



CRITTER CONNECTIONS

Backyard Bugs



Texas Mountain Laurel



Texas Mountain Laurel (*Sophora secundiflora*) is a common plant that grows in central and southwest Texas. It is an evergreen, which means it has leaves year-round. It is very drought-tolerant, which means it does not need a lot of rain. It can grow in poor soil, and it has beautiful purple flowers in the springtime. These characteristics make Mountain Laurel a very popular shrub when landscaping backyards and public places.

The beautiful purple flowers bloom in the spring and smell just like grape Kool-Aid or bubblegum. The lovely smell attracts many types of insect pollinators such as bees and butterflies. Once the flowers are pollinated, Mountain Laurel produces large, fuzzy seedpods that are greenish-gray in color.

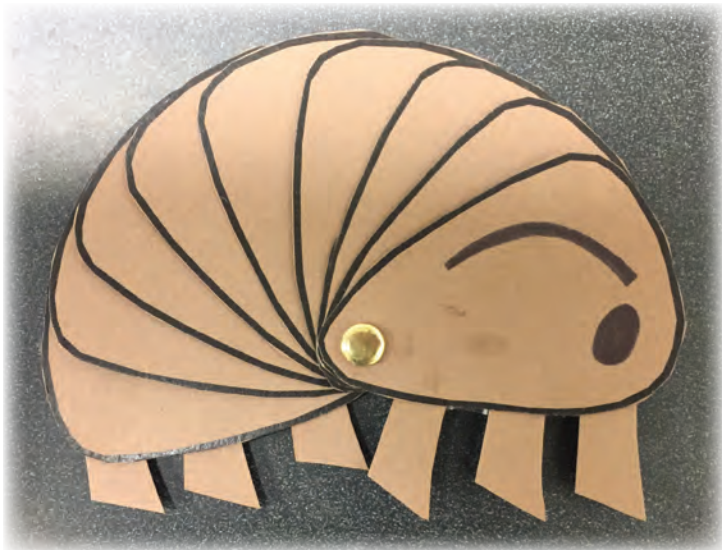


This plant is in the same family as peas, but the seeds are much more colorful than the peas you are used to. The seeds are bright red and very hard, which makes them popular in Native American artwork and jewelry. Beware; even though Mountain Laurel is related to peas, the seeds are very poisonous to humans and animals. Because it is poisonous, deer will avoid eating this plant, which is another reason why it is so popular for landscaping.

Photos and source: Ladybird Johnson Wildflower Center



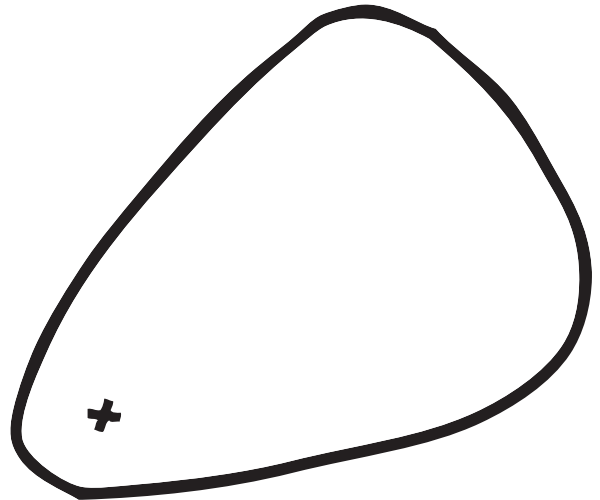
Roly-Poly Craft



Step 1: Draw or trace this shape 8-9 times on a piece of brown construction paper or cardstock.

Step 2: Cut out the shapes.

Step 3: Place the pieces together so the X's align and connect with a brad.



Step 4: Draw the pill bug's eye and antennae on the front shape.

Step 5: Use the leftover scrap paper to make legs and attach to the body.

To download this craft go here: goo.gl/n4VXvW

Did you know...

