

NEW YORK STATE  
**Conservationist**

for  
**KIDS!**

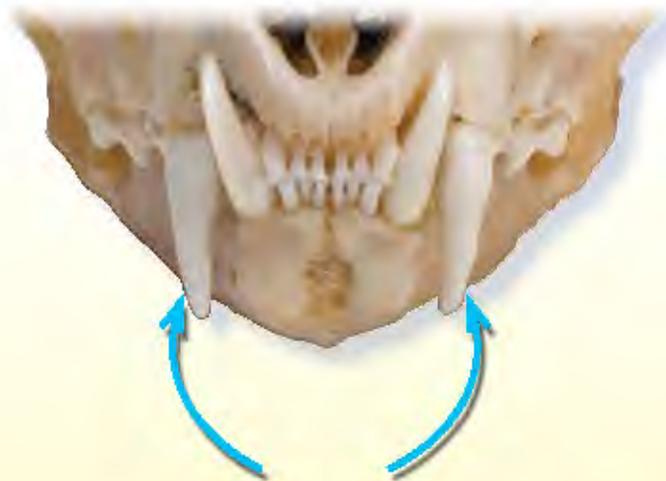
**SKULL  
SCIENCE**



**DISCOVER**  
what a  
mammal's skull  
can reveal about its  
identity and habits.

# USE THE CLUES...

**Teeth** can help you figure out what and how an animal eats. By looking at the number and form of the teeth you can tell whether the animal is a meat-eater (carnivore), plant-eater (herbivore) or both (omnivore).

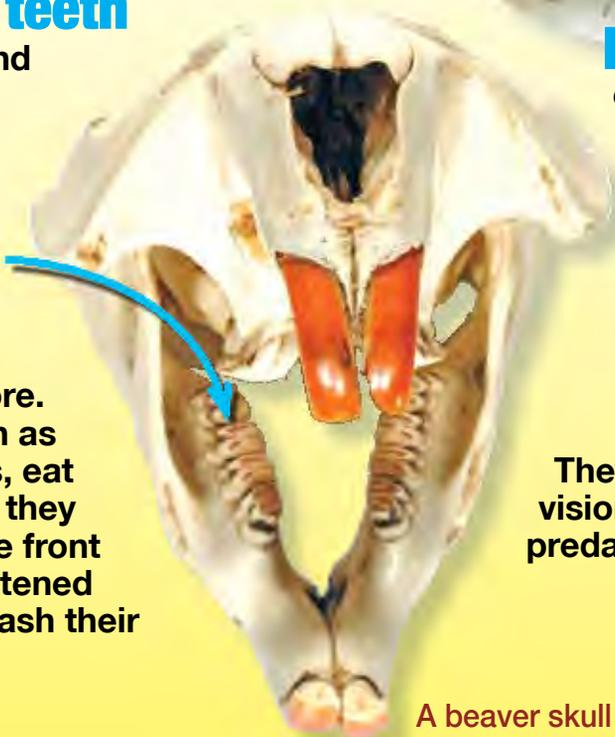


## Sharp, pointed teeth

are used for tearing and shearing meat: a carnivore.

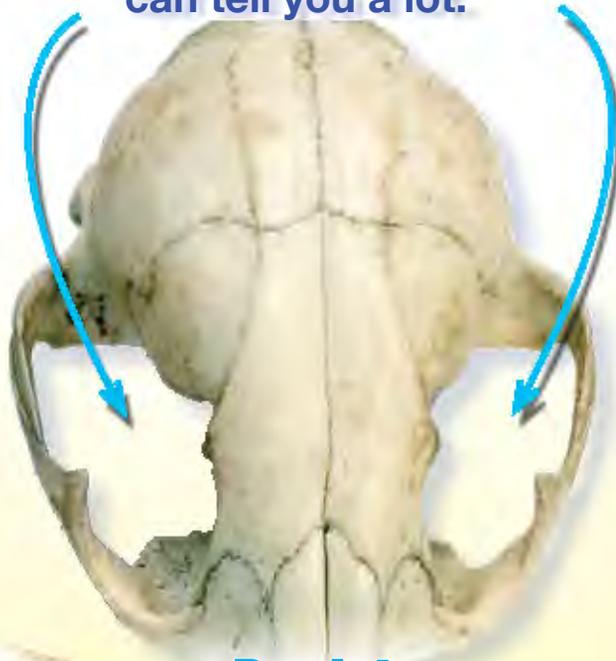
## Broad, somewhat flat teeth

are used for crushing and grinding vegetation: an herbivore. Since omnivores, such as raccoons and humans, eat both plants and meat, they have sharp teeth in the front to rip and cut, and flattened teeth in the back to mash their food.



