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**WILD WORLD
HANDBOOK**
CREATURES

How Adventurers, Artists,
Scientists—and You—Can Protect
Earth's Animals

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BACKMATTER TK



stepdaughter had a gift and he encouraged Maria to paint the flowers and insects she loved. She spent years studying art and nature, spending long hours outdoors. Since girls didn't attend school, she studied natural history and Latin at home so she could read the scientific books of her day. (Back then, Latin was the universal language of science.) By the time Maria got married and had her first child, she was a successful watercolor artist who'd earned a reputation for her insect paintings.

The Mind of a Scientist

In those days, most nature artists observed dead specimens to create their art. Beetles and butterflies were killed and preserved like precious gems in special collections called "curiosity cabinets." But Maria thought the best way to learn about insects was to study them in their natural habitats, to see how they lived. Maria took her art supplies into the fresh air, and in doing so, she made significant discoveries that other people missed.

During her observations, Maria witnessed a mysterious process scientists and scholars had begun to ponder, known as "metamorphosis." Metamorphosis comes from a Greek word meaning "transformation." They noticed that some animals changed in dramatic ways. Maria had seen this for herself as she watched caterpillars become moths and butterflies. In 1679, when she was thirty-two years old, Maria published a book about metamorphosis called *The Wondrous Transformation of Caterpillars*, filled with illustrations of insects transforming from egg to caterpillar to pupa and finally to moths and butterflies. Eventually, Maria's work would help disprove the idea of spontaneous generation. Insects didn't magically appear, they came from eggs. And they weren't evil shapeshifters, they were intriguing animals.

Wealthy collectors bought Maria's art, and in turn, they shared their exquisite insect collections with her. It was in one collector's "curiosity cabinet" that





INVESTIGATE INSECTS

People have collected dead insects for hundreds of years—for scientific study and as a hobby. As you read in Maria Sibylla Merian’s story, people often stored dead insect specimens in special display boxes called “curiosity cabinets.” (In fact, you can still see these collections in museums today.) But just as Maria discovered, it’s more interesting—and better for the bugs—if you study living insects in their natural habitats. Explore your yard or a park using these tips:

INVESTIGATE PLANTS. Some of the best places to spot insects are on or near plants. That’s where they get most of their food.

ZOOM IN. Most bugs are very small, so use a magnifying glass to get a closer look. (But keep your distance from insects that sting, such as wasps.)

CREATE A PHOTO COLLECTION. Take photos of what you find and create your own insect photo collection.

Bug Basics

Here are some common insects in the U.S. See if you can find these where you live—and remember to look, don’t touch.:



ANTS

Examples: carpenter ant, sugar ant, pavement ant, field ant.



BUTTERFLIES

Examples: monarch, Eastern tiger swallowtail, black swallowtail, cabbage white, spring azure.



MOTHS

Unlike butterflies, moths are mostly nocturnal! Examples: luna moth, sphinx moth, silk moth.



DRAGONFLIES

Examples: blue dasher, ebony jewelwing, pondhawk.



BEETLES

Examples: scarab, ladybug, firefly, ground beetle.



SPIDERS

Spiders are arachnids but they live in the same habitats as insects. Examples include: jumping spider, American house spider, wolf spider.

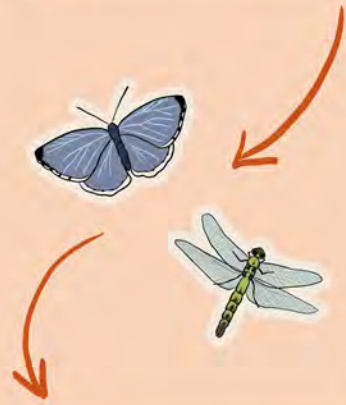
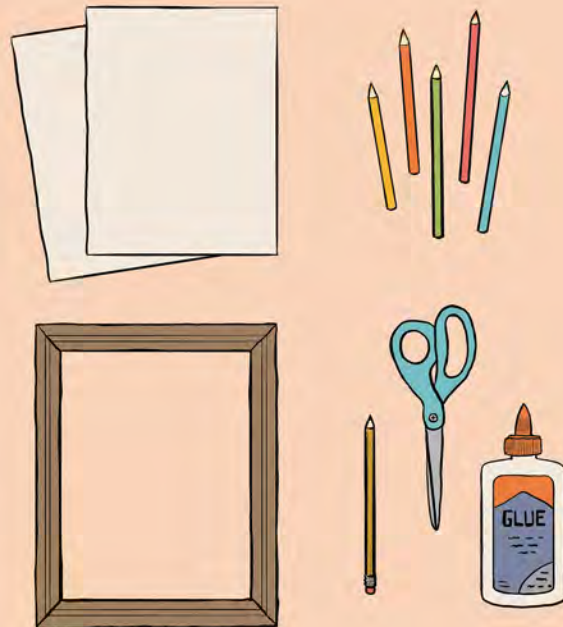


A CURIOUS COLLECTION

Early insect collectors filled cabinets with their specimens or pinned them to paper. Now we know that it's best to leave insects where we find them and admire them in the wild. But with a little creativity, you can still "collect" the ones you see.

Supplies

- Card stock
- Picture frame (without the glass)
- Pencil
- Colored pencils or markers
- Scissors
- Craft glue



Instructions

1. Cut a piece of card stock to fit inside the picture frame. Place the card stock inside the frame and fasten the back to hold it in place. (Use a small frame for a single "specimen" or a larger frame if you plan to build up a collection.)
2. Whenever you see an insect or take a photo of one, draw it on a piece of card stock. Use colored pencils or markers to color it in.
3. Use scissors to cut out the drawing. (If the insect has wings, fold the drawing lengthwise along the middle to give it a 3D effect.)
4. Use a dab of craft glue to attach the insect to the framed card stock. Write the name of the species underneath. Keep adding to your collection as you discover more insects! (Or use the insects you find to inspire your own imaginary versions.)