Share What Happened: What new fact did you learn about fish?

Apply: Why can fish tell us when water quality is poor?

Generalize to Your Life: How might learning about fish be useful to your health?

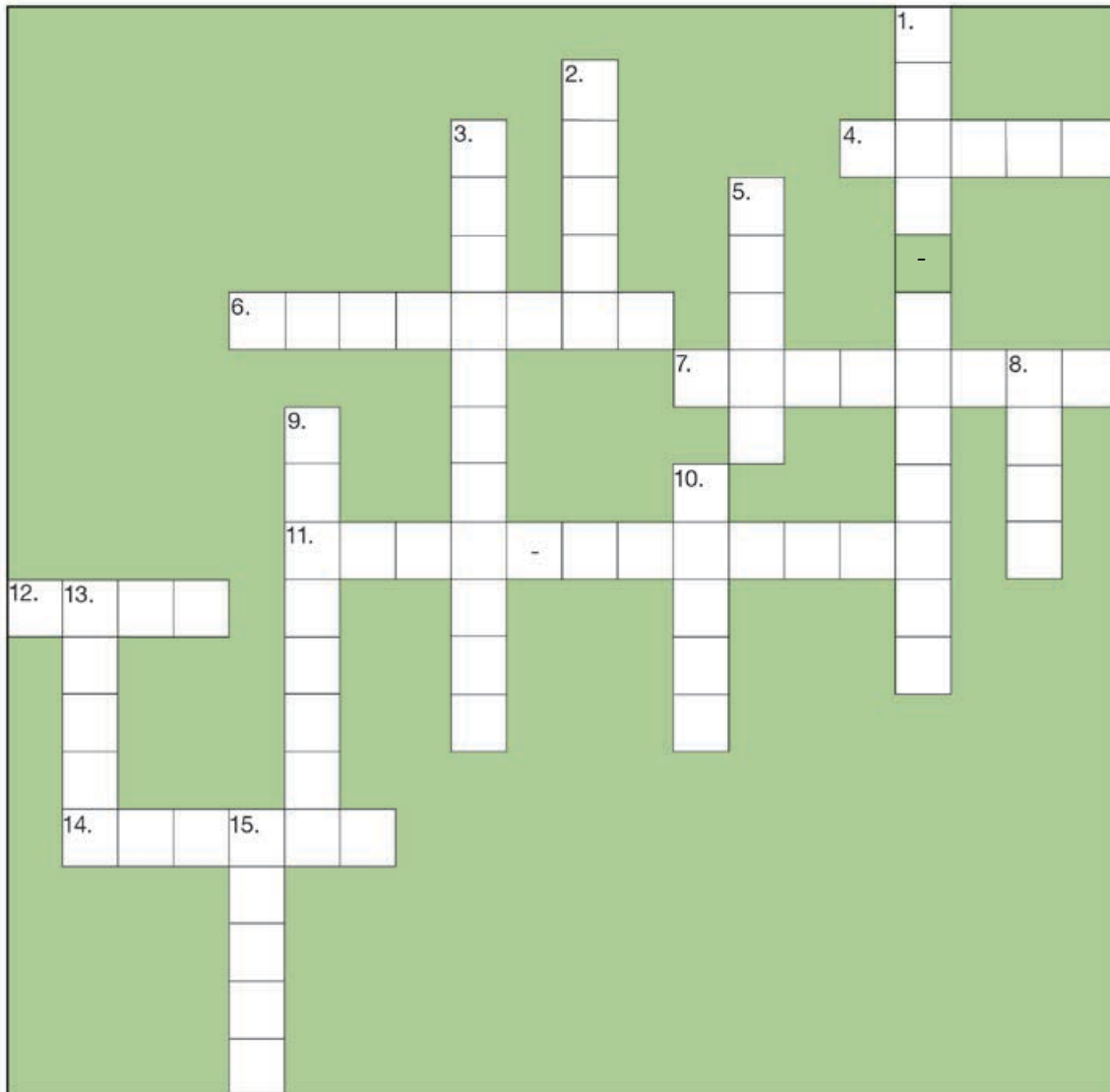
FISH TRAITS

No traits apply to all fish. For example, although most fish have fins, a few fish in nature do not. The following list gives common fish traits, but there are always exceptions; that is, you can find some fish that do not have some of these traits. Most of the traits found in fish are also found in other animals.