- ... that pill bugs, or roly-polies, aren't bugs at all, they are crustaceans like crabs and crawfish?
- ... that adult cicadas drink sap from trees?
- ... that roly-polies breathe using gills like fish?
- ... that male cicadas produce sound using special organs on their abdomen?
- ... that fireflies are not actually flies, but beetles?
- ... that cicadas have five eyes, two large compound eyes and three small eyes known as ocelli?
- ... that the glow from fireflies comes from a chemical reaction in their abdomen?
- ... that pill bugs are not native to the Americas, but were introduced from Europe?
- ... that some species of firefly synchronize their flashes in a pattern with other fireflies?



Cicada, Firefly, June Bug & Pill Bug

Photo source top left to bottom right: Toby Hudson, Robert Webster (2) & Franco Folini

Color Me

Firefly

Photuris pennsylvanicus

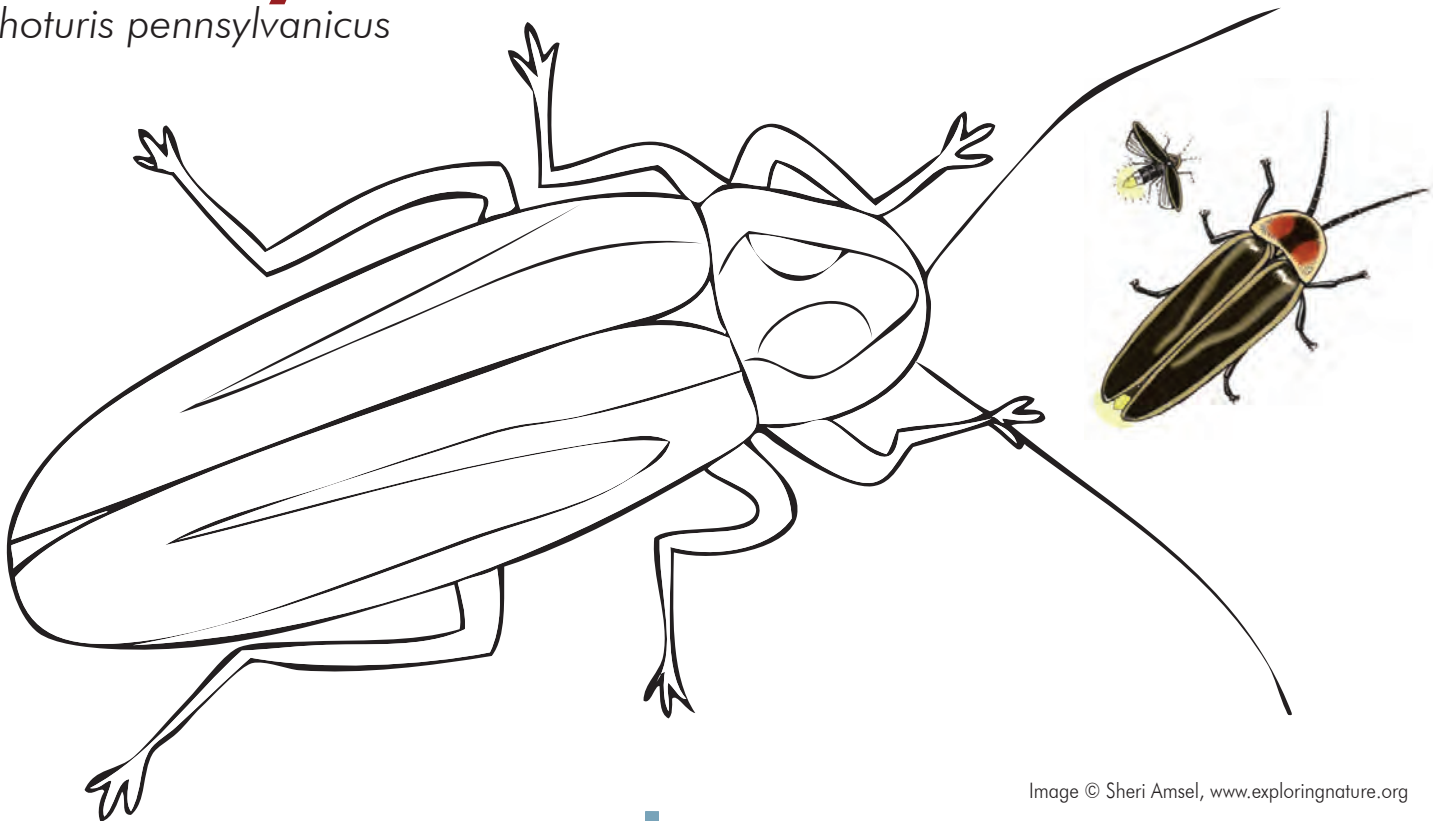


Image © Sheri Amsel, www.exploringnature.org



By Elanor Dean

Wildlife is all around us and there are many interesting creatures that can be found in your own backyard. Take a walk outside and explore using your senses of sight and sound and you will be surprised what you might find. This issue focuses on four types of backyard bugs: cicadas, fireflies, June bugs and pill bugs.

