



Reptiles include turtles, lizards, snakes, crocodiles, and all of their relatives. There are over 9,000 different kinds of reptiles with *amazing adaptations* that help them find food and protect themselves from becoming a meal!

.....
Name

.....
Date

Starting your search in the **Rainforest** if it's open, keep an eye out for:

Geckos in the Rainforest

Keep a tally of each gecko species that you find:

- » How can you tell they are different species?
- » Can you guess where they spend most of their time?

Hint: Observe the patterns and colors of the geckos' skin.



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Masters of camouflage

Some geckos blend into their surroundings to hide from their predators or prey!

Chameleons in the Rainforest

Chameleons have incredible and unique adaptations that make them well-suited for life in the trees, where they hunt and find shelter. If the Rainforest is closed, head to African Hall to find some of these lizards!

- » What are two adaptations that help chameleons find and eat small insects?
- » What are two adaptations that make chameleons great tree climbers?

Hint: Look closely at their eyes, tail and feet!



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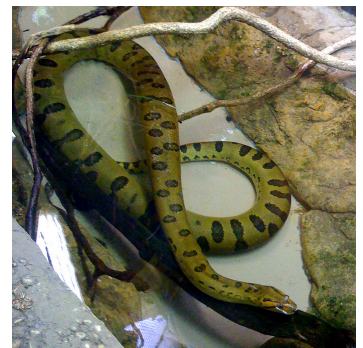
Did you know?

Chameleons can change color based on factors such as temperature or their mood!

Green Anaconda in the Amazon Flooded Rainforest

Check out the heaviest type of snake in the world, the green anaconda! This snake can grow to be 9 meters (29.5 feet) long, and weighs over 227 kilograms (550 pounds)! Believe it or not, the green anaconda is a good swimmer.

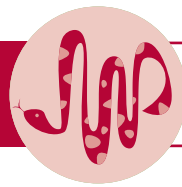
- » Why would being able to swim be an advantage for an anaconda?
- » How does the green anaconda capture and subdue its prey?



© JessicaTmarie

Try out the anaconda squeeze!





Pythons in the Water Planet Exhibit

Find the woma python, black-headed python, and centralian carpet python, which are found in the same display. Their identification labels are at knee level in the shadows. Most pythons have heat-sensing pits near their mouths and eat mammals.

- » How are the woma and black-headed pythons different from other pythons?
- » Why would heat sensors be a useful adaptation for some snakes, but not necessarily for others?



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Cousins of the boas

While most boa constrictors live in the Americas, pythons are more likely to be found in Asia, Africa, or Australia.

Alligator and Alligator Snapping Turtles in the Swamp

Our albino alligator is named Claude, and his lack of color was caused by a rare mutation in his DNA. Alligator skin normally contains a dark green pigment.

- » How does an alligator's skin color help it to survive? What consequences might this have for an albino alligator such as Claude?
- » What is one adaptation that makes alligators strong swimmers?
- » Notice the placement of Claude's eyes. How does this adaptation suit living in a swampy environment?
- » Spend a minute to closely observe a turtle. What physical or behavioral characteristics show how it has adapted to its surroundings?



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How old am I?

Claude was born in 1995 in Florida. Do some quick math!



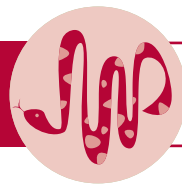
© Ron DeCloux

Built like a tank

Weighing over 150 lbs, alligator snapping turtles are the largest turtle in North America!



Reptiles Scavenger Hunt



MUSEUM-WIDE

Teacher Answer Key

Name

Date

Reptiles include turtles, lizards, snakes, crocodiles, and all of their relatives. There are over 9,000 different kinds of reptiles with *amazing adaptations* that help them find food and protect themselves from becoming a meal!

Starting your search in the **Rainforest** if it's open, keep an eye out for:

Geckos in the Rainforest

Keep a tally of each gecko species that you find:

- » How can you tell they are different species?

Different species may have different body shapes, coloration, adaptations, etc.

- » Can you guess where they spend most of their time?

Hint: Observe the patterns and colors of the geckos' skin.