1. Fish have fins that are modified scales used for motion in the water.
2. Fish are born as a larva, a small fish that carries and feeds off of its egg sack until it has developed into a fish that can eat on its own.
3. Fish have a **swim bladder** to keep from sinking or floating.
4. Fish live in water.
5. Fish breathe using gills. Boney fish have a single gill opening with a protective flap.
6. Fish have a highly developed sense of taste and taste buds in their mouths, gills, and skin.
7. Fish are **cold-blooded**, which means they stay the temperature of the environment and cannot control their body temperature.
8. Fish have scales covering the body. Scales have rings that are somewhat like tree rings.
9. Most fish lay eggs that must remain in water. A few fish keep eggs in their bodies until after the larvae (young) hatch.
10. Fish do not care for their young. The young are independent, which means they live on their own.
11. Fish have an excellent sense of smell. They can detect tiny traces of some chemicals in the water.

FISH CROSSWORD PUZZLE

Use the clues under Down and Across to fill in the spaces.



DOWN

1. Found inside fish, this keeps them from sinking or floating.
2. Fish live in _____.
3. Young fish that live on their own are _____.
5. Something that makes one animal different or the same as another animal.
8. Structures that fish use for motion in the water.
9. A vertebrate is an animal that has a _____.
10. Fish do not care for their _____.
13. Fish breathe air using _____.

ACROSS

4. Some fish have live _____.
6. A single bone that is part of a backbone.
7. Animals found in the natural environment.
11. A term that means an animal cannot control its body temperature.
12. Some fish lay _____.
14. _____ cover the bodies of fish.
15. A young fish that feeds off an egg sack.



LET'S FLY HIGHER

- Make fish flashcards by finding pictures of fish and pasting them onto index cards. Write the name of the fish on the back of the card. Practice identifying each fish by its picture.
- Start a diary of all the wild fish you have seen. Note when and where you saw them.





CREEPING, CRAWLING, AND SLITHERING

What are the four main types of reptiles?

INTRODUCTION

Herptiles is a shortcut for talking about reptiles and amphibians. The word comes from herpetology, the scientific study of reptiles like snakes, turtles, and lizards, and the amphibian group of frogs, toads, and salamanders.

The four main types of reptiles are snakes, lizards, turtles, and crocodilian. Reptiles have a dry skin cover made of scales. Most have four legs that are adapted for running, climbing, or capturing prey, but some (snakes and glass lizards) have no legs. Reptiles lay eggs that have a leathery outer covering. The leathery shell and membranes protect the embryo from drying, so reptiles do not need to return to water to reproduce. Some reptiles, like some fish, keep their eggs in the body until the young are fully developed. Most

reptiles use wetlands or water but depend less on water than fish and amphibians. Reptiles hibernate (become dormant) during cold times of the year but are occasionally seen sluggishly crawling on the snow.

No traits are only found in reptiles, so you sometimes must look at a combination of traits to identify reptiles from other classes.

GEAR

- Pencil



LET'S DO IT

1. Read Reptile Adaptations.
2. Complete the reptile traits table by putting an X or checkmark under the reptiles with the trait listed in the first column.

REPTILE TRAITS *Note: Some rows have more than one answer.*

| TRAITS | LIZARD | TURTLE | SNAKE | CROCODILIAN |
|---|--------|--------|-------|-------------|
| Legs, scales, cold-blooded | | | | |
| Vertebrae, no legs | | | | |
| Lays eggs, a shell made of bone called a carapace | | | | |
| Scales, vertebrae, cold-blooded, lays eggs | | | | |
| Breathes with lungs, some have a detachable tail that can grow back | | | | |
| Cold-blooded, teeth | | | | |
| Teeth, large powerful tails used for swimming | | | | |
| Lungs | | | | |
| Lays eggs on land | | | | |



LET'S CHAT

Share What Happened: Was completing the table difficult?

Apply: How many types of reptiles have you seen? Where?

Generalize to Your Life: Why are snakes considered beneficial?



REPTILE ADAPTATIONS

Some characteristics that are true of reptiles are also true of some (not all) of the other classes:

- All reptiles are cold-blooded, which means they cannot maintain an internal temperature.
- All reptiles use lungs to breathe air.
- All reptiles have scales on their bodies.
- All reptiles that lay eggs, lay them on land.

Some traits are mostly true of all reptiles.

- Most reptiles lay hard or leathery shelled eggs on land. (A few, like the boa constrictor, have live births.)

The four main types of reptiles are lizards, turtles, snakes, and crocodilian. Each type has specific adaptations that help it survive.

- Lizards have legs and teeth. Some (skinks, fence lizards) have detachable tails, which they can lose to escape a predator and then grow back later.
- Turtles have legs and a shell called a **carapace**. Made of bone, it grows with the turtle as it ages. Turtles do not have teeth but instead eat with



their bony beaks. The term tortoise generally refers to a turtle that doesn't live in the water. Turtles are more **aquatic** in both fresh and salt water, while a tortoise lives on land. Despite its name, the box turtle is a tortoise.

