JUST FOR U.S.*

GRADES 4 - 5

*Understanding Science

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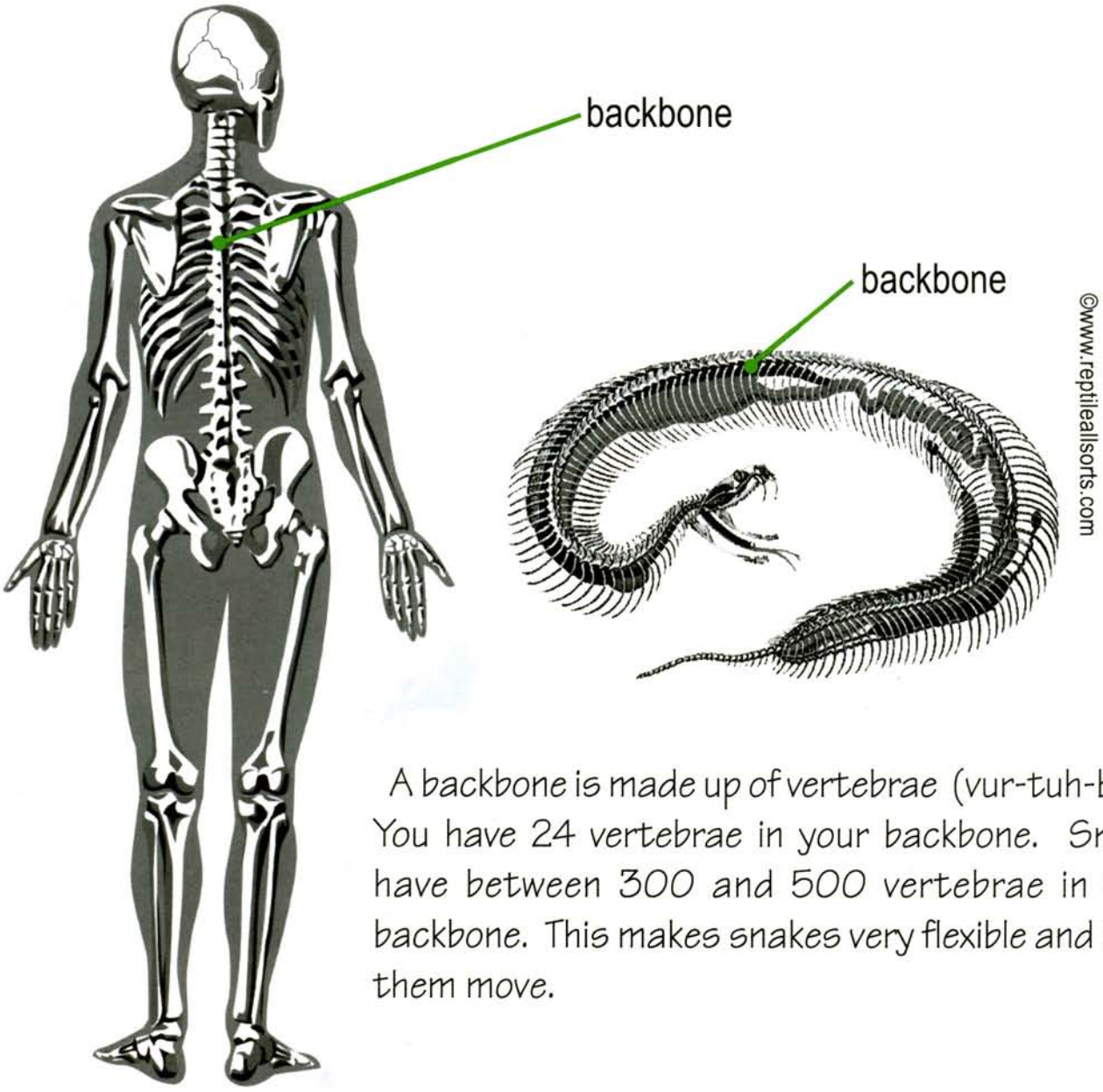
Are you afraid of snakes?