Green coloration - leaves, brown coloration - tree trunks

Chameleons in the Rainforest

Chameleons have incredible and unique adaptations that make them well-suited for life in the trees, where they hunt and find shelter. If the Rainforest is closed, head to African Hall to find some of these lizards!

- » What are two adaptations that help chameleons find and eat small insects?

Feeding: long, sticky tongue, eyes that can move independently

- » What are two adaptations that make chameleons great tree climbers?

Hint: Look closely at their eyes, tail and feet!

Climbing: prehensile tail, specialized clawed feet

Green Anaconda in the Amazon Flooded Rainforest

Check out the heaviest type of snake in the world, the green anaconda! This snake can grow to be 9 meters (29.5 feet) long, and weighs over 227 kilograms (550 pounds)! Believe it or not, the green anaconda is a good swimmer.

- » Why would being able to swim be an advantage for an anaconda?

In spite of their heavy weight, anacondas are agile and can move more quickly in water than on land.

- » How does the green anaconda capture and subdue its prey?

Anacondas and other constrictors capture their prey using their mouths and then wrap their bodies tightly around the animal.



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Masters of camouflage

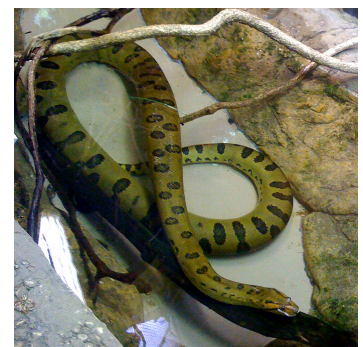
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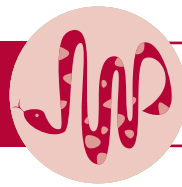


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Pythons in the Water Planet Exhibit

Find the woma python, black-headed python, and centralian carpet python, which are found in the same display. Their identification labels are at knee level in the shadows. Most pythons have heat-sensing pits near their mouths and eat mammals.

- » How are the woma and black-headed pythons different from other pythons?

Womas and black-headed pythons don't have visible heat sensing pits.

- » Why would heat sensors be a useful adaptation for some snakes, but not necessarily for others?

Lizards and other ectothermic, or cold-blooded, animals make up a large part of these pythons' diets. This may explain why the ability to find prey by sensing heat could be a more useful adaptation for snakes that eat mostly warm-blooded prey, such as mammals.

Alligator and Alligator Snapping Turtles in the Swamp

Our albino alligator is named Claude, and his lack of color was caused by a rare mutation in his DNA. Alligator skin normally contains a dark green pigment.

- » How does an alligator's skin color help it to survive? What consequences might this have for an albino alligator such as Claude?

A dark green color helps the predator blend in with the dark water, so that it can sneak up on prey. Claude would have stood out in the wild as a baby alligator, and been eaten himself by a larger predator. Thankfully, he has spent his entire life in captivity!

- » What is one adaption that makes alligators strong swimmers?

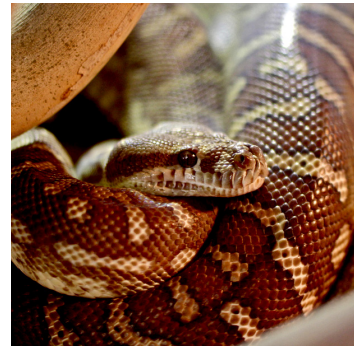
Answers might include a broad, muscular tail, webbed feet, or a streamlined body.

- » Notice the placement of Claude's eyes. How does this adaptation suit living in a swampy environment?

With eyes on the top of his head, an alligator can coast slowly through the dark water and be on the lookout for prey, without having the surface noisily each time.

- » Spend a minute to closely observe a turtle. What physical or behavioral characteristics show how it has adapted to its surroundings?

Alligator snapping turtles are "sit and wait" predators that can stay underwater for 40-50 minutes. To catch a fish, a turtle will sit very still in the depths of a water, holding its mouth open and wiggling the small, pink, worm-like appendage on its tongue to lure passing fish. These turtles are so sedentary that algae often grows on their rough shells, providing camouflage in the murky water. Their long tail helps with propulsion through the water, and although they are heavy, the water supports their weight. They only go on land to nest.



