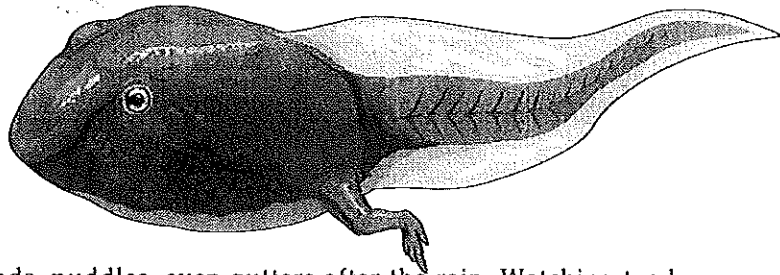


# NATURE KIDS



SCIENCE PROJECTS JUST FOR FUN.

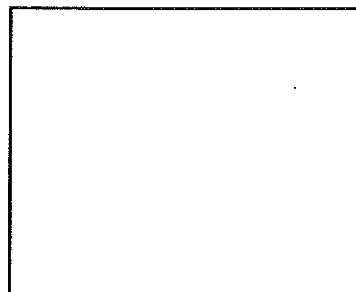
## RAISE TOADS AND WATCH HOW THEY CHANGE!



This is the time of year when toads are mating in ponds, puddles, even gutters after the rain. Watching toads grow up is really cool. They go through a METAMORPHOSIS (body change) just as exciting to watch as butterflies. If you want to be a Toad Raiser, just check out the gutters, ditches, ponds and puddles in your area after a rain. Collect some eggs or new tadpoles (remember to ask if they are on someone else's property). Try to take enough of the water they are in to start off. Put them in a clean bowl or jar in a nice warm place. Fill another bowl with tap water. Let it sit for a day, then you can add it to the tadpole water as needed. If you can, collect some algae with the tadpoles. It will grow, feed the tadpole and help aerate the water all at once. If not, you can feed them algae-based fish food, lettuce, or spinach. Use the chart below to help you keep a record of how they grow. When the front legs start to show, put a rock or a stick in the water for the forming toad to climb out on so it won't drown. When its grown, let it go. Toads recognize their food by movement rather than smell or color, so its hard to keep them. But they will do fine in you garden or yard, and you may see them again later on in the summer. Have fun!

DAY 1

Toad growing chart: Here is a picture of a tadpole or egg I raised:



Here is my chart of how it grew:

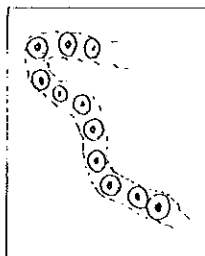
DAY ____	DAY ____	DAY ____	DAY ____
tadpole	with hind legs	with forelegs	toadlet

# TEACHER'S CORNER

by Jenni Mulone

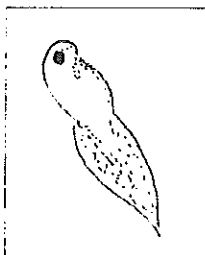
## The Toads in Your Garden

It's spring. The azaleas and the rebuds have bloomed.



Butterflies are here in numbers and migrating birds are seen almost daily. As counter-part to the daily bird

songs and bee buzzing, you may, on a quiet evening after a rain, hear a short trill, or a buzzing "eeenh" that lets you know the toads in



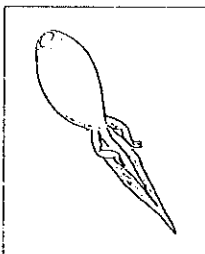
your garden have emerged and are ready to mate. Who are the nocturnal neighbors? We have three toads that are fairly common in the Houston area: the Gulf Coast Toad (*Bufo valliceps*), probably the best known and most often seen; the Eastern Spadefoot Toad (*Scaphiopus holbrookii*) found primarily in areas that were formerly prairies; and the Great Plains Narrow-mouth Toad (*Gastrophryne olivacea*). (The birdlike chirp is probably the Rio Grande Tree Frog- but that is another story.)

The Gulf Coast Toad is the largest of the three here. Its body generally measures 2 - 4 inches in length when full grown. It usually has a broad dark stripe on each side and a light stripe down the middle of its back. The skin color can range from nearly black to yellow-brown. This toad is not a specialist. It can live a wide range of habitats: ditches along railroad tracks or roadsides, prairies, beach

borders, even dumps and sewers.

The Great Plains Narrow-mouth Toad ranges in size from 7/8 to 1 1/2 inches in length. It has few color markings on its tan, gray or olive green skin, appearing much smoother than the Gulf Coast Toad. Its head looks small and narrows almost to a point. It lives generally in grasslands, or open wooded areas. You are more likely to hear it's buzzy "eeenh" call than see the Narrow-mouth Toad, as it spends a good deal of time under ground.

The Eastern Spadefoot Toad is midway between the other two in size, ranging from 1 3/4 to 2 1/2 inches when grown. It



is named for a sickle-shaped "spade" found on each of its hind legs which it uses to dig into the soil. It is

generally brown, gray or black with a yellow line trailing down its back from each eye, and, usually, an additional light stripe on each side.



All of these toads begin breeding in March and may continue into September, depending on rainfall and temperature. Toads must find water in which to lay their eggs. The male grasps the female under her forelegs and they swim together for several hours, she laying a long string of eggs, he fertilizing them. The eggs can

take several days to hatch into tadpoles. The process of metamorphosis from tadpole (a larval stage) to adult can take up to three months, depending upon temperature. Development is faster when it is warmer. This can be beneficial to tadpoles in temporary water (like a gutter). As the water warms up and evaporates the tadpoles develop more quickly, thus having a better chance of survival.

When the tadpoles hatch, they are pretty much just head and tail. They eat plant material or occasionally a smaller tadpole. The first stage of metamorphosis is marked by the emergence of the hind legs. Then the head flattens and the digestive tract alters to accommodate a carnivorous rather than vegetarian diet. The forelegs sprout and the gills disappear as lungs form. At this point the toadlet needs to be able to climb out of the water so as not to drown. The last of the tail is absorbed and the transformation from an aquatic, gill-breathing, herbivore to a land-dwelling, lung-breathing, insect and small animal eater is complete.

Toads are great insect eaters. Much of their diet consists of insects that are injurious to plants. They are garden



guardians, so welcome them, when you hear them call.

(See Nature Kids for tips on toad raising and a chart to follow their transformation.)