A beaver skull

The position and size of the **eye sockets** can tell you a lot.



**Predators**, such as coyotes, generally have forward-facing eyes.

This gives them 3-D vision, so they can more accurately locate and follow prey. Prey species, such as rabbits, have relatively large eyes located on the sides of their head.

They have great peripheral vision, helping them to spot predators and warning them about sneak attacks.

**Next time you're in the woods, or even in your backyard,**

look around and see if you can spot any mammal bones. While finding a complete skull is rare, you'll be amazed at what you can find, and surprised at the amount of information those bones reveal.

# Deer

## Did you know?

Deer don't have upper incisors, so they tear, shred or roughly shear off vegetation when eating, rather than neatly snipping it like a rabbit.



**General shape:** elongated skull with a large gap on the lower jaw between the incisors and back teeth

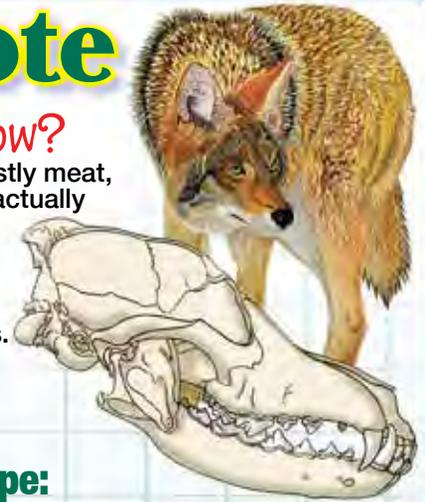
**Teeth:** broad molars are quite sharp for cutting, slicing and grinding

**Eyes:** set somewhat to the side for better peripheral vision

# Coyote

## Did you know?

Coyotes eat mostly meat, but their diet is actually quite broad and includes deer, rabbits, rodents, carrion, fruit, birds and insects.



## General shape:

long, with a large braincase and elongated snout

**Teeth:** large, round, pointed canines for grabbing and stabbing prey, and blade-like premolars and molars for both shearing and crushing bones (carnivore)

**Eyes:** located on the front of the head; give the coyote binocular vision and better depth perception

# Cottontail

## Did you know?

Cottontails have very thin, light bones, which help the animal to run more quickly.



**General shape:** small and broad

**Teeth:** upper and lower incisors enable it to neatly snip off plants; cottontails have two pairs of upper incisors—a small incisor lies behind each large, deeply grooved upper incisor

**Eyes:** very large eye sockets located on its sides, giving a wide field of vision so predators can be seen more effectively