© Ron DeCloux

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At-Academy Activity: Reptiles Scavenger Hunt

GRADE LEVELS	3 th – 8 th ; California Content Standards for 3 rd , 4 th , and 5 th
SUBJECTS	Life Sciences, Investigation and Experimentation
DURATION	Preparation: 5 minutes Activity: 30 minutes
SETTING	Entire Academy: Rainforest, Swamp, and Water Planet

Objectives

Through this scavenger hunt, students will:

1. observe examples of reptiles found throughout the Academy.
2. practice connecting the physical characteristics or behaviors of reptiles with their apparent functions.

Materials

Reptiles Scavenger Hunt (one per student)
pencils

Vocabulary

- ❖ **adaptation:** a structure or behavior that increases an organism's chance of surviving and reproducing in a particular environment
- ❖ **reptile:** any cold-blooded (i.e., ectothermic) vertebrate of the Class Reptilia including snakes, lizards, tortoises, turtles, alligators, crocodiles . This Class includes the Orders:
 - ❖ Squamata: snakes, lizards, and worm lizards
 - ❖ Crocodilia: crocodiles, alligators, and caimans
 - ❖ Testudines: turtles and tortoises
 - ❖ Sphenodontia: tuatara – there are 2 species of tuatara, and they most closely resemble (and are most closely related to) lizards

Teacher Background

What is a reptile?

Reptiles are vertebrates that belong to the Class Reptilia. They are cold blooded, or ectothermic, which means their body temperature is not regulated by internal mechanisms. For humans, our normal body temperature is approximately 98.6 degrees Fahrenheit. But in reptiles, their internal temperature is dependent on the temperature of their surroundings. This is why you might see a snake or lizard sunning itself on a rock.

- ❖ All reptiles have three-chambered hearts, except crocodiles, which have four-chambered hearts (2 atria, 2 ventricles), like mammals and birds. Reptiles have well-developed lungs from birth and breathe air. Most of them have two lungs, except some snakes which have a single lung.
- ❖ Scales and scutes make up the outer layer of their skin, which is dry and has high levels of keratin, to help protect the body and prevent water loss through the skin. Most reptiles

that have two sets of paired limbs have five clawed toes on each foot. In some reptiles, like snakes and worm lizards, the legs are absent.

- ❖ Reptiles were the first animals with amniotic eggs that are laid on land and not in water. Their eggs have leathery protective shells and membranes that allow oxygen and other gases to pass through. Not all reptiles lay eggs; some give birth to live young from eggs hatched inside the body of the mother.
- ❖ Reptiles have keen sense organs which help them find food and escape predators. Eyes are one of the most important sense organ and in most reptiles, they are located at the front of the head for binocular vision.

Activity

Preparation

1. Print out the *Reptiles Scavenger Hunt* for each student.
2. Go over the scavenger hunt questions with your adult chaperones ahead of time and make sure they are familiar with the activity and vocabulary.

Introduction

- ❖ Review the major types of reptiles, including snakes, lizards, tortoises, turtles, and alligators. There are over 9,000 different kinds of reptiles, and they are very diverse in where they live, what they look like, how they move and what they eat.
- ❖ Go over the questions on the scavenger hunt with your students and make sure they understand what they will be doing.

Procedure

1. Divide students into their chaperone groups. You may wish for groups to start in different areas of the Academy. This activity is designed to start in the Rainforest, and then move directly to the Flooded Amazon, Water Planet, and Swamp. However, the hunt can be completed in any order.
2. Allow time for students to explore, observe, and answer the questions on the scavenger hunt. All of the reptiles on this hunt were on exhibit in the Academy as of September 2012.

Wrap-Up

- ❖ Ask students to share examples of the different structures and the functions they found that help reptiles survive. If students want to research organisms more in depth, they can visit the Naturalist Center on Level 3, which features books, computers, and helpful staff.

Correlated California Content Standards

Grade Three

Life Sciences

- 3a. Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.

3b. Students know examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.

Grade Four

Investigation and Experimentation

6a. Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.

Grade Five

Investigation and Experimentation

6a. Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.