Cicadas



Cicada

You are probably more likely to hear a cicada than you are to see one. Have you ever been outside in the summertime and can hear an endless buzzing sound? Then you are probably listening to the call of a male cicada. They produce sound from a pair of organs on their abdomen called **tymbals**. This structure is a complex system of membranes and rib-like ridges that the male cicada will vibrate to make the buzzy sound.

Depending on the species, cicadas can live for many years; however, most of their life is spent underground in the nymph form of their life cycle. Female cicadas have a special structure used to cut a hole in the bark of the tree where she

will lay her eggs inside. Once the eggs hatch, the nymph falls down from the tree and burrows into the ground. During this time, the nymph will grow by shedding its skin and will feed on liquid from the tree's roots. After a number of years, sometimes up to 17 depending on the species, the cicada will rise from the ground and crawl up the tree trunk. It will shed its skin a final time, leaving behind an exoskeleton on the tree and emerge as an adult cicada. Adult cicadas will only live a few weeks or months. During this time, cicadas feed on tree sap while looking for a mate to start the life cycle over again.



Cicada Exoskeleton

Cicadas are insects and are in the order *Hemiptera* which are known as the 'true bugs.' The adult cicada is 2-5 centimeters (or 1-2 inches) in length with two pairs of powerful wings on their thorax. They have five eyes, two large compound eyes on either side of their head and three small eyes in the middle called **ocelli**. Their mouthparts are adapted into a straw-like structure that they insert into the tree to drink sap. The abdomen of male cicadas is partly hollow which allows the sound they produce to be amplified, or sound much louder. In the nymph form, they have strong front legs, which allows them to dig into the soil.

Birds commonly eat cicadas, but they do have some adaptations to avoid predators. First, they have great camouflage and are able to blend in with their environment. If that does not work, then cicadas are also able to fly to escape.

Fireflies

Fireflies, also known as lightning bugs, are not actually flies or in the 'true bug' order like cicadas, instead they are a type of beetle. Fireflies are more easily recognized at night because of the light they produce in their abdomen. The most common firefly species in Texas, the woods firefly, is about 1 centimeter (or half an inch) long with a red and black head, brown striped wings and a greenish-yellow abdomen.



Firefly

Fireflies produce light in a chemical process called **bioluminescence**. They have special organs on their abdomen, which cause a chemical reaction that creates the light. Adult male fireflies use the lights to find a mate, which means they need to be nocturnal, or active when it is dark outside. Some species of fireflies, outside of Texas, will



even synchronize their flashes with other males in the area to attract more females. The larval stage of fireflies, called glowworms, can also produce light, but that is thought to be a defensive adaptation to warn predators that they are poisonous.



Fireflies at Night

Firefly larvae are predators and eat snails, worms and slugs. Adult fireflies eat different food depending on the species, but they usually eat pollen and drink nectar. Some adult fireflies are known not to eat at all. Because fireflies are poisonous to vertebrates, or animals with a backbone, they do not have many predators in the wild.

June Bugs

June bugs, also known as June beetles or May beetles are also in the beetle family. They are named because of the time of year that they are most active, June. They are 1.3-1.7 centimeters long with a reddish-brown body, six hairy legs and two pairs of wings. The top pair of wings, known as **elytra** are there to protect the second set of wings that are used to fly.



June Bug

Like fireflies, June bugs undergo complete metamorphosis, with a four-stage life cycle. The female will burrow into the soil and lay about 30-40 eggs. After about a month the eggs hatch into small white larvae called grubs. They spend most of their life cycle in this larval form where they grow and go through several stages called instars. Eventually the larvae will become a pupa and after a few weeks will transform into an adult beetle.