# Beaver

## Did you know?

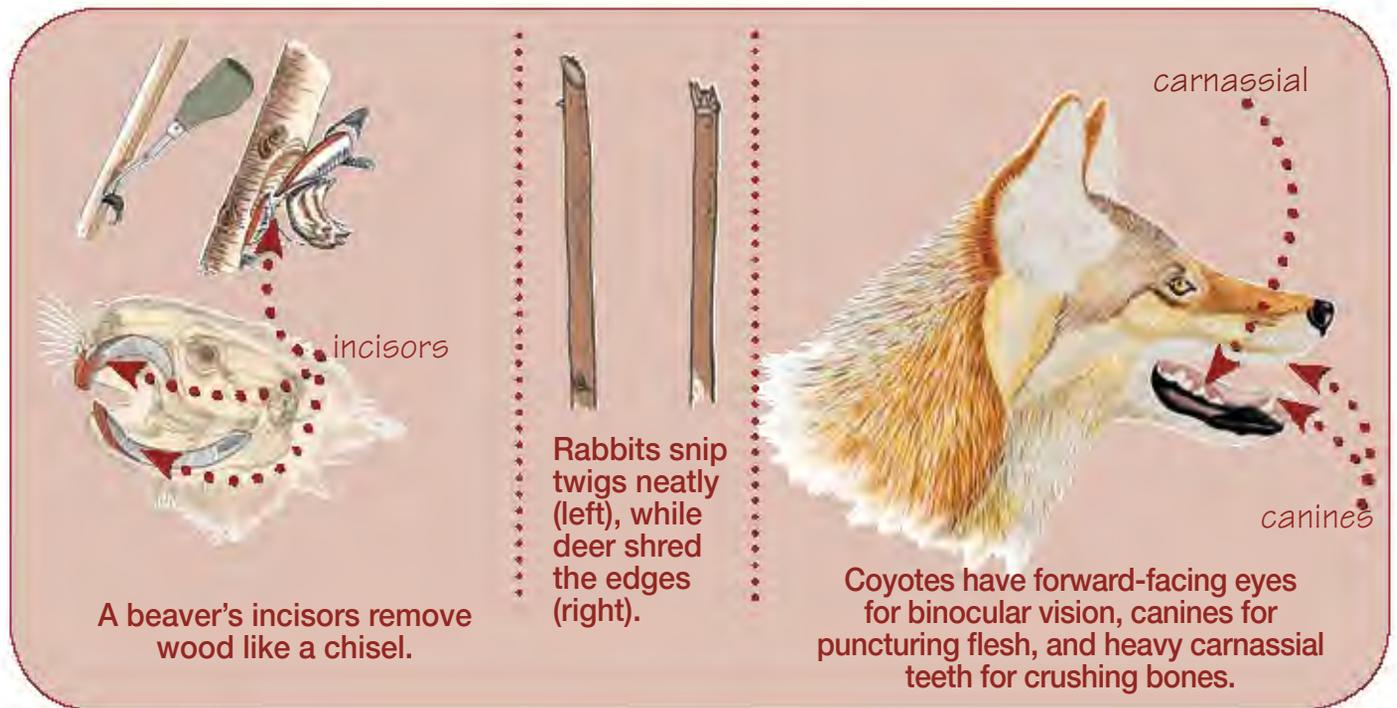
The beaver's incisors automatically sharpen one another when the uppers meet the lowers. Constant gnawing keeps the teeth from growing too long.



**General shape:** skull and jaws are heavy and broad

**Teeth:** four large bright-orange chisel-like incisors (two on top, two on bottom) are deeply rooted in the skull and are used to fell trees for both food and building material

**Eyes:** eye sockets and ear openings are located high on the skull, making it possible for the beaver to see and hear while floating on the water's surface



A beaver's incisors remove wood like a chisel.

Rabbits snip twigs neatly (left), while deer shred the edges (right).

Coyotes have forward-facing eyes for binocular vision, canines for puncturing flesh, and heavy carnassial teeth for crushing bones.

illustrations by Jean Gawalt



A rabbit has eyes on the side of its head to see danger approaching from almost any direction.

**PERIPHERAL VISION** is what you see to the sides while you're looking straight ahead—the edges of your eyesight.

How far behind you can you see? How does this compare with the rabbit, pictured to the left?



**3.** Stop moving your arms when you can no longer see your thumbs from the corners of your eyes.

**2.** Keep looking straight ahead while you slowly move your arms out to the sides.

**4.** This is the limit of your peripheral vision.

**To check your peripheral vision,**  
**1.** Hold your arms straight out in front of you with your thumbs pointing upwards.

**For more information:**

DEC's Skull Science brochure [www.dec.ny.gov/docs/wildlife\\_pdf/skullscience.pdf](http://www.dec.ny.gov/docs/wildlife_pdf/skullscience.pdf); DEC's color brochures of NY wildlife [www.dec.ny.gov/pubs/4791.html](http://www.dec.ny.gov/pubs/4791.html); DEC's fact sheets about mammals [www.dec.ny.gov/animals/263.html](http://www.dec.ny.gov/animals/263.html); DEC's *Conservationist for Kids* [www.dec.ny.gov/education/40248.html](http://www.dec.ny.gov/education/40248.html)

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