Some people are afraid of snakes.
Snakes seem very different from people.
Snakes move without legs. They swallow their food whole.
They do not blink.
But are snakes really so different?

You are more like a snake than you might think. This is how scientists classify snakes and humans.

	SNAKES	HUMANS
Kingdom	Animal	Animal
Phylum	Chordate	Chordate
Subphylum	Vertebrate	Vertebrate
Class	Reptile	Mammal

Snakes and humans are both vertebrates, which means animals with a backbone.



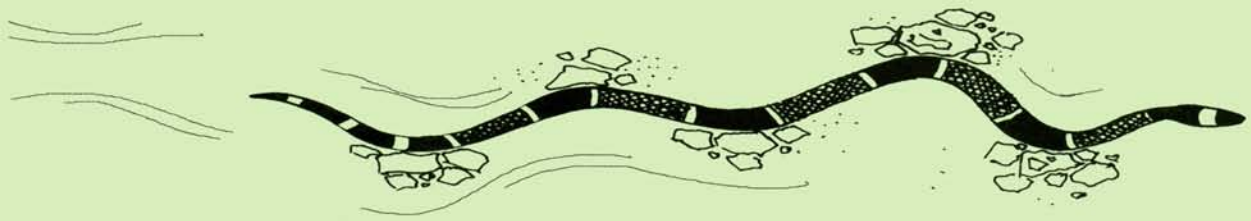
A backbone is made up of vertebrae (vur-tuh-bray). You have 24 vertebrae in your backbone. Snakes have between 300 and 500 vertebrae in their backbone. This makes snakes very flexible and helps them move.

Snakes and humans do the same things, like move and eat. Snakes just have different ADAPTATIONS to get the job done. All species have adaptations, or special features, to help them survive. Snakes have adaptations to streamline their body so they can move well in narrow spaces and holes. Three of these adaptations are no legs, no arms and no eyelids. This seems strange to us but it works well for snakes.

GETTING THE JOB DONE: TWO WAYS SNAKES MOVE WITHOUT LEGS.

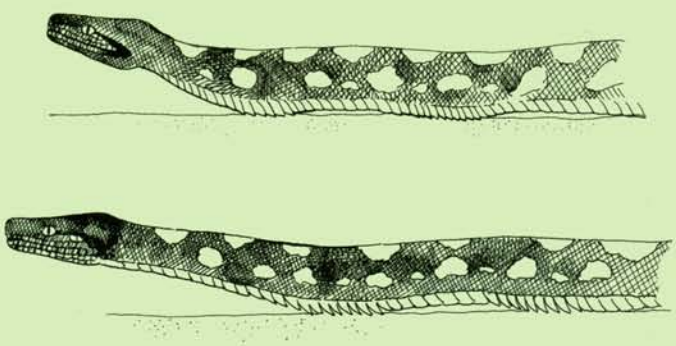
UNDULATION (UN-DOO-LAY-SHUN, moving in a wave)

Although the snake looks like it is gliding on nothing, it is really pushing itself along. In nature, snakes push against things on the ground, like stones and branches. If a snake is on smooth glass, it cannot move!



