

What Happens to Deer Antlers

A schoolyard field investigation for grades 2-5



Activity Summary:

Each year male white – tailed deer, elk and other members of the deer family shed their antlers after rut or breeding season. Each spring as days lengthen male deer, bucks, begin to grow a new set of antlers. With millions of deer in the United States, we should be able to find antlers when we hike in the woods or even in our own neighborhoods. What happens to all these antlers? Students conduct an investigation to discover what happens to antlers placed in various locations around the school.

Materials needed:

Antlers of white-tailed deer (talk to friends who hunt deer for donations of antlers)
Pictures of deer with and without antlers
Measuring tapes
Graphpaper
Camera

Background:

Antlers begin growing as days lengthen in the spring. Antler buds form on the pedicels at the top of the skull. Growth is rapid all spring and into early fall. To supply nutrients to the growing bone, antlers are covered with a thin velvet or skin that contains hundreds of tiny blood vessels. In the fall at the start of the breeding season the skin dies and the antlers harden off. Bucks will rub the loose velvet off on small saplings as they prepare for the rut or breeding season, which peaks during november. Male deer or bucks use their antlers to establish dominance and compete for mates during the breeding season.

Once the breeding season is over and hormone levels decrease the bone where the antler was attached to the pedicel begins to erode away. Eventually the antler falls off, generally during January to March. Sometimes both antlers will fall the same dy, other times the buck may walk around several days with just one antler.

The Virginia white-tailed deer have small sets of antlers compared to other species in the deer family. Moose antlers may be seven feet from the tip of one to the tip of the other and are grown during the same period each year. Moose antlers can weigh over 40 pounds. Caribou, reindeer and elk antlers may each be over three feet long with multiple points. Deer will usually grow larger antlers as they age. However antler size also depends genetics, the availability of food, and other environmental factors. Additional information can be found in the links at the end of this invesigation.

Procedure:

Pass an antler around the classroom. After everyone has had the chance to touch and examine the antler, encourage the students to make statements and ask questions about the antler.

Below are some questions that will help guide the students.

What animal is the antler from?

Have they ever found one just laying on the ground?

What is it made of?

Why do deer lose their antlers?

Are they eaten by dogs, foxes, or coyotes?

Do they decompose?

What about other bones, why don't we see more bones or skeletons?

Antlers are made of bone or calcium which doesn't decompose as flesh does. Some do get carried off and chewed on by members of the canine family. If they are buried by leaves and soil they will eventually breakdown but not quickly.

The main method that antlers and bone get recycled is from rodents that gnaw on bones and antlers to keep their teeth from growing too long and for calcium and other minerals. This process recycles the calcium quickly back into the ecosystem where it is taken up in plants and again made available to deer and other animals. Teachers may want to discuss human sources of calcium and which plants contain this essential mineral. Why is important that children also have calcium in their diet?

Field Investigation.

- Measure each antler from the base to the end of each point or branch. Draw or take a picture of the antler and save it for comparison later. Use a permanent marker to identify each antler at multiple spots on the antler (e.g. base side) in case one area gets chewed off. They can each simply be assigned a number or letter. If a scale is available, weigh the antler. Create a data sheet for each antler similar to the one included in this activity.
- Place each antler in a location on the schoolgrounds where you think there will be rodents. The base of a tree, near the compost pile, or under a bush are all possible locations. To prevent the antler from being carried off use wire to tie it to a stake. You can drill a hole in the antler to attach the wire or just the wrap wire several times around its base. Now it is a waiting game.
- After 2 weeks check on the antler. Is there evidence that it has been gnawed on by mice, squirrels or other small rodents? If so measure the section gnawed. If at the end of one of the points, measure the length. Take a picture for comparison.
- Repeat every 2 weeks until you begin to notice lots of activity around the antler then visit the spot once a week.
- If you can rake the area around the antler smooth, try capturing the footprints of the animal(s) visiting the antler. You can use playground sand that has been moisten or sprinkle a very thin layer of lime or chalk dust on the ground around the antler to capture the steps of small mammals. Large tracks made in sand can be captured in plaster, smaller tracks can be captured in a photo.
- If a trail camera is available, set it up to take a picture of the visitor.

Additional resource connections:

<http://www.dgif.virginia.gov/education/sol/2.4/deer/>

<http://www.dgif.virginia.gov/wildlife/deer/factsheet.pdf>

https://tpwd.texas.gov/publications/nonpwdpubs/introducing_mammals/white_tailed_deer/

For pictures of White-tailed deer check your school library for *Virginia Wildlife* magazine.

Note: If antlers are not available; a similar investigation can be set up using "soup" bones obtained from the meat department at your local grocery store.



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Antler ID # _____ Location _____

Measurements taken at beginning of investigation:

Date:	Total length	point # 1	point # 2		

Draw a picture of the antler with the points labeled for future reference:

Measurements taken during investigation period:

Date:	Total length	point # 1	point # 2		

