

## Bugs and More Bugs By Linda Butler

Kids love bugs.

What is it about bugs that fascinates kids? Perhaps a child's shortness and lower vantage point makes bug and kid interaction inevitable. Just about anywhere you go, a child will meet up with a bug. A fly on a fence, a buzzing bee, a crawling centipede, a stealthy spider, a slimy slug. Creepy, crawling, and captivating, learning about and finding bugs can bring interesting insights.

First off, what exactly *is* a bug? Well, not every crawling critter is a true bug. Technically, or taxonomically, a bug is a creature that belongs to the insect order *Hemiptera*. Ants, cicadas, aphids, squash bugs, water skaters, and bedbugs are examples of nearly 77,000 species of true bugs. True bugs have piercing mouth parts that allow them to suck juices from plants and occasionally animals. But even naturalists and scientists use the common term "bugs" to mean creeping crawling things such as flies, butterflies, spiders, snails, slugs. It is this larger definition of bugs that we'll look at today.



Bugs are everywhere! There's even an insect that lives year-round in Antarctica—a tiny fly called the Chironomid Midge, *Belgica antarctica*. Bugs are found outside and even inside our homes. A bug hunt can be a fun way to meet new tiny life forms right in your own backyard. Bugs can be found underground, crawling on the ground or in grass, climbing on leaves and tree trunks, hiding under leaves, flying overhead. Bugs can be caught in a jar, observed for a few minutes or hours, then released. It's interesting to watch bugs move. Some skitter along on stumpy little legs, others move slowly on legs that look like sticks. Spiders and flies seem to defy gravity as they walk up walls and on ceilings.

While looking for and at bugs, talk about them. Count the legs and talk about how all insects have six legs. Identify insect parts—head, thorax, abdomen. Have them draw the bugs that they meet and find a few interesting facts about the bug.

Be positive and safe around bugs. The vast majority of bugs are harmless, but a very few can cause harm. Many insects are vital to life. Without worms our soil would be nearly as hard as cement. Without bees, we wouldn't have many vegetables, flowers, or fruit. Birds are kept alive by eating bugs—they eat 400-500 million tons of insects each year. A bat eats from 6,000 to 8,000 insects a night. Their appetite for mosquitoes makes life better for all of us! House spiders are also great at mosquito control.

Here's an introduction to some common bugs:

Bees can fly up to 60 miles a day while gathering nectar and pollen. It takes the nectar from two million flowers to make one pound of honey. Each bee makes about 1/12 teaspoon of honey in her lifetime. And yes, all the worker bees are female. A beehive consists of 10,000-50,000 female worker bees and one queen. The queen lives up to 5 years and lays up to 200,000 eggs a year. The worker bees live about six weeks. The male bees, called drones, have no stingers and live only 3-4 weeks. Their only job is to

mate with the queen so she can produce babies. The bees' buzzing sound is made by their wings which beat 230 times per second.

Ants are strong—they can lift more than 50 times their weight and sometimes they work together as a group to carry heavy things. If you were as strong as some ants, you could lift a school bus with each hand! And, ants don't have ears; they feel vibrations from larger creatures in the ground through their feet.



Houseflies use their feet to find sugar. Butterflies also taste with their feet. Butterflies begin as an egg. Then a larva (caterpillar), then they become a pupa (chrysalis) and hatch as an adult butterfly. Flies also have a similar lifestyle--egg, larva (maggot), pupa, adult fly. Butterflies are vegetarians, eating mostly nectar, which they drink through straw-like tongues. Caterpillars eat mostly plant matter—stems and leaves. Flies, however, are omnivores. Both maggots and adult flies eat organic decaying material—fruit, vegetables, plants, meat, and feces.

Dung beetles also eat poop—and not much else. They prefer the high-nutrient dung from herbivores, such as cows or elephants. Dung beetles are strong, they can carry over 1,000 times their weight. That comes in handy when they roll and move dung balls that are much larger than they are.

Most bugs try to hide and blend in with their surroundings. But Ladybugs are bright red to warn predators that they taste bad and are a bit poisonous. (Ladybugs aren't venomous and are safe to hold, they're only poisonous if eaten.) Birds and other ladybug predators know to avoid eating these bright and beautiful bugs.

The common fruit fly that buzzes around our overripe peaches and bananas was the first animal sent into outer space. In 1947 fruit flies were launched to an altitude of 68 miles and were recovered alive. Fruit flies live out their lives in just over a month and because they reproduce so quickly, they have been used for a lot of scientific and genetic research.

Slugs and snails walk—or crawl—around on one foot! Their body is mostly foot. And the slime trails they leave behind is a liquid crystal—a substance between a liquid and a solid. It's both adhesive (sticky) and lubricating. Slug slime protects slugs from bacteria and helps them climb challenging surfaces—like up your kale stalk. The largest land slug in the US is the banana slug. It's about the size—and color—of a yellow/green banana. And the banana slug is actually a college mascot—for the University of California at Santa Cruz. Go, slime 'em slugs!

Bugs are the theme of today's craft. Use your thumbs or fingers to make finger/thumbprint greeting cards. Cardstock works best, but blank white paper works, too. We liked making small cards because bugs are small, too.



Start your bugs with a fingerprint or thumbprint. Use a stamp pad, washable markers, or slightly thinned tempera paint for finger printing. If you use paint, put just a small amount in a saucer, you don't need very much paint or ink to make good prints. If using a marker, rub (or have someone help you rub) some of the ink onto your finger and press it onto the paper.

After you've made the thumbprints, add decorative details—eyes, antennae, wings, legs. Make a colorful buggy menagerie! A fine tip marker is great for adding these details.

After your cards dry, you can use them to write a note to your grandparents, aunt, uncle, or cousins. It certainly won't bug anyone to receive a happy greeting card!

Many books about bugs can be found at the Pleasant Grove Library: "Bugs" by Rosie Dickens, "Bugs" by Nancy Winslow Parker, "Some Bugs" by Angela DiTerlizzi, "Rocky Mountain Bugs" by Darrick Pfaffman, "Classifying Insects" by Andrew Solway, "Incredible Insects Q&A" by Sally Tagholm.