CREEPING

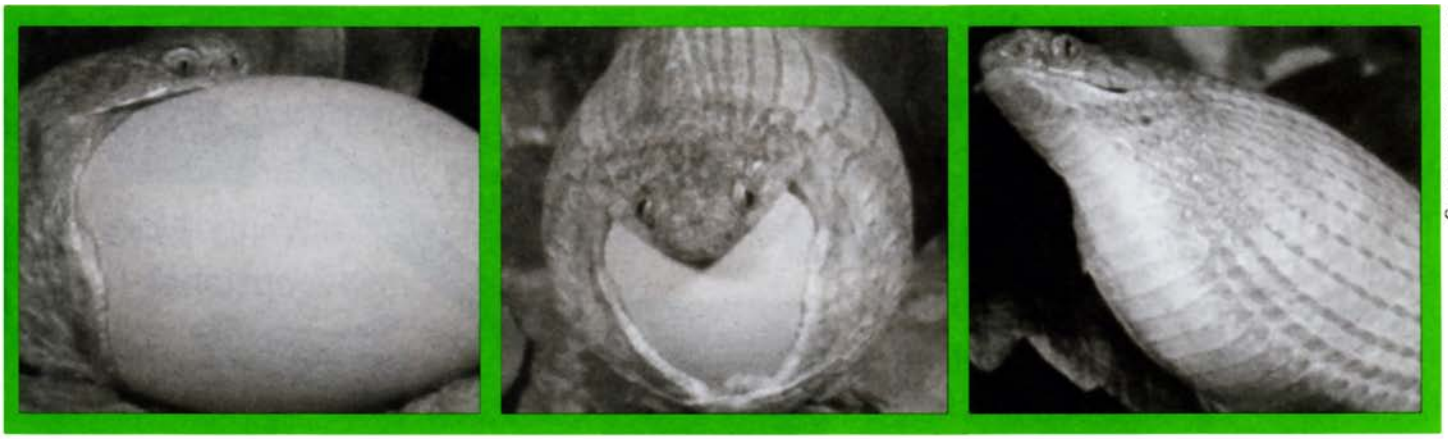
This is how many big snakes move. They have skin on their bellies that they pull forward. The scales on the skin hook into the ground. Then the snake pulls the rest of the body forward.



Tip: When you visit the zoo, watch the underside of a snake. You will see it pushing or pulling.

GETTING THE JOB DONE: HOW SNAKES EAT WITHOUT ARMS.

Imagine that your jaw was held on by a rubber band. You could open mouth much wider. This is how a snake jaw works. This adaptation plus the adaptation that snake ribs are not connected means that snakes can swallow food larger than their body. They don't need arms!



GETTING THE JOB DONE: HOW SNAKES PROTECT THEIR EYES.

Snake eyes are covered by a transparent scale. Just like the rest of the snake, the scale is not wet. This keeps things from sticking to the eye. This scale is replaced every time the snake sheds its skin.

So what's the final message?

It is OK to be afraid of snakes, but remember, they are not really so different from you. Their adaptations might seem strange to us, but snakes belong in the world just like you do. Snakes do their best to stay out of your way. So if you see a snake, feel lucky and give some luck to the snake. Give it a chance to move away and live!

MAKE A SNAKE SKELETON

Here is what you will need!

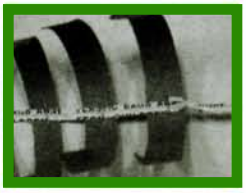
TO MAKE THE SPINE

1. Cut 3 inches out of the bottom of a paper towel tube. Save both pieces.

2. Cut the tube into a large piece (about 8 inches) and a small piece (about 3 inches).

3. Cut the large piece into 1/2 inch pieces.

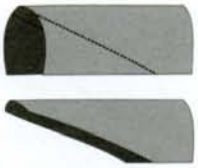
4. Connect the twist ties to make a 2-foot long piece. Starting 2 inches from the end, staple the paper towel pieces to the twist ties.



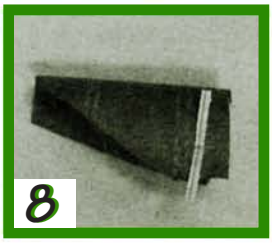
Ask an adult to help staple.

TO MAKE THE SKULL

5. Cut the small piece along diagonal lines for the top of the skull.



6. Use the extra piece from step 1 to make the jaw by cutting a piece the same length as the piece in step 5.



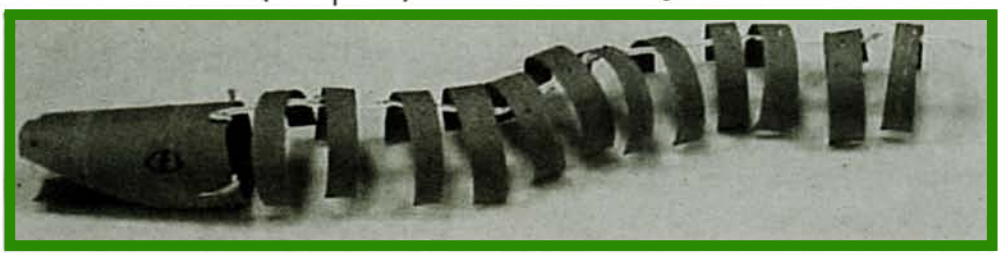
7. Staple a rubber band to the bottom of the jaw.
8. Staple a twist tie to each side of the skull.
9. Attach the twist tie to the rubber band.

- You can use another paper towel tube to make a longer snake. Also, because of its special jaw and open ribs, you can show how snakes eat animals larger than their body.

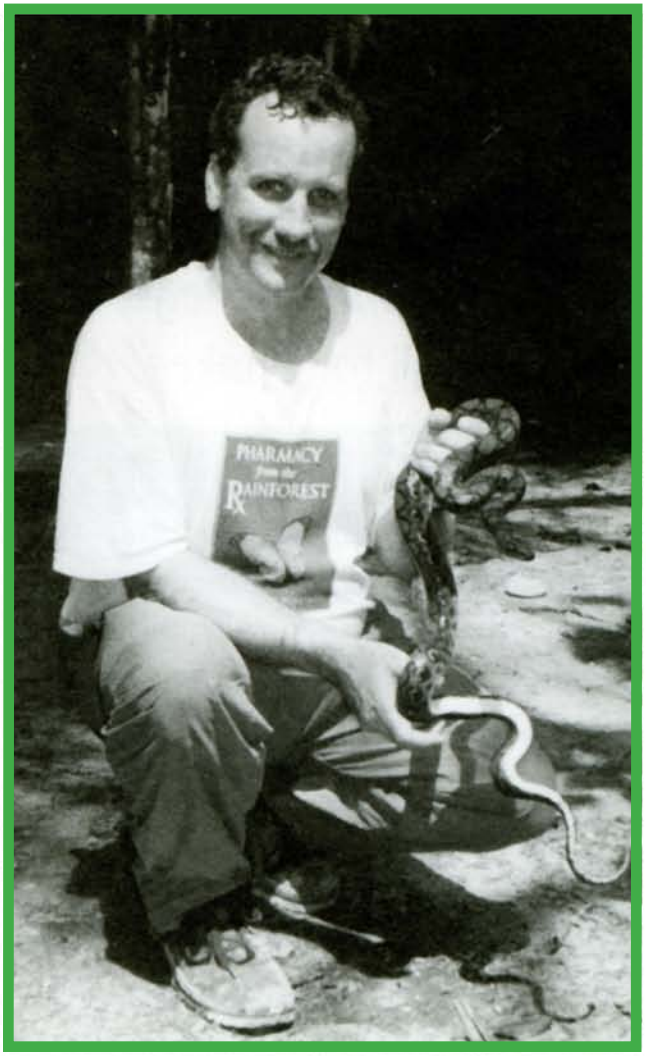
ATTACH THE SPINE TO THE SKULL

10. Staple the 2-inch piece of twist tie (step 4) from the body to the skull.
11. Paint and decorate!

It's a snake skeleton!



Learn More About Snakes



Dr. Larry Wilson

November 2001.
Larry Wilson in the Amazon Rainforest holding a rainbow boa.

Remember he is an expert. You should never try to pick up a snake in the wild!

If you love snakes and want to learn more about them, you might want to be a HERPETOLOGIST when you grow up. Herpetologists study reptiles. Larry Wilson, Ph.D., is the herpetologist at Fernbank Science Center. He has been interested in snakes since he was 5 years old. His most exciting snake adventure was in Kenya, Africa where he saw a 14-foot giant python. He wishes people would realize that most snakes are not dangerous and that even dangerous snakes are important in our ecosystem.

Written by Rachel Fiore. Graphics by Sheila Ward.
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Snake craft photographs by Bernard Thoeny