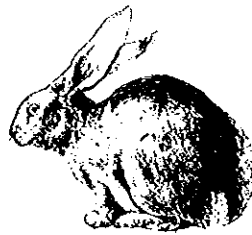


NATURE KIDS



SCIENCE PROJECTS JUST FOR FUN.

REPTILE INVESTIGATIONS

Reptiles are some of the most interesting animals around. If you don't have any around where you live, or if it's too cold for them to be out, come investigate some of ours here at the Nature Center.

Reptile Investigation - *check it out!*

ANIMAL INVESTIGATED _____

1. **Eyes:** Look at the shape and location of the eyes. Where do you think this animal can see without turning its head. (*clue: If you can see the eyes, the animal can probably see you*)

- To the side _____
- To the front _____
- Up _____
- Down _____
- To the back _____

2. **Ears:** Are there ears? _____ Where are they? _____

3. **Mouth:** How much of this animal's head does the mouth take up?

1/4 _____ 1/2 _____ 3/4 _____

4. **Throat:** Does the throat move? _____
If it does, why might that be? _____

6. **Skin:** Which picture looks most like this animal's skin? _____

OR draw the shape and pattern of scales here.



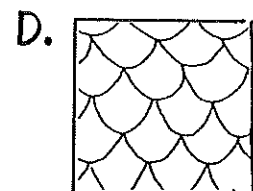
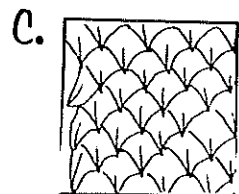
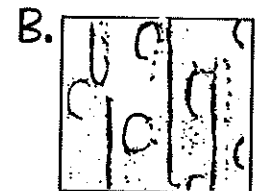
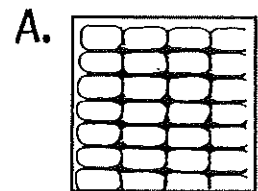
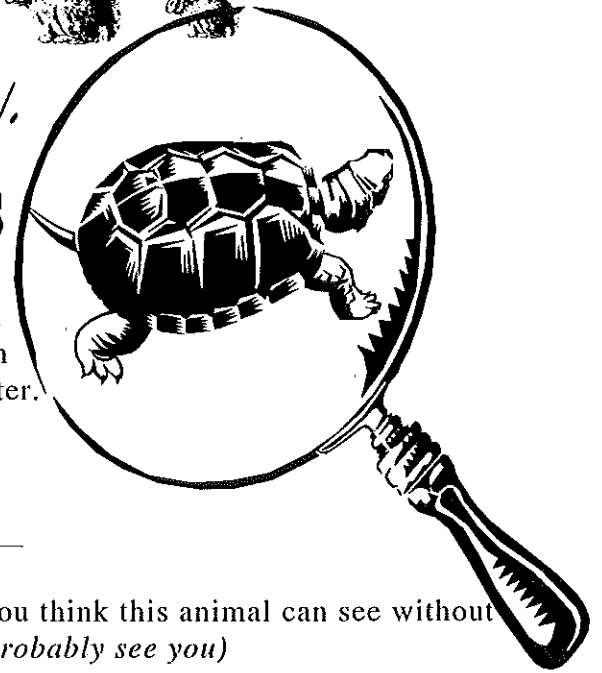
7. **Legs:** Compare the front and back legs. Are one set longer?

8. **Feet & toes:** How many toes are on the front feet? _____

How many toes are on the back feet? _____

Are there claws or nails on the toes? _____

Observation: What is the most interesting thing about this animal? _____



TEACHER'S CORNER

by Jenni Malone

READ UP ON REPTILES

Of all the vertebrates (animals with backbones), reptiles probably elicit the widest range of reactions and attitudes, ranging from fear and disgust to awe and reverence, and probably the most misconceptions, too. Turtles are associated with divine patrons of learning in places like Greece and Japan. Snakes are revered by religious sects in Asia as well as in Central America, yet there are many people who will not even enter a room that contains a caged non-venomous snake.

Currently there are over 6,000 species (kinds) of reptiles which are usually divided into four Orders: lizards, snakes and worm lizards; turtles and tortoises; crocodilians; and the tuatara. They are most identifiable visually by the scales which cover their skin. They reproduced by laying shelled eggs on land or by bearing their young alive. And they are ectothermic, meaning that they control their internal body temperature by moving to appropriate locations and so orienting themselves that they absorb or release the necessary amount of heat.

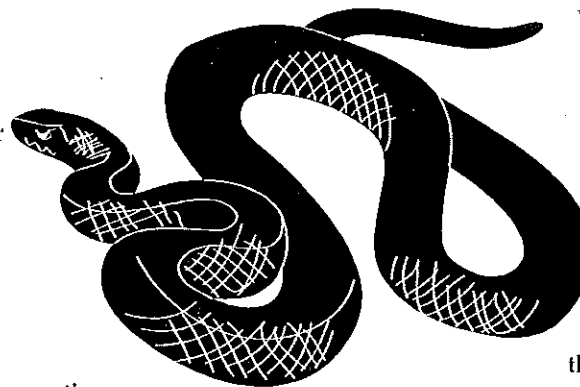
Reptile scales are not at all the same kind of scale as fish have. Reptile skin has two primary layers: the inner *dermis*, and the outer *epidermis*. The epidermis produces the scales. It consists of several layers the outermost of which is composed of *keratin*, a tough fibrous protein that also makes up our hair and nails. The scales are actually localized thickenings of keratin connected by hinges of thinner material. The thickened sections are often

folded back so that they overlap one another. As a snake grows, the outermost layer, which cannot stretch lengthwise, is shed periodically to allow for growth. Unlike fish scales, they are not separate, detachable structures but part of a continuous epidermal sheet. We sometimes use the particular number and pattern of scales on the head and body to help in sorting and classifying various reptile species. Under this epidermis is the dermis, which is primarily made up of connective tissue and contains numerous blood vessels. In some reptiles, most notably crocodilians, the dermis contains bone plates called *osteoderms*, which lie beneath and reinforce

or all male. In live-bearing reptiles, the egg shell has been lost or is greatly reduced, though the egg yolk usually remains a primary source of nourishment for the embryo.

Ectothermia is one of the most interesting characteristics of reptiles. Rather than controlling their temperature internally, like we mammals do, they travel between warmer and cooler areas of their environment and sometimes combine this with changes of posture, orientation, and color to influence the rate of heat gained in basking. Far from being inefficient, this behavioral thermoregulation keeps the body temperature higher and

only slightly more variable than endothermic mammals, and at a much lower energy cost to the animal. Reptiles need much less food than comparably sized mammals or birds, and thus can exploit environments where the food supply is sparse or sporadic.



the epidermal scales. In turtles and tortoises, the shell is formed by both the dermis and epidermis together. The *scutes* on the surface are made from the epidermis.

Most reptiles reproduce by laying eggs. The rate of development is determined by the ambient temperature. Sometimes the sex of the embryos is affected by the temperature, too. Thus a clutch of eggs may all turn out to be female

Whatever our emotional reaction is, we do recognize that they all play important roles in maintaining the dynamic balance in the ecosystems of which they are a part.