They will eat plants, roots in their larval stage and leaves in the adult stages, which may cause damage to the plant. For this reason, some people who have gardens consider them a pest. June bugs are also very clumsy fliers and are attracted to lights, so they will commonly run into things, including people in brightly lit areas. Their sticky legs allow them to grip onto surfaces, but it also makes them cling to your hair or body if they accidentally land on you. They are harmless, however, so if this happens you can just gently pull them off and let them fly away.

Pill Bugs

Last, but not least we have the last critter on the list, pill bugs or roly-polies. Believe it or not, pill bugs are not



Pill Bug

insects at all, they are **crustaceans** like crabs and crawfish. They are about 1.5 cm long (or 3/8 inch), are grayish-brown in color, have a segmented rounded body and seven pairs of legs. They can also form a ball or **conglobate**, which is where the common name roly-poly comes from.



Pill Bug Conglobate

Females lay eggs that they carry in a pouch on the underside of their abdomen. Once the eggs hatch, the young pill bugs will remain in the pouch for up to two months after hatching. Young pill bugs look like or resemble the adults but are smaller.



Pill Bugs

Pill bugs are terrestrial crustaceans, which means they live on land, unlike many other species of crustacean such as shrimp and lobsters which live in water. They are often found in damp environments like under rocks and logs because they breathe using gills. They are nocturnal and come out at night to feed on dead or decaying plants and animal matter. They play an important role of decomposers in the environment. They will also commonly eat crops such as cucumbers and melons, which can cause damage and leads to a pest status among gardeners.

All of these bugs are really interesting and play an important role in the food chain, either as prey for other animals, as a clean-up crew eating dead or decaying materials or as a pollinator. Next time you are in your backyard or schoolyard, open your ears and your eyes and see what interesting creepy crawlies you can find.

WORD BANK

- Tymbals** - a structure used to produce sounds in insects
- Bioluminescence** - biochemical light produced by living organisms such as fireflies and jellyfish
- Ocelli** - a simple eye in invertebrates
- Elytra** - a pair of wings found in insects that protect the flight wings underneath
- Crustacean** - an invertebrate animal group including lobster, crabs and pill bugs
- Conglobate** - to form a ball

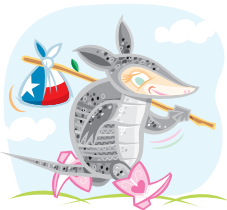
Sources: A&M AgriLife Extension Service and National Wildlife Federation
Photos in order by: Judy Gallagher, Becks, Geoff Gallice, Mike Lewinski, Robert Webster, Franco Folini, Assianir

Backyard Bug Trivia

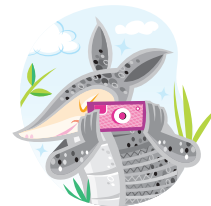
Answers: cicada, firefly, June bug, pill bug



1. I can roll into a ball to defend myself from predators. _____
2. I am the only 'true bug.' _____
3. I can create light using a special structure in my abdomen. _____
4. I am not an insect at all, but related to crawfish. _____
5. I was named because of the time of year I am most active. _____
6. I can make loud buzzing sounds using a special structure in my abdomen. _____
7. I play the role of decomposer in the environment. _____
8. I am a meat-eater in my larval form consuming snails and slugs. _____
9. I am a clumsy flier and am attracted to bright lights. _____
10. I have mouthparts adapted for drinking liquid from trees. _____



Nancy's Corner



Use these tips
to find bugs in your
own backyard
or schoolyard.

Did you find anything interesting?
Draw a picture of it in blank space provided.

1. Choose a spot outside to sit and listen to the sounds around you. What do you hear? _____
2. Use a hand lens to closely observe the grass and plants.
3. Look for insects sitting on the trunk of trees.
4. Observe flowers to find flying pollinators.
5. Turn over rocks and logs to see what is underneath.
6. Take a friend, sibling or parent with you. Ask if they have seen anything interesting and if they have any more tips.

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TWA is a membership-based, non-profit organization whose goal is to educate all people, especially the youth of Texas about conservation, management and stewardship of wildlife and habitat on private land.

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