- Snakes have teeth and are legless. They move by using their muscles and the **friction** caused by their scales on the surface. Some snakes are **venomous**, but most are not.
- Crocodilian reptiles include crocodiles and alligators. They are large and have legs and teeth. They live both on land and in the water. They have large, powerful tails used for swimming. Crocodiles have special glands that allow them to live in saltwater; alligators lack this gland and therefore are found only in fresh water.



LET'S FLY HIGHER

- Make herptile flashcards by finding pictures of reptiles and amphibians and pasting them onto index cards. Write the name of the reptile or amphibian on the back of the card. Practice identifying each animal by its picture.
- Start a diary of all the wild herptiles you have seen. Note when and where you saw them. Practice identifying each animal by its picture.
- Go to a park or other area where reptiles might be found and look for them. Reptiles are cold-blooded and need to lie in the sun, so look in sunny areas on rocks or logs. Once you find a reptile, figure out which type it is. Take pictures.
- Research venomous Indiana snakes. Draw where they're found on a state map. Look up the snakes' habitat to find out where in a park you would most likely find them.

EGG TO TADPOLE TO FROG

Could you draw an amphibian?

INTRODUCTION

Amphibians do not have scales like reptiles. Frogs and salamanders have moist, glandular skins; and toads have dry and rough (warty) skin. Amphibian toes do not have claws.

All amphibians begin life in water, and most move onto land when they become adults. Young amphibians pass through a larval stage before they reach adult form through **metamorphosis**. Their eggs are usually jelly-like and deposited in water, free-floating, or attached to water plants and rocks. For example, frogs begin life as eggs surrounded by a jelly-like coating. The eggs must remain in water. An egg hatches into a tadpole, which has gills to breathe underwater. Because the tadpole is cold-blooded, it spends much of its time in the sun to warm itself. As the tadpole grows, it goes through metamorphosis and changes into an adult frog. The frog then moves onto land, where it breathes with lungs. When it returns to the water, it can also breathe through its skin.

Polluted water and habitat changes harm amphibians, so they're not as common as they once were. Their porous, sensitive skin exposes them to chemicals in the water. So they are good indicators of water quality.



GEAR

- Pencil



LET'S DO IT

1. Read the introduction and About Amphibians I.
2. Complete the paragraph in the box on the next page using the given words.

ABOUT AMPHIBIANS I

Unique traits: Two characteristics of amphibians are not true of any other class.

- All amphibians live both on land and in water sometime during their lives.
- All amphibians can breathe through their skin.

Shared traits, mostly amphibians: Some traits are mostly true of all amphibians.

- Most amphibians go through metamorphosis. Some salamanders do not metamorphose but keep their larval growth form throughout their lives. These are known as neotenic salamanders. The hellbender and mudpuppy are both neotenic salamanders.

Shared traits: Other traits are true of amphibians and also true of some (not all) of the other classes.

- All amphibians are cold-blooded.
- All amphibians have gills at some point in their lives.
- All amphibians lay eggs surrounded by a jelly-like coating.



LET'S CHAT

Share What Happened: What did you learn about amphibians that you did not already know?

Apply: Why do you think polluted water can harm amphibians?

Generalize to Your Life: Why should we protect amphibians?

Use these words to complete the paragraph. Cross out each word after you use it.

COLD-BLOODED

WARM

LUNGS

JELLY

GILLS

CLASSES

TADPOLE

METAMORPHOSIS

LAND

EGGS

WATER

VERTEBRATES

SKIN

GROWS

FROG

TRAITS

Amphibians have a backbone just like all _____. Animals with backbones are divided into groups called _____. There are several _____ that identify amphibians. All amphibians start their lives in _____, and most move onto _____. Frogs begin life in water as _____ that are surrounded by a _____-like coating. An egg hatches into a _____, which has _____ to breathe underwater. As the tadpole _____, it goes through _____ and changes into an adult _____. The adult frog then moves on to land where it can now breathe with _____. Because the frog is _____, it spends much of its time in the sun to _____ itself. When it returns to the water, it can also breathe through its _____.



LET'S FLY HIGHER

- Look for eggs in a pond in spring.
- Return to study the eggs every day.
- Sketch what you see each day as you watch the changes.
- You can also watch how the larvae change into adults once the eggs hatch.
- You may catch amphibian larva-like tadpoles to observe them, but be sure to return them to the pond where you found them.

The eastern hellbender is endangered in five states and protected, or of special concern, in many others. "Their populations are declining in many of their geographic locations," said Rod Williams, a Purdue assistant professor of forestry and natural resources and leader of the university's hellbender efforts. "This species has hardly changed in 160 million years of existence, so we think it's worth the effort to do our part to save this